2024 Okanagan Travel Survey

Report 3

Analysis of Survey Results and Trends

2024 Okanagan Travel Survey

Report 3: Analysis of Survey Results and Trends

Prepared for:
City of Kelowna
City of Vernon
City of West Kelowna
Westbank First Nation
District of Lake Country
District of Peachland
Regional District of Central Okanagan
BC Ministry of Transportation and Transit

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Transportation Planner, City of Kelowna

Anne Huisken
Transportation Planner, City of Vernon

Finally, Ipsos would especially like to thank the more than 5,100 participating households who participated in this survey and made this project possible. We thank you for your participation in the 2024 Okanagan Travel Survey.

Survey Highlights

2024 Okanagan Travel Survey

The 2024 OTS was carried out from early October through the first week of November 2024. The Okanagan Travel Survey is conducted approximately every five years in the Central Okanagan and City of Vernon area. Prior OTS surveys were conducted in 2007, 2013 and 2018. The 2024 survey collected data from 5,158 households, representing 4.1% of households in Vernon, Kelowna and the rest of the Central Okanagan. The trip data obtained from the survey offers a comprehensive 24-hour snapshot of the travel patterns exhibited by residents aged 5+ in the study area during a typical weekday in the fall season.

Major Trends since the 2007 Baseline Survey

It has been seventeen years since the baseline 2007 Okanagan Travel Survey. In this time, the following trends can be observed:

- 53% increase in households,
- 44% increase in population (with the average household size decreasing from 2.31 to 2.24 persons),
- 36% increase in vehicles,
- 63% increase in bicycles,
- 33% increase in the employed labour force,
- 70% increase in retirees,
- 4% decrease in trips made by household members aged 5+ years.

Of note, there have been positive shifts towards more sustainable or active modes of transportation since the baseline study. Specifically:

- 246% increase in total straight-line distance travelled using public transit by residents across the study area and a 1% decrease in distance travelled by vehicle driver trips,
- 5% increase in mode share for sustainable modes of transportation (transit, school bus, walking and cycling).
- 3% increase in mode share of active modes of transportation (walking and cycle),
- 4% decrease in mode share of vehicle trips (as a driver or passenger).

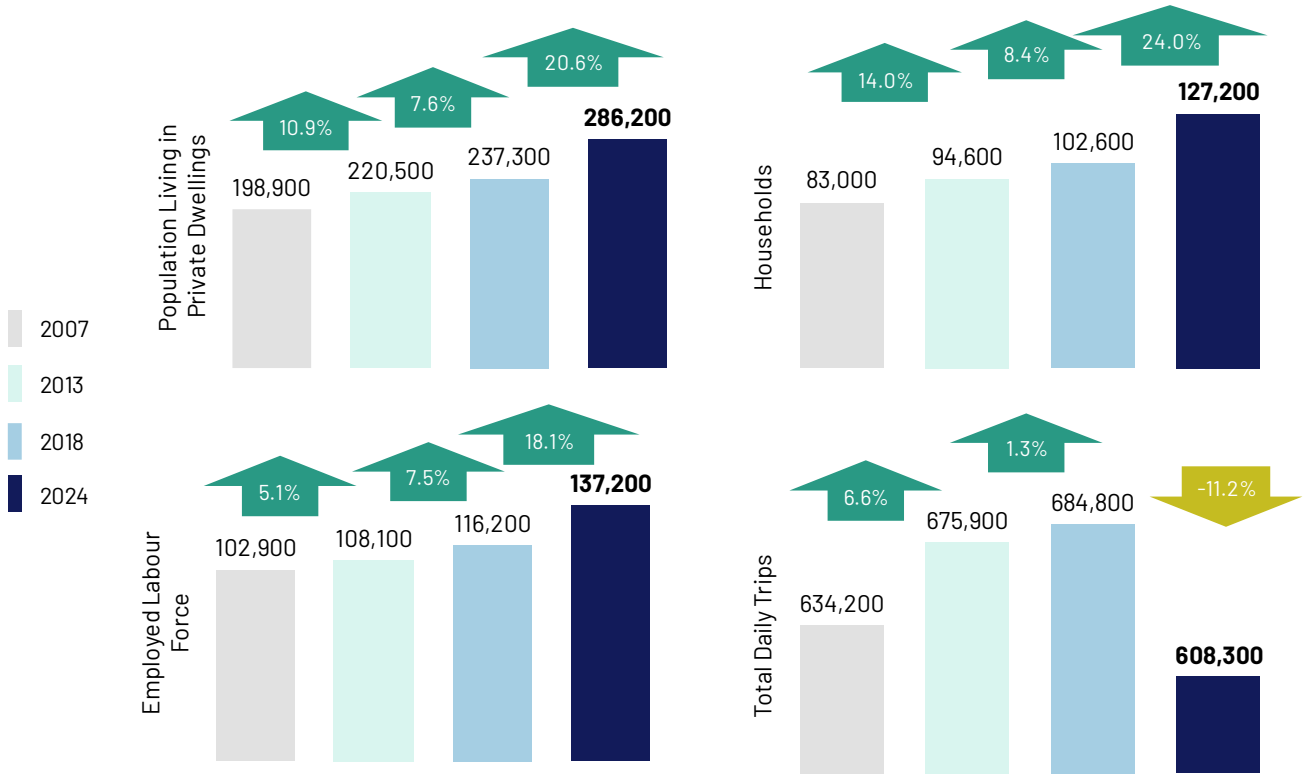
It may be noted that the 4% decrease in trips varies across the survey area. Vernon saw a 18% decrease in total trips across the 17-year period, compared to a 4% decrease in Kelowna and a 6% increase in other parts of the Central Okanagan.

The 2024 survey results indicate there has been a substantial decline in trip rates over the last years, from 3.02 daily trips per person average in 2018 to 2.22 in 2024. While this follows a pattern of diminishing trip rates since the 2007 baseline study, the decline over the last six years was likely accelerated by changing travel habits as a result of shifts in working arrangements, personal business and shopping patterns, and factors related to population demographics. Looking at trip rates by age groups, those 55 years or above have below average trip rates. Analyzing results from a gender

perspective also revealed that women now have lower trip rates than men (2.16 compared with 2.28 daily trips, respectively).

The charts below depict the trends in population, households, workers and trips across the survey cycles since 2007. In comparison to the growth in population illustrated, the average population increase in Canada was 5.9% from 2006 to 2011, 5.0% from 2011 to 2016, and 5.2% from 2016 to 2021.

Exhibit – Figure 1. Population and Households (Expanded), 2007-2024



Vernon, Kelowna, and the Rest of the Central Okanagan

The analysis of the 2024 Okanagan Travel Survey mainly looks at three sub-areas: Kelowna, with 55% of the population, the rest of the Central Okanagan (28%), and Vernon (16%). The household, demographic, and employment characteristics of these areas differ, which, along with their geographies, have an impact on the travel patterns. The table below summarizes some key characteristics which may provide some perspectives on the differences between these areas.

Exhibit - Table 1. Population and Households (Expanded), 2024

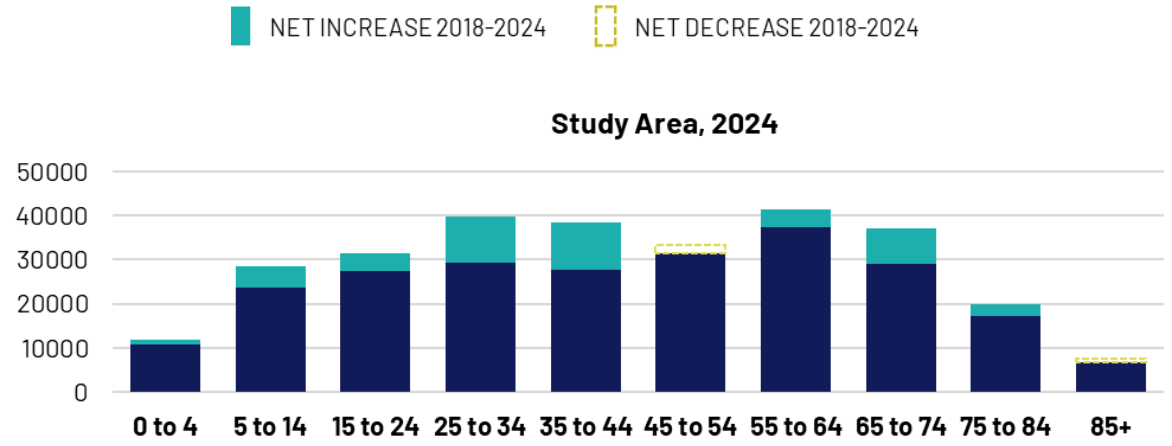
	Vernon	Kelowna	Other Central Okanagan
Households	21,609	70,964	34,604
Population	46,212	158,624	81,391
Households Sizes	34% 1-person 39% 2-person	31% 1-person 38% 2-person	24% 1-person 44% 2-person

	27% 3+persons	31% 3+persons	33% 3+persons
Dwelling Types	48% house 25% apartment or condo 26% other	42% house 32% apartment or condo 26% other	63% house 12% apartment or condo 25% other
Household Income	8% under $30,000 60% over $80,000	9% under $30,000 66% over $80,000	6% under $30,000 69% over $80,000
Average Age	45.0 (up from 43.8 in 2007) 26% 65+	43.1 (up from 41.9 in 2007) 20% 65+	47.9 (up from 42.4 in 2007) 23% 65+
School & Work	16% students 44% workers 30% retirees	20% students 50% workers 22% retirees	17% students 46% workers 28% retirees

Increasingly Younger Demographics

The chart below illustrates the change in the age distribution of the study area since 2018. As shown, 55- to 64-year-olds continue to make up the largest share of the population; however, younger demographics aged 25 to 44 years old have seen substantial growth since 2018 that is outpacing that of older age groups. In fact, much of the 20.6% population growth between 2018 and 2024 can be attributed to those under the age of 45.

Exhibit – Figure 2. Population Distribution By Age (Expanded), with Change from 2018-2024

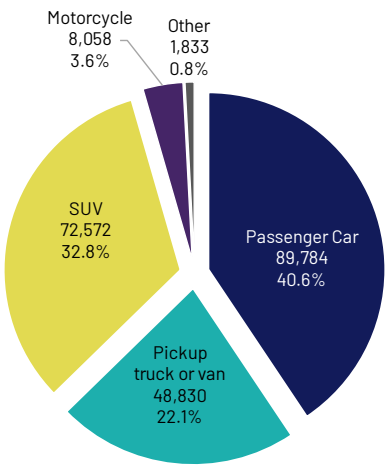


Transportation Options

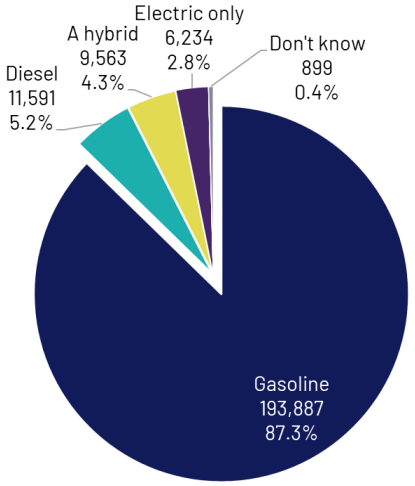
Vehicles. Residents of the study area own or have access to approximately 222,200 household vehicles. Across the study area, 95% of households have at least one vehicle. This proportion is lower among single-person households (88%) and those living in apartments (85%). Approximately 12% of all vehicles use alternative fuels, with a substantial increase in hybrids (4.3% up from 1.6% in 2018) and electric vehicles (2.8% compared with 0.4% in 2018).

Exhibit – Figure 3. Vehicle Types and Fuel Types (Expanded), 2024

Vehicle Fuel Types



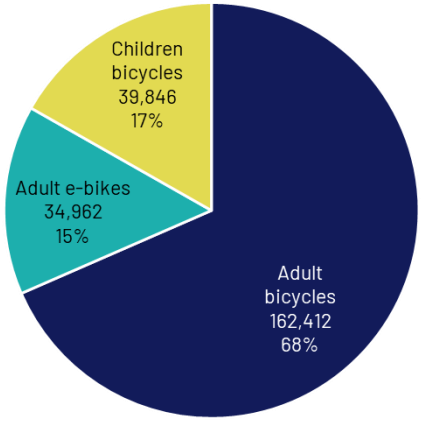
Vehicle Types



Drivers. There are 221,700 licensed drivers in the study area. The proportion of the population eligible for a license (aged 16 and above) has steadily increased over the last seventeen years, from 81% in 2007 to 92% in 2024.

Bicycles. There has been a sharp increase in the number of bicycles, with residents reportedly owning a total of 237,220 working bicycles, up from 178,800 in 2018 (representing an increase of 33%). Despite a decline in average household size, the average number of bicycles per household has increased since 2018 to 0.83. A similar trend is observed for the average number of bicycles per person. This can likely be attributed to the increased demand for bicycles during the COVID-19 pandemic. There has also been a substantial increase in e-bike ownership over the last six years – 15% of all bicycles in the region are now e-bikes up from 2% in 2018.

Exhibit – Figure 4. Bicycle Types (Expanded), 2024

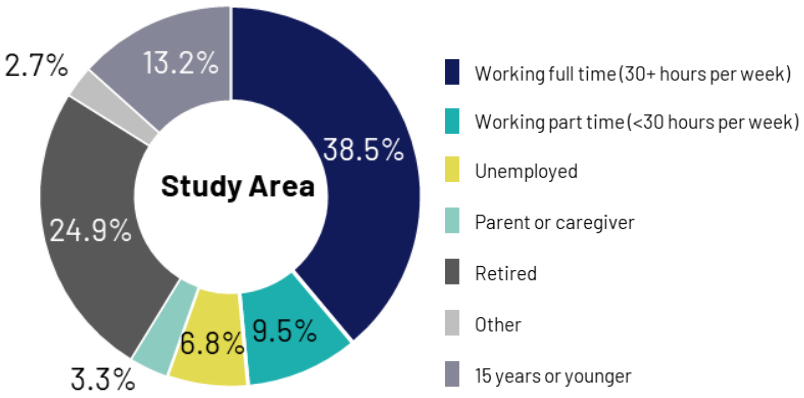


Mobility Challenges. Across the study area, 2.6% of the population (reflecting approximately 7,300 residents) use a mobility aid to get around, while another 3.2% report a mobility challenge but do not use an aid. The use of a mobility aid increases with age, ranging from 5.5% of those 70-74 years of age to 39.6% of those 86 years or older.

Employment and Student Status. Across the study area, there are 137,200 workers comprised of 110,100 full-time workers and 27,100 part-time workers, representing just under half of the total population. There are also 71,350 retirees, a 22% increase in the six years since the last survey, representing 25% of the total population.

In total there are also 36,900 K-12 students and 17,100 post-secondary students. In the past five years, all sub-areas have seen an increase in K-12 students, with the largest increase in Kelowna (25%).

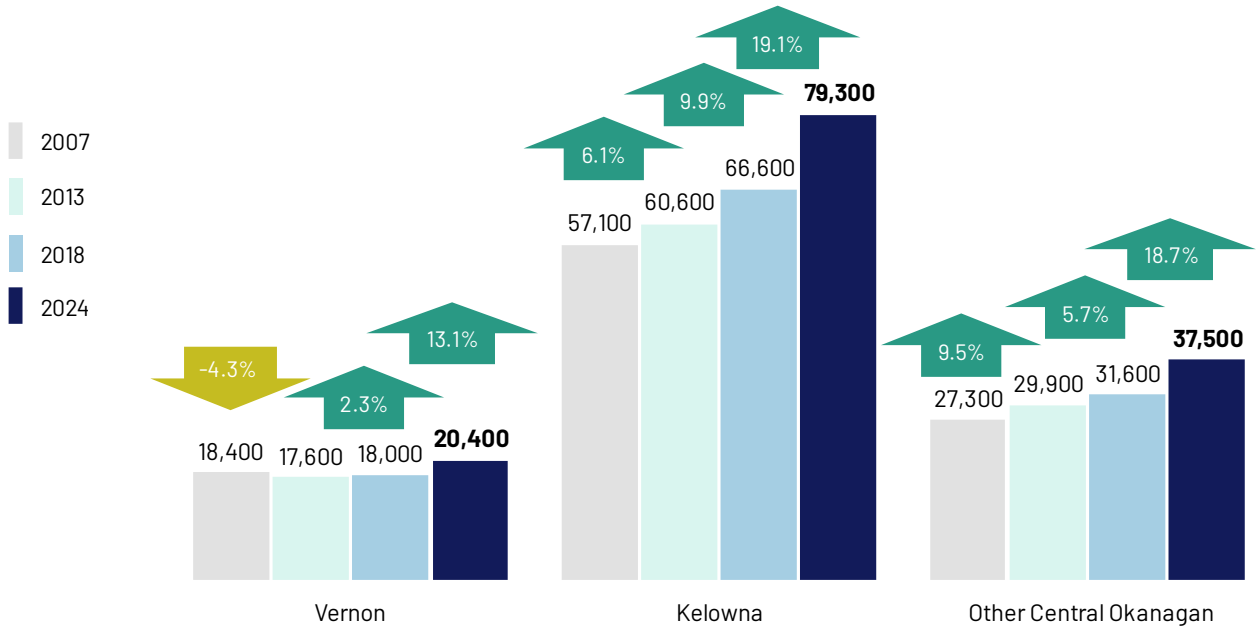
Exhibit – Figure 5. Occupational Status (Expanded), 2024



In the six years since 2018, enrolment at the three post-secondary schools has increased by 16%, although the survey does not reflect those who live on campus or outside the study area. As noted elsewhere in this report, post-secondary students are key transit users. Approximately 29% of trips to post-secondary school are by transit bus, and 18-24 year olds make up the largest proportion of transit users (17% of all trips made).

The employed labour force has grown most in the Central Okanagan (19% in both Kelowna and other areas in the Central Okanagan). This is generally in line with the population growth in both areas (22% in Kelowna and 21% in Other Central Okanagan) during the same time period.

Exhibit – Figure 6. Employed Labour Force by Sub-Area (Expanded), 2007-2024

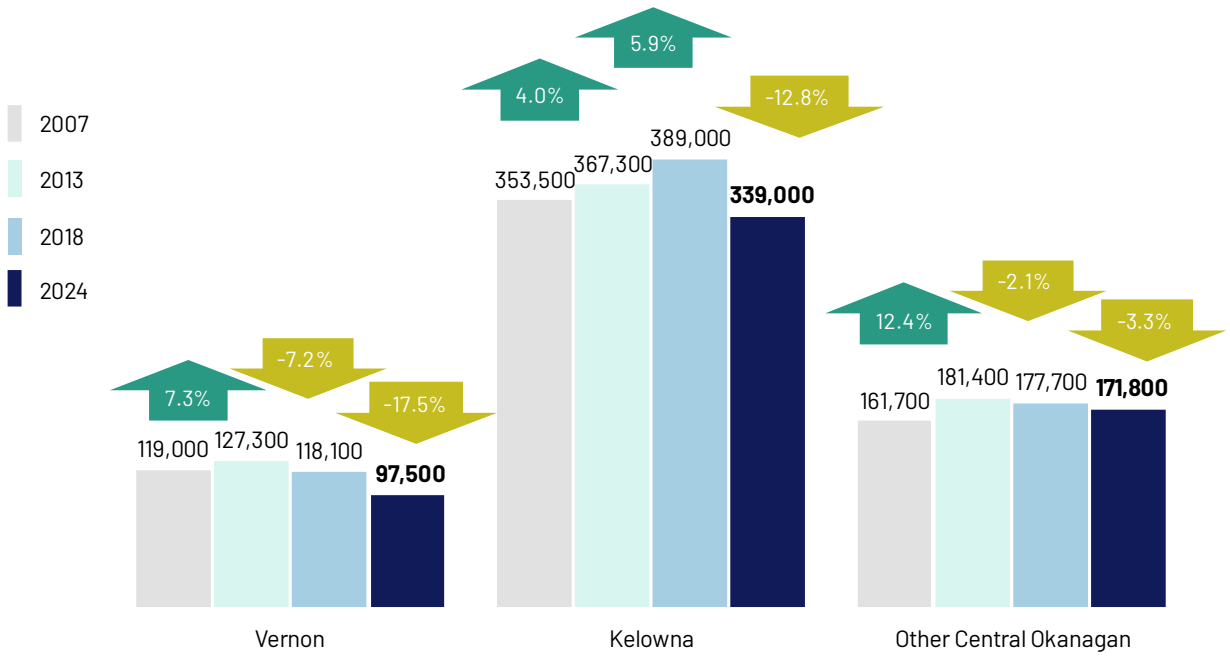


Trip Volumes

In total, residents of the study area make approximately 608,300 trips on an average weekday, a decrease of 3.9% over the 17 years since the 2007 baseline survey but a substantial decline of 11.2% over the last six years. This is despite the 18.0% growth in persons 5+ years of age (those from whom trips were surveyed) during the same time period. The average number of daily trips per household has also declined, from 6.67 in 2018 to 4.78 in 2024. A similar trend is observed at the person-level.

While trip rates have been steadily declining since the 2007 baseline study, shifts in working arrangements as a result of the COVID-19 pandemic likely accelerated this trend, coupled with the increased availability of e-commerce and virtual services. In fact, the proportion of workers who now work from home has seen a substantial increase since 2018, with more than 1 in 5 (22%) now working from home up from 12% in 2018.

Exhibit – Figure 7. Trip Volumes (Expanded) – Study Area, 2007-2024



Trip Volumes by Time of Day

The volume of trips by day follows a similar pattern to previous survey cycles, with peaks in the morning and afternoon. The volume of trips begins to rise at 6 AM, reaching a concentrated morning peak at 8 AM before dropping to an inter-peak period between 9 AM and 1 PM. The afternoon trip volume reaches a peak at 3 PM and begins to steadily decline from 4 PM onwards.

Evaluating trip volumes by overall purpose reveals a more nuanced picture of travel patterns. Home-based work (HBW) trips peak earlier in the morning, while home-based school (HBS) and home-based other (HBO) trips dominate at the 8 AM peak hour. The latter is likely attributed to a high volume of

passenger-drop off trips during this time of day. HBO trips continue to dominate for the remainder of the day, reaching a second peak at 4 PM which coincides with the afternoon HBW peak.

Exhibit – Figure 8. Trip Volumes by Time of Day (Expanded), 2007-2024

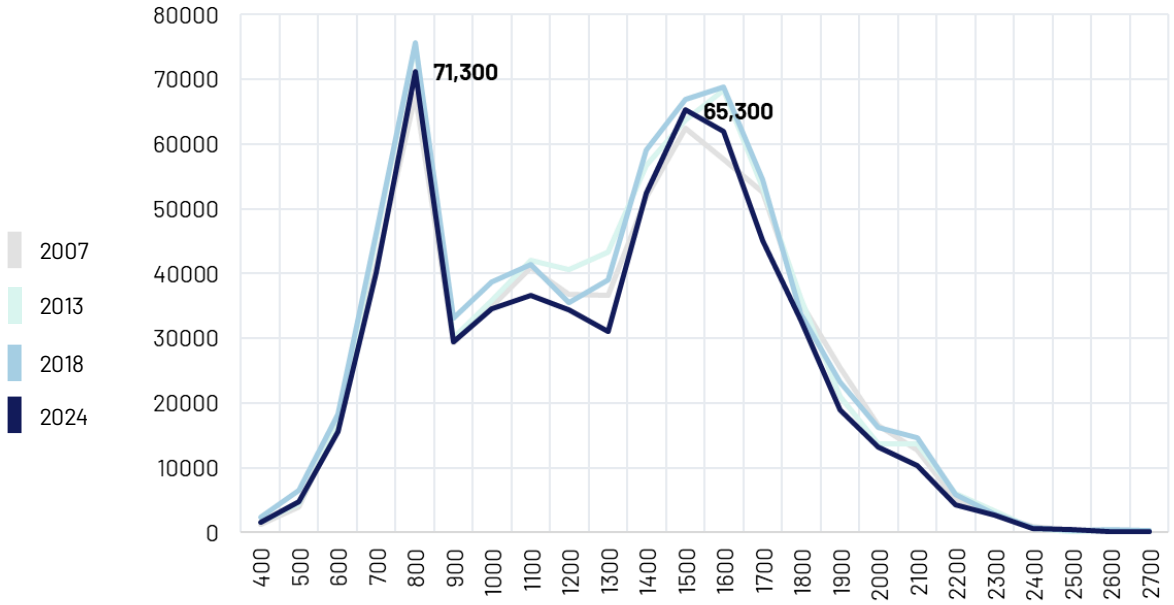
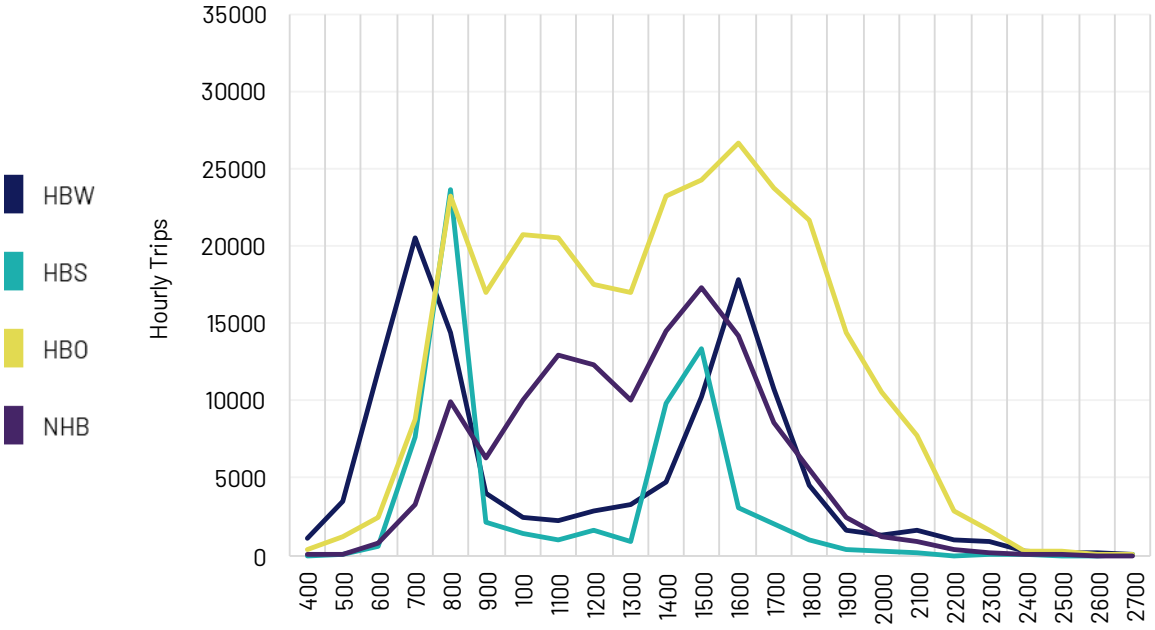


Exhibit – Figure 9. Home-Based Purposes - Trip Volumes by Time of Day (Expanded), 2024

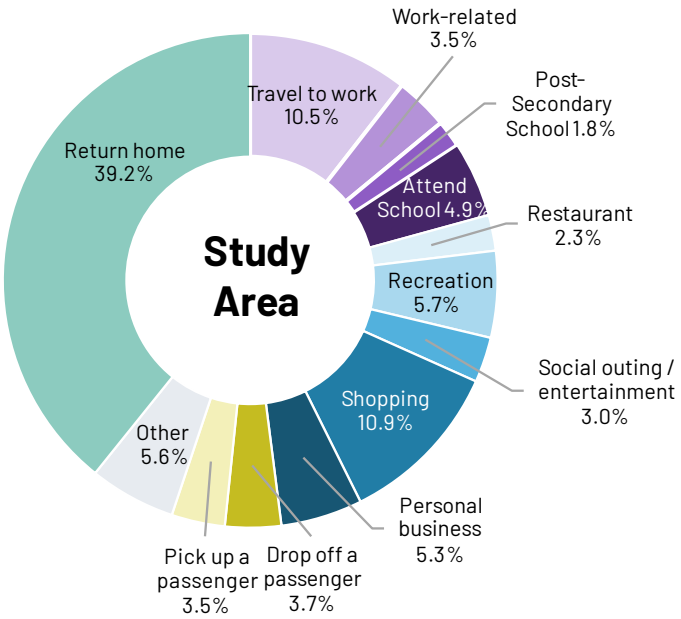


Destination Activity

Trips to work or work-related destinations account for more than 1 in 10 trips (14%). K-12 and post-secondary school commutes make up about 7%, while trips to serve passengers (pick up or drop off) account for another 7% (with many of these being to school, work or recreational destinations for other household members).

Combined, non-commute purposes make up more than one-quarter of all trips: shopping accounts for 11%, personal business comprises another 5%, and social, leisure or dining activities make up another 11% of all trips. Of the total daily trips. 39% of trips are returning home from one of the activities described above.

Exhibit – Figure 10. Trip Purpose, 2024



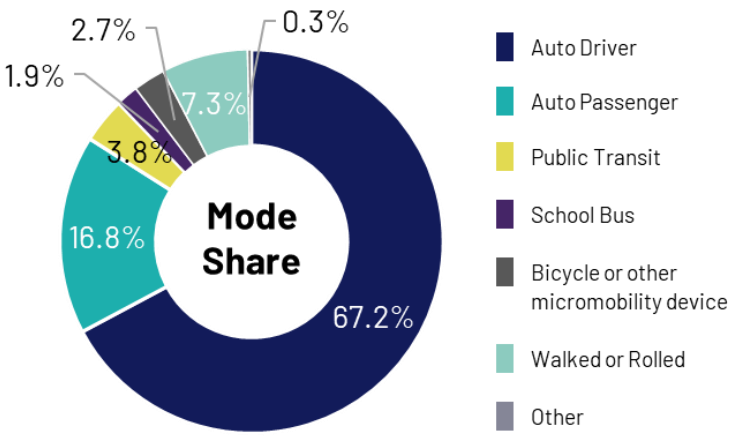
Vernon residents make proportionately fewer trips to serve passengers, to attend K-12 school or for work-related purposes which aligns with the older age cohorts in this community. Meanwhile, Kelowna residents have more work and post-secondary related trips. Other Central Okanagan has the highest share of work-related and K-12 school trips than those in other areas, which could be a reflection of the larger household sizes in this community (suggesting more families with children).

Transportation Modes

Mode Share. As in previous years, automobile trips continue to dominate, with 67.2% of all trips being made by auto driver sand another 16.8% as passengers. Transit mode share has seen a modest increase to 3.8% of all trips (up from 2.8% in 2018), while cycling and walking account for 2.7% and 7.3%, respectively.

The Other Central Okanagan sub-area has the highest driving mode share (71.4% auto drivers), Vernon had the highest walk share (9.1%), and Kelowna has the highest transit (4.8%) and cycling shares (3.6%).

Exhibit – Figure 11. Mode Share, 2024



Looking at shifts in the seventeen years since the 2007 baseline study reveals the following trends:

- an 8.5%-pt decrease in auto driver mode share,
- a 157.7%-pt increase in transit mode share,
- a 27.5%-pt increase in walking trips,
- a 19.8%-pt decrease in school bus trips, and
- a 38.7%-pt increase in bicycle trips since 2007.

However, when evaluating trends in mode share since 2007, it is important to note that the survey was conducted at different times of year – mid-spring in the 2007 survey and mid-fall in 2024. Cycling and walking are also modes that are more susceptible to inclement weather; however, the increase in bicycle ownership is a positive indication that supports these findings.

Sustainable Mode Share. When aggregated, sustainable modes (transit, school bus, walking, and cycling) comprise a 15.7% mode share, which is a 4.6% increase from the 2007 baseline.

Active Mode Share. Looking at just active modes (walking and cycling) reveals that, combined, the active modes comprise a 10.0% mode share (up 2.68%-pts from 2007).

Transit Trips. Residents of the study area appear to make roughly 23,190 transit trips each day, up from 19,100 in 2018. In 2024, 94% of transit trips involved a mode of active transportation (93.8% walking and 0.6% cycling) to or from one of the transit stops, while 6% involve a vehicle (2.4% Park and Ride, 3.2% Kiss and Ride or taxi).

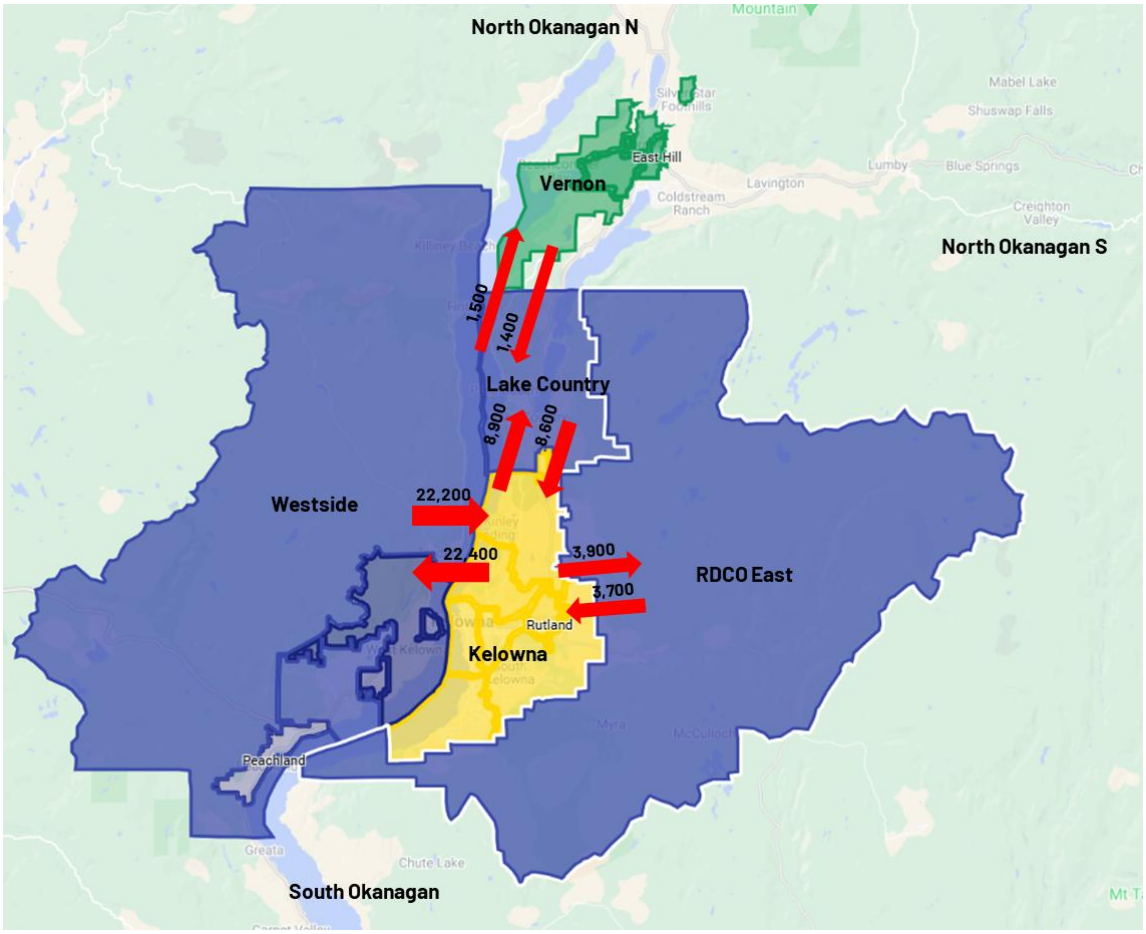
Vehicle Occupancy. Three-quarters of all vehicle trips (74%) are in single-occupant vehicles, with an average of 1.35 occupants per vehicle, consistent with 2018.

Vehicle Kilometers Travelled. The 2024 survey calculated an estimate of the actual vehicle kilometers travelled (VKT) for auto driver trips based on the most likely route taken at the time of day and day of the week as suggested by Google Maps. The average length of auto driver trips is estimated to be 10.6 km.

Each household vehicle in the study area averages 19.4 km per day, with the lowest distance in Kelowna at 16.5 km and the highest in other parts of the Central Okanagan at 24.2 km. Residents of the study area drive about 4.32 million km each weekday for personal trips (excluding commercial trips or travel on weekends). Over an entire year, this amounts to approximately 1.13 billion km of road travel by personal vehicles on weekdays.

Inter-Regional Traffic Flows. The map below illustrates the 24-hour inter-regional flows within and outside the study area. As shown, there is considerable flow of traffic throughout the region, with the bulk between the Westside communities and Kelowna. During the morning peak, traffic flow is heavier heading into Kelowna from the Westside than in the reverse direction - a pattern that is repeated for other surrounding communities including Lake Country and RDCO East, likely due to Kelowna being a net attractor of workers. Specifically, Kelowna accounts for 89,200 jobs in the study area relative to the 79,300 workers who actually live in Kelowna.

Exhibit – Figure 12. 24-Hour Inter-Regional Flows (Expanded), 2024



Internalization of Trips. This report also analyzed the proportion of travel that is internal to each district or municipality by residents of that community. This perspective provides insight into accessibility of local shops, services, and places of employment within each district. Across the study area, 28% of residents' trips are made within the same district as they reside in. Residents of Vernon's City Core make the majority of their trips (56%) within this district, followed by Lake Country at 44%, Central Kelowna at 38% and City Centre/Pandosy at 38%.

Conclusions

The Central Okanagan is the fastest growing region in Canada, and shifting demographics will continue to have an impact on transportation patterns and behaviours in the region. Since 2018, the region has seen a dramatic increase in population and number of household units coupled with declining household sizes. The population also appears to be shifting towards a younger demographic, with higher population growth rates among younger age cohorts.

Vehicle ownership remains high, and generally on par with population growth (19.6% growth in number of vehicles and 20.6% population growth since 2018). That being said, there appears to be a shift towards more sustainable modes of transportation. For example, there has been a sizable increase in the number of both hybrid and electric vehicles since 2018 – now comprising 7.1% of all vehicles in the

region up from 2% in 2018. Additionally, the number of bicycles in the region has seen significant growth over the last six years, far outpacing that of the population (27.2% vs. 20.6% population growth). In fact, the average number of bicycles per household has now surpassed the number of average vehicles per household in all three sub-areas - Kelowna, Other Central Okanagan and Vernon. The growth in number of bicycles is due in part to a substantial increase in e-bikes since 2018.

Residents of the study area appear to be taking fewer trips than in previous years. The overall volume of daily trips has seen an 11.2% decrease since 2018 despite the marked growth in population during this same period. Similarly, while average daily trips per person have been on the decline since the 2007 baseline study, that trend appears to have accelerated in recent years. This is likely due to changes in lifestyle and working arrangements resulting from the COVID-19 pandemic. For example, in 2018, 12% of the workforce was working from home – this proportion has now increased to 22%. While residents are not travelling as much, they also are not travelling as far. The estimated cumulative distance of all daily trips has declined by 14% since 2018 with the decline primarily observed among driving modes, while transit distances have seen an increase of 6%.

In keeping with a shift towards more sustainable modes of transportation, this trend is also observed when it comes to mode share. Driving remains the dominant mode of transportation but has seen a modest decrease in mode share since 2007 (from 88% including auto drivers and passenger modes to 84% in 2024). Meanwhile, the use of public transit and cycling have both increased to the highest mode share seen since 2007 (3.8% and 2.7%, respectively). While some variability in survey results is to be expected due to survey timing, random sampling error and/or methodological differences, when taken together these results suggest a positive trend in travel patterns over the last 17 years.

The information presented in this highlights section is explored in greater depth in the body of this report, including more of the survey results broken out for the Vernon, Kelowna, and Other Central Okanagan sub-areas.

1. Project Overview

1.1 Project Background

The 2024 Okanagan Travel Survey (OTS) is a joint project of the City of Kelowna, City of Vernon, Regional District of Central Okanagan, West Kelowna, Lake Country, Peachland, Westbank First Nation, and the BC Ministry of Transportation and Transit in collaboration with Ipsos, a global market research company.

The Okanagan Travel Survey is conducted approximately every five years in the Central Okanagan and City of Vernon area. Prior OTS surveys were conducted in 2007, 2013 and 2018. The survey collects data on the daily travel patterns of residents in the region using a household travel survey approach.

The three main objectives of the survey were to:

- Collect high-quality, reliable and valid household travel data for regional transportation and infrastructure planning purposes including updating the regional transportation demand model.
- Provide a statistically reliable dataset to monitor trends in travel behaviour and patterns to inform policies and plans; and,
- Develop a comprehensive travel database for analysis and policy research in the region.

The data collected from the 2024 OTS will also help inform policy development and transformation planning throughout the Central Okanagan and City of Vernon by providing statistics useful for insights into post-pandemic travel behaviour.

The 2024 OTS was carried out from early October through the first week of November 2024. The approach employed a survey methodology to gather comprehensive data on household characteristics, demographic information for all household members and 24-hour recall of detailed travel information for household members aged 5 and above on the most recent previous weekday. A random sample of households was selected based on their home address and invited to participate through an official invitation letter. To ensure adequate representation from households with younger residents, a subset of households was also recruited by telephone using cellphone sample by the Ipsos CATI team. Participants had the option to complete the survey either online or via telephone through the Ipsos help desk for those requiring additional support.

The 2024 survey collected data from 5,158 households or 12,064 individuals and represented 41,302 trips following a rigorous data validation process and the exclusion of a small number of surveys with data inconsistencies. To ensure the sample is representative of the entire population, the survey data were weighted and expanded. The resulting dataset represents approximately 286,000 residents from 127,000 households within the study area, equivalent to a sampling rate of 4.1% of households or 4.2% of the population residing in private dwellings. The trip data obtained from the survey offers a comprehensive 24-hour snapshot of the travel patterns exhibited by residents in the study area during a typical weekday in the fall season.

The household-level survey results are associated with a margin of sampling error of ±1.3% at a 95% confidence level prior to data weighting. When considering the three sub-area geographies analyzed, the margin of sampling error is ±1.8% for the City of Kelowna, ±2.4% for the rest of the Central Okanagan, and ±3.6% for the City of Vernon.

1.2 Report Organization

This report is one of three that document the survey methodology, dataset, and results for 2024 Okanagan Travel Survey. There are three reports in total and are listed below:

- Report 1: 2024 Okanagan Travel Survey – Survey Design and Conduct
- Report 2: 2024 Okanagan Travel Survey – Survey Database
- Report 3: 2024 Okanagan Travel Survey – Analysis of Survey Results and Trends

The purpose of Report 3 – Analysis of Survey Results and Trends is to provide a detailed accounting of the survey results by key geographical areas. The remainder of this report is organized into the following sections:

- Section 2: Survey Geography
- Section 3: Study Design
- Section 4: Household and Population Growth
- Section 5: Travel Patterns and Trends
- Section 6: Household, Vehicle and Demographic Characteristics
- Appendix: Additional Detailed Tables

2. Survey Geography

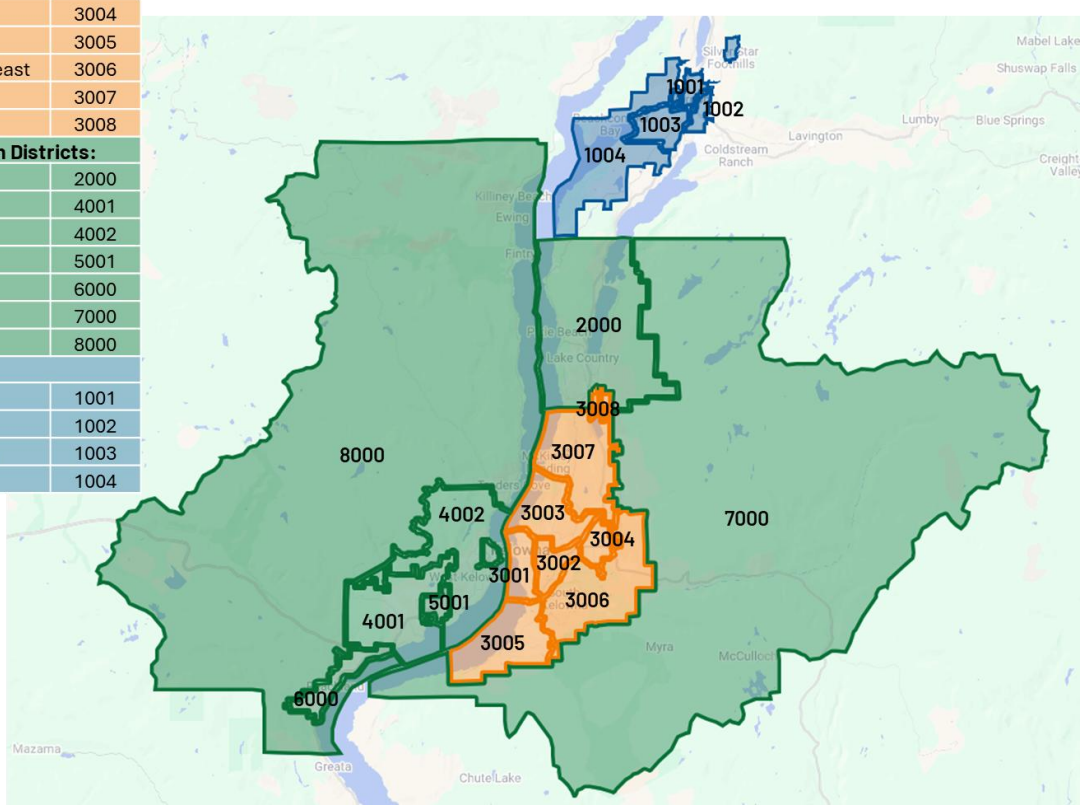
2.1 Survey Scope

The 2024 OTS captured the daily travel patterns and demographic characteristics of residents of households within the study area. The six communities in Central Okanagan (City of Kelowna, Regional District of Central Okanagan, West Kelowna, Lake Country, Peachland and Westbank First Nation), the City of Vernon, and the Okanagan Indian Band Lands within these bounds (Duck Lake Indian Reserve No. 7, bordering Lake Country and Kelowna, and Priest's Valley Indian Reserve No. 6 bordering Vernon) are included in the study area (shown in **Figure 13**).

For reporting and analysis, survey results are summarized for three sub-regions: Vernon, Kelowna, and Other Central Okanagan (consisting of all other communities in the Central Okanagan, excluding Kelowna).

Exhibit – Figure 13. Study Area

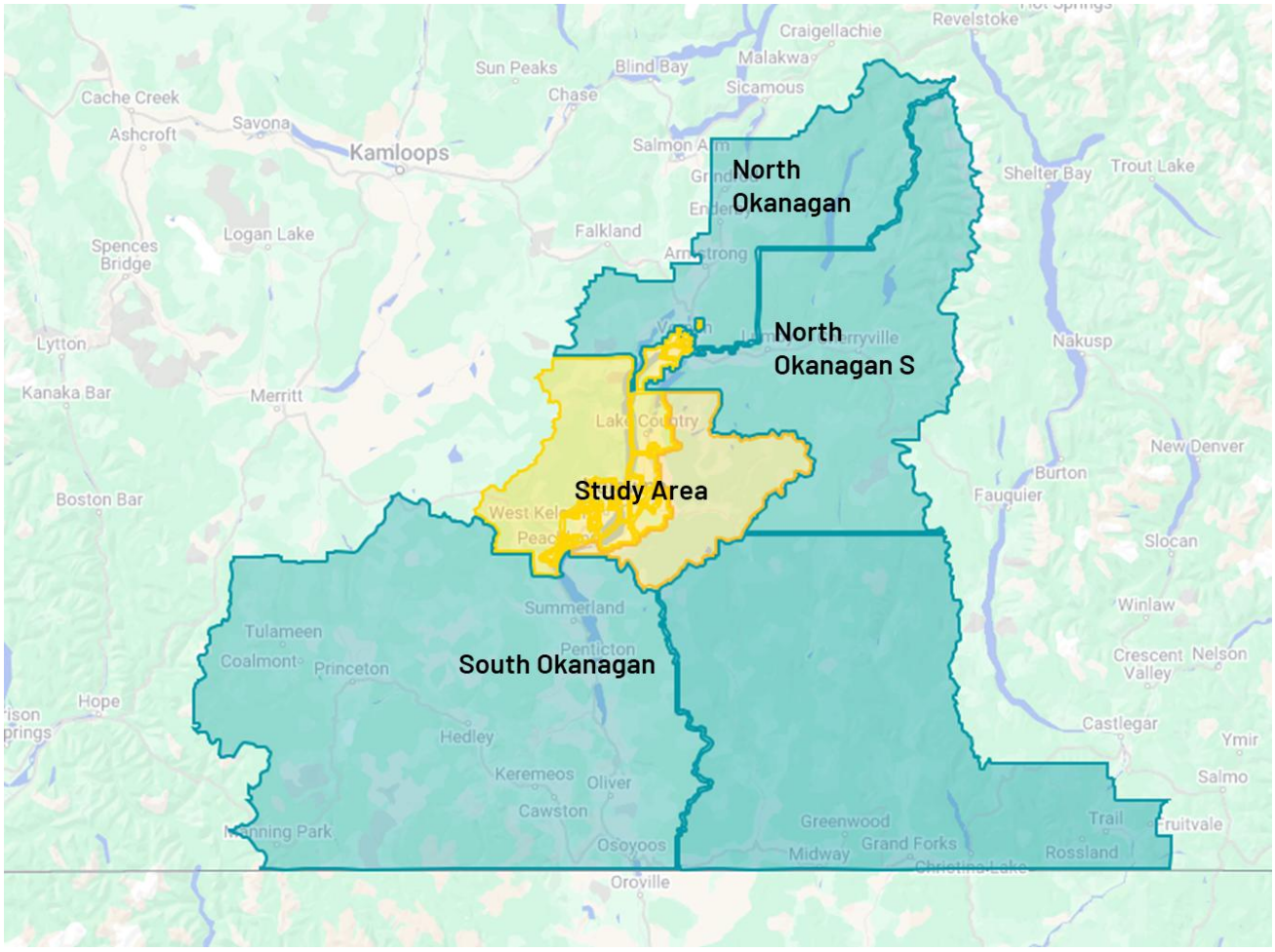
Kelowna Districts:	
City Centre/ Pandosy	3001
Central Kelowna	3002
Glenmore	3003
Rutland	3004
Mission	3005
Black Mountain/ Southeast	3006
Kelowna North	3007
Duck Lake 7	3008
Other Central Okanagan Districts:	
Lake Country	2000
Glenrosa/ Westbank	4001
Rose Valley/ Lakeview	4002
Westbank First Nation	5001
Peachland	6000
RDCO West	7000
RDCO East	8000
Vernon Districts:	
City Core	1001
East Hill	1002
Landing/ Priest's Valley	1003
Outlying Areas	1004



Similar to the 2018 survey, a wider geographical 'Travel Area' (shown below in **Figure 14**) was developed for the purpose of defining trips external to the study area but still relatively local within nearby communities. These trips were collected in the final data set and only trips beyond the Travel Area boundary were flagged as true external trips.

The Travel Area includes a wider boundary around the study area to encompass parts of the North and South regions of the Okanagan. The Okanagan South travel area includes Summerland, Penticton and other nearby areas in the Okanagan-Similkameen Regional District. To the North, the Travel Area includes two areas outside the study area: North Okanagan South (including Coldstream, Lumby and other areas more likely to approach Vernon from the South or East) and North Okanagan North (including Armstrong, Enderby, and other nearby areas more likely to approach Vernon from the North). The map below shows the external areas relative to the study area.

Exhibit – Figure 14. Travel Area



2.2 Survey Area Geographies

A key objective of the study was to ensure that data was collected from a representative sample of households in the study area.

To ensure consistency with the 2018 study, the study area was segmented into the same 19 sub-municipal areas or 'districts', though some boundaries may have shifted slightly. Dividing the survey area into smaller geographies facilitated effective survey sampling and targeting to ensure a balanced and representative distribution of survey completions across the region.

The 19 districts were used for sampling and data weighting and expansion, as well as for selected analyses of the pattern of results within municipalities. For data weighting purposes, Statistics Canada Dissemination Area (DA) geographies were used to aggregate 2021 Census data by each of the 19 districts. Further details of the 19 districts and sample frame can be found in Section 3.3: Sampling Plan in Report 1: Survey Design and Conduct.

For the purpose of reporting and analysis, the survey area is organized into four levels of geography, as outlined in **Table 2** below. 'Municipal sectors' aggregate First Nations communities with the municipal boundaries they are situated within or adjacent to. This approach ensures that the unique travel patterns and characteristics of these communities are captured and integrated into the broader municipal context.

Most analysis is based on three sub-areas based on municipal sectors: **Vernon** (corresponding to the 'Vernon+' municipal sector), **Kelowna** (corresponding to the 'Kelowna+' sector), and **Other Central Okanagan** (an aggregation of all remaining sectors within the Central Okanagan region).

Exhibit – Table 2. Travel Area Geographies

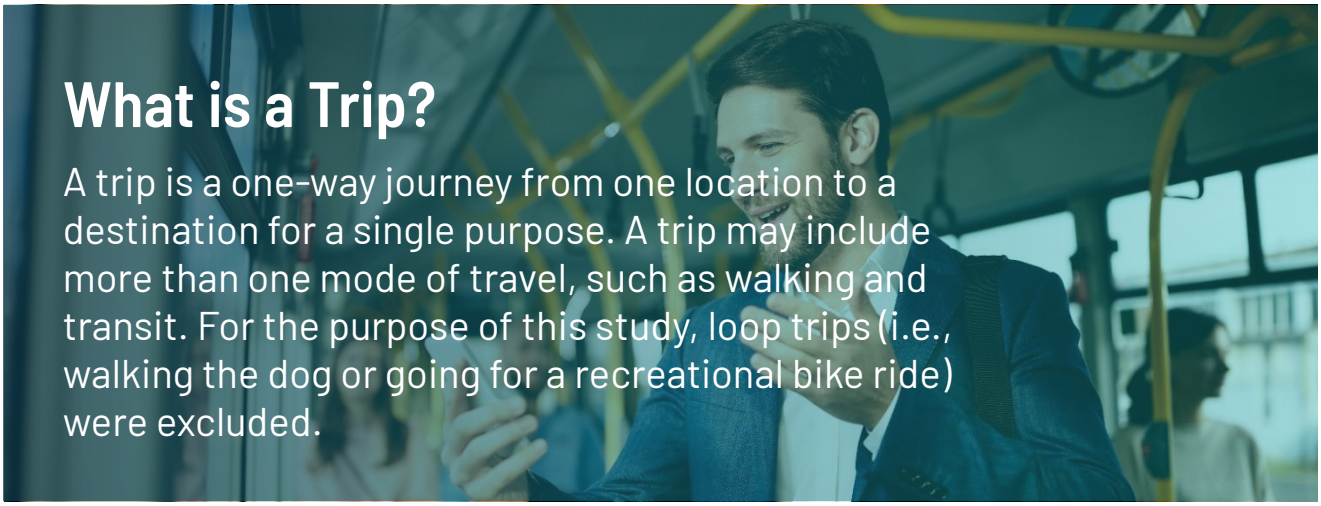
Travel Area	Census Division	Municipal Sector	Census Subdivision	District	
Study Area	Vernon (part of RD of North Okanagan)	Vernon+	City of Vernon	1001	City Core
				1002	East Hill
				1004	Outlying Areas / Predator Ridge / Foothills
				1003	Landing / Priest's Valley
			Priest's Valley 6		
	Central Okanagan	Lake Country	Lake Country	2000	Lake Country
		Kelowna+	City of Kelowna	3001	City Centre/Pandosy
				3002	Central Kelowna
				3003	Glenmore
				3004	Rutland
				3005	Mission
				3006	Black Mountain /Southeast
				3007	Kelowna North
			Duck Lake 7	3008	Duck Lake 7
		West Kelowna+	City of West Kelowna	4001	Glenrosa/Westbank
				4002	Rose Valley/Lakeview
			Tsinstikeptum 9	5001	Westbank First Nations (WFN)
			Tsinstikeptum 10		
		Peachland	Peachland	6000	Peachland
		RDCO West	Central Okanagan	7000	RDCO West
		RDCO East	Central Okanagan	8000	RDCO East

3. Study Design

3.1 Overview

The 2024 OTS is a comprehensive study designed to capture the travel patterns and characteristics of residents within the survey area over the course of a typical 24-hour fall weekday.

To collect trip information, the survey utilizes a 24-hour recall method, where respondents are asked to report on their travel activities from 4:00 a.m. on the previous weekday to 4:00 a.m. on the day of the survey. This approach collects detailed information on the trips made by household members aged 5 and above and ensures that the data collected is representative of typical weekday travel patterns and minimizes the potential for recall bias.



In addition to capturing travel characteristics, the 2024 OTS also collects socioeconomic information about the respondents and their households. These data points serve multiple purposes, including the expansion and validation of survey responses, the development of comprehensive travel behavior profiles, and the examination of the relationships between travel patterns and socio-demographic factors.

Exhibit – Table 3. Household Level, Person Level and Trip Level Information

Household Level	Person Level For each person in the household	Trip Level For each trip made by each household member 5+ years of age
Home location	Gender	Origin location
Dwelling type	Age	Destination location
Household size (# people)	Driver's license	Trip departure time
Number of vehicles by vehicle type and fuel type	Mobility devices used, if any	Arrival time at destination

Number of bicycles (adult pedal bikes, adult e-bikes, children's)	Student status (f/t, p/t)	Purpose (destination activity)
Household Income	School level	Mode(s) of travel (up to 3)
	School location	Number of vehicle occupants (if driver or passenger)
	Employment status (f/t, p/t)	Vehicle availability for non-auto trips leaving home
	Workplace location	
	Type of job	
	Other occupational status (retired, unemployed, etc.)	
	Whether took trips on travel day (if age 5+)	

3.2 Data Collection

Full survey administration of the 2024 OTS began on October 7, 2024 and was completed by November 8, 2024. While the majority of target completes by district had been achieved by November 1, the decision was made to extend the field window an additional week to allow for any remaining completes among those who may have recently received a reminder.

Telephone recruitment took place from October 15 to November 1, 2024. More details about the telephone recruitment can be found in Section 3.6.2: Telephone Recruitment in Report 1: Survey Design and Conduct.

The travel dates included October 8 to November 7, 2024. It is important to note that the time frame of the 2024 OTS was condensed compared with previous years and ended earlier in the season to avoid disrupted travel patterns resulting from snowfall. The 2018 survey took place between October 24 to December 21, 2018, while the 2013 survey ran from September 23 to November 30, 2013. The initial 2008 study was conducted in a different season (April 13 to May 18, 2007).

3.3 Survey Response

The 2024 OTS achieved a total of 5,168 completed surveys. Prior to survey data review and validation, the overall response rate across both mail-out and telephone-recruited sample was 6.5%.

During the data cleaning and validation processes, a small proportion of the 5,168 surveys were found to have critical data issues or missing data. In total, 10 survey completions were considered unusable for data analysis and removed from the final data set, representing a 0.19% survey rejection rate. After removing these surveys, the final survey sample was 5,158 completed households.

Invitations sent to the mail-out portion of the sample yielded a 6.8% response rate after rejection of invalid surveys, while telephone recruitment yielded a 1.1% response rate after rejections.

Detailed breakdowns of the final survey results by district can be found in **Table 10** below in the section on sampling errors.

3.4 Data Processing

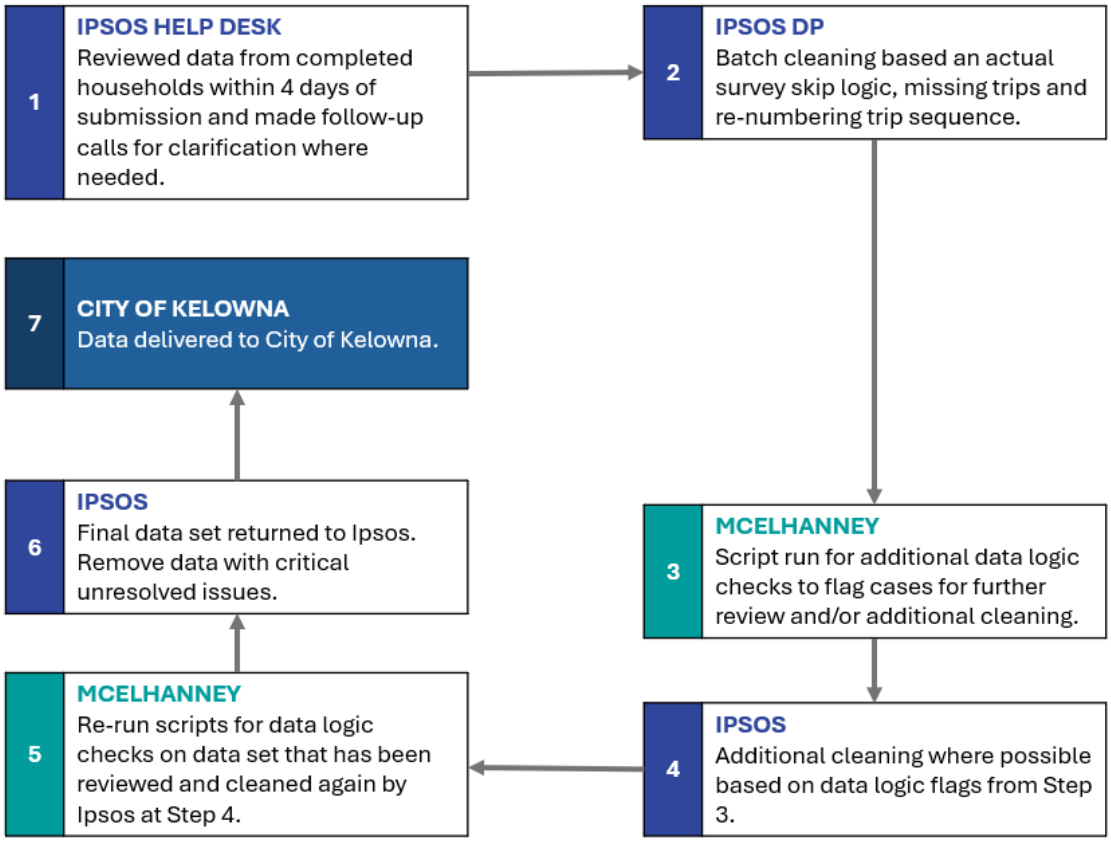
This section details the outcomes of the Data Processing phase of the 2024 OTS.

The Data Processing section of this report details information about data cleaning and geocoding. To provide a sense of the scope of the Data Processing, this section of the report also includes counts of returned and retained surveys.

3.5 Overview of the Data Processing and Validation Process

All data received was examined for inconsistencies or inaccuracies and any such issues were reviewed and, if necessary, corrected. Prior to cleaning, 5,168 surveys had been received. **Figure 15** depicts the general data processing and verification process following the data collection phase of the study.

Exhibit – Figure 15. Data Processing and Verification Process



As completed trip surveys were received, responses were checked daily to ensure information was accurate and complete. Ipsos' initial data cleaning involved data checks and changes that had to be

handled on a household-by-household basis (e.g., time adjustments – am vs. pm, verifying trip purpose against location type, verifying trip modes against trip distance). Logic checks were built into the program allowing for easy prioritization of the most critical cases ahead of minor issues.

Step 1: Ipsos Help Desk

Where required, help desk staff flagged cases for callbacks to clarify answers or fill in missing data. Follow-up calls and emails were made within 4 days of the survey completion to ensure the information was still relatively fresh in the respondent's memory. A maximum of three calling attempts were made. If contact was made with a respondent, the correct or missing information was logged and the survey data was corrected before being incorporated into the batch data cleaning. If a respondent could not be reached, the survey data was submitted for batch cleaning as is.

Step 2: Ipsos Data Processing (DP)

Data for completed households was processed by Ipsos' internal data processing team on a bi-weekly basis for batch cleaning (e.g., cleaning out extraneous responses resulting from a respondent changing their answer, renumbering trips if any had been deleted) before being shared with McElhanney for a deeper data logic review. Personally identifiable information such as names or nicknames and phone numbers or email addresses were also removed at this stage.

Step 3: McElhanney Data Logic Review

The data logic review stage was a key step in the data cleaning process whereby household, person and trip records were reviewed to confirm their validity and reasonableness. The logic review stage helped identify recurrent data issues and the underlying causes. It was also used to identify illogical cases, such as fast speeds, which subsequently aided in developing automated data cleaning scripts.

Step 4: Ipsos Review and Cleaning of Flagged Cases

After McElhanney processed the data and flagged illogical or missing cases, the data was returned to Ipsos for a second round of cleaning. Ipsos reviewed the flags and re-imported or cleaned the data where possible. For example, if a response had been dropped during the data export, or if manual corrections from the initial follow-up with respondents had not been entered correctly.

Step 5: McElhanney Second Data Logic Review

The data was then returned to McElhanney to re-run the data cleaning scripts and append flags to the outstanding cases remaining after the previous rounds of cleaning.

Step 6: Ipsos Final Review

The data was returned to Ipsos with the final set of data logic flags. Ipsos conducted a final review of the remaining flagged cases and removed households with critical illogical or missing information from the final dataset prior to data weighting and expansion.

3.6 Data Weighting and Expansion

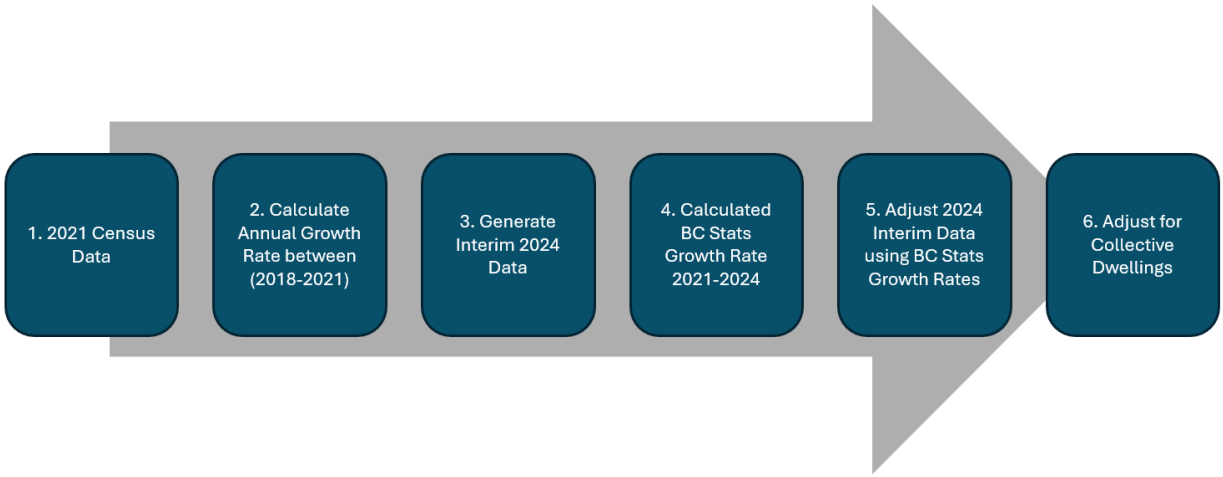
Data weighting and expansion involves adjusting survey results to better represent the actual survey population. Weighting corrects for potential survey sample biases by ensuring that demographic groups are correctly represented according to their proportions in the population. Expansion involves scaling the sample data to match the total population size, allowing survey results to be used as estimates of actual behaviours or characteristics. Data weighting and expansion ensure that the final data set and analysis are both statistically valid and reflective of the actual population in the region.

The 2024 OTS weighting controls and expansion targets were developed using a hybrid approach that utilized 2016 and 2021 Census data as well as demographics projections from BC Stats[1]. Given that the survey is being administered in 2024, BC Stats provides a reliable source to extrapolate control total growth rates for various demographics attributes between 2021 and 2024. The demographics attributes selected for data weighting and expansion were selected based on their significant influence on trip-making behaviour and for completeness of the information in the survey data. The weighting controls included, for each weighting district:

- **Total households** (private dwellings occupied by usual residents),
- Household counts by **dwelling type** (house, apartment, other ground oriented),
- Household counts by **household size** (1-person, 2-person, 3-person, 4-person, 5+ person), and
- Population counts by **age and gender** (11 age ranges, 3 gender categories).

Figure 16 below provides the high-level framework used to develop 2024 weighting and expansion targets. These steps are briefly described below

Exhibit – Figure 16. Process for Developing Weighting and Expansion Targets



[1] Population Projections - Province of British Columbia

For each demographics attribute (e.g. household size 1) in each weighting district:

- **Step 1 - Obtain 2021 Census Data:** Note that Census data does not account for the Census Undercount. This approach is consistent with previous OTS surveys which did not consider the Census Undercount adjustments that correct for under-representation of demographics in Census. The Undercount estimate for the 2021 Census was about 3%.
- **Step 2 – Calculate Annual Growth Rate (2016 – 2021):** Annual growth rates were calculated from 2016 to 2021. Note that efforts were made to ensure geographies used from the 2016 and 2021 Census were consistent. In some small weighting districts, age and/or gender categories may have been collapsed further due to small sample sizes or cells with no sample.
- **Step 3 – Generate Interim 2024 Data:** 2024 data was generated by extrapolating from the 2021 Census using the growth rates calculated in Step 2.
- **Step 4 – Calculate BC Stats Growth Rates (2021 – 2024):** McElhanney then summarized growth rates between 2021 and 2024 from BC Stats. Note that BC Stats only generates projections at the municipal level. For this survey, the six relevant municipalities are Kelowna, Lake Country, Peachland, West Kelowna, Central Okanagan (Unincorporated Areas) and Vernon. BC Stats does disaggregated projections for population by age and gender. Household projections are for total households (i.e., not disaggregated by structure type or size).
- **Step 5 – Adjust 2024 Interim Data:** McElhanney then aggregated 2024 Interim Data generated in Step 3 and 2021 Census data to match the same resolution of the BC Stats data (i.e. by the six municipalities). With that, McElhanney then calculated the implied 2021-2024 growth rates from Census. This information along with the growth rates generated in Step 4 (BC Stats) was used to calculate adjustments factors that adjusted the data generated in Step 3 to match the growth rates from BC Stats.
- **Step 6 – Adjustments for Collective Dwellings:** 'Collective dwelling' refers to a dwelling of a commercial, institutional, or communal nature in which a person or group of persons reside or could reside. Examples include lodging or rooming houses, hotels, motels, tourist establishments, nursing homes, residences for senior citizens, hospitals, staff residences, military bases, work camps, correctional facilities and group homes. Estimates of populations living in collective dwellings by age and gender were obtained from the 2021 Census based on Census Metropolitan Area geographies (CMA)[2]. The population counts by age and gender generated in Step 5 were rescaled to represent populations living in private residential dwellings to match the survey sample frame which does not account for collective dwellings.

[2] Dwelling type, age and gender: Canada, provinces and territories, census metropolitan areas and census agglomerations with parts

Limits were set on extreme weights, although they were allowed to range from 0.2 to 4.8 at the household level and 0.2 to 8.0 at the individual level. The weights received final calibrations to ensure that the total number of households in each district matched the control totals. 0.1% of households and 0.2% of individuals had a weight factor above 4.0%.

It may be noted that travel on Wednesday and Thursdays is somewhat over-represented, while travel on Mondays, Tuesdays, and Fridays is somewhat under-represented.

3.7 Validation of the Expanded Data

The expanded survey responses for household, person, and trip characteristics were compared to Census and other benchmark data (such as transit boardings) in order to validate the data expansion, with positive overall results. The following observations about the representativeness of the weighted data can be made:

As expected, the weighted data aligned well with the dwelling type aggregations, household size, age and gender distributions from the Census (projected to year 2024), as might be expected as these were the weighting controls.

Weighted counts of total workers living in the study area and counts of workers who have a fixed place of work outside the home also aligned reasonably well with 2021 Census counts and projected 2024 Census estimates (based on population growth estimates from BC Stats) as shown in the table below.

Exhibit – Table 4. Total Workers in the Study Area – 2024 Survey vs. Actual

Workers (2024 Expanded Survey Results)	Workers (2021 Census)	Workers (2024 Census Projected)
137,197	129,145	143,085

Note that the survey distribution of the weighted data by occupational group (10 National Occupational Classification major groups) varied from the Census. This likely has to do with the discrepancies with the way survey respondents classify their occupations versus official categorization used in Census. For example, management occupations, which was one of the categories used in the survey, can be included in different industries.

The 2024 survey under-represents enrollments at the three main post-secondary institutions as summarized below. Total survey enrollment at UBC Okanagan is approximately 9,400 compared to about 12,000 as per UBC Okanagan official enrollment figures[3]. Total survey enrollment at Okanagan College (Vernon + Kelowna campuses) is approximately 4,000 compared to about 8,000. This is expected since the survey does not capture students who reside on Campus, especially in the case of

[3] Facts and Figures - UBC's Okanagan Campus

UBC Okanagan. Further, some students reside in areas outside the survey area, specially in the case of Okanagan College (Vernon Campus).

Exhibit – Table 5. Post-Secondary Enrolment – 2024 Survey vs. Actual

PSE Institution	Enrolment	
	2024 Expanded Survey Results	Actual
UBC Okanagan	9,366	11,913
Okanagan College - Vernon and Kelowna Campus	3,695	7,988

Generally, household income distributions aligned well with 2021 Census data for 2020 pre-tax household incomes as shown in the table below. The survey slightly underestimates households in the lower income brackets (<$80,000) and overestimates households in the higher income brackets (>$80,000). This comparison should be interpreted with caution, however, as incomes for working people will have increased from 2021 to 2024, especially given high inflation during that period. Note that 15% of survey respondents refused to provide a response to this question.

Exhibit – Table 6. Household Income – 2024 Survey vs. 2021 Census

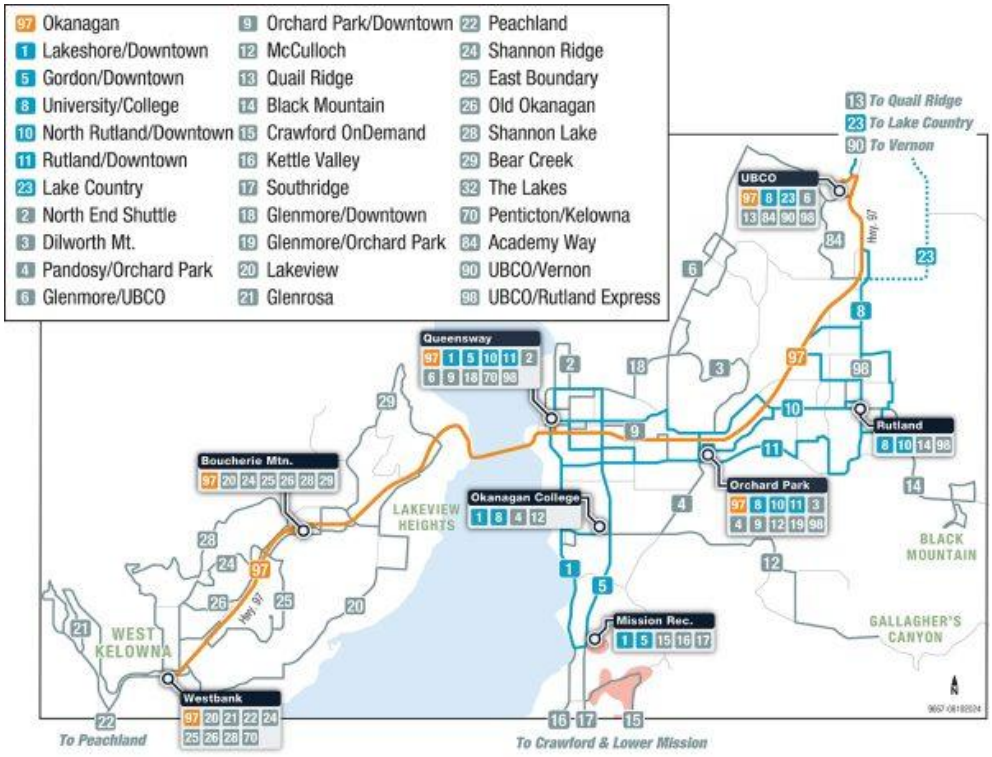
Income Bracket	2024 Expanded Survey Results	2021 Census
$0 to less than $30,000	10%	11%
$30,000 to less than $50,000	14%	15%
$50,000 to less than $80,000	20%	22%
$80,000 to less than $125,000	26%	24%
$125,000 or more	30%	28%

Census data on workers' journeys to work were also compared to the 2024 survey results. While the Census data is not strictly comparable to the survey data, it does provide a useful and highly reliable benchmark (25% sample of households) to confirm that the survey's general mode trends are representative of actual commuting mode choice distribution. Comparing the mode shares (percentage distributions), the Census data and weighted survey results align well. The survey results show a higher share of bicycle use compared to Census. This can be partly attributed to the increase in bike ownership over the last five years.

Exhibit – Table 7. Journey to Work – 2024 Survey vs. 2021 Census

Mode	2024 Expanded Survey Results	2021 Census (Journey to Work)
Auto driver	81%	82%
Auto passenger	4%	6%
Transit	4%	3%
Bicycle	5%	2%
Walked	5%	5%
Other	0%	2%

Transit ridership data for Fall 2024 was obtained for BC Transit routes in the study area as shown in the map below.



As shown in the table below, implied trip boardings from the survey match well with BC Transit ridership data.

Exhibit – Table 8. Trip Boardings – 2024 Survey vs. BC Transit Ridership

2024 Survey Expanded Transit Trips	2024 Survey Boardings[4]	2024 BC Transit Average Weekday Boardings
23,200	~28,000	~27,500

Average fall weekday traffic volumes (excluding trucks) on the William R Bennet Bridge were obtained from BC Ministry of Transportation and Transit's (MoTT) permanent loop counter (see below) and compared to survey estimates of vehicle traffic. Overall, the 2024 survey under-estimates vehicle traffic volumes. This is somewhat expected given that the survey only represents travel of residents within the study area whereas the traffic counter captures a much broader travel market, including through trips to/from outside the boundaries of the study area.

Exhibit – Table 9. Traffic Volume – 2024 Survey vs. MoTT Loop Counter

2024 Expanded Survey Results (Auto Driver Trips)	Fall 2023 Average Weekday Count (excluding Trucks)
38,000	52,000

[4] The 2024 survey did not explicitly ask the number of routes taken to calculate boardings. Instead estimates of boardings per trips provided by BC Transit for the 2018 survey was used. The estimated boardings per trip is approximately 1.2.

Overall, the weighted survey data aligns well with the reference data examined, which should provide confidence in the survey results and their reliability for use on transportation planning projects and policy initiatives. Notwithstanding the efforts to ensure that the survey data are representative of the population as a whole, it should be noted that it may not be possible to correct for all sources of non-response bias.

3.8 Estimates of Sampling Error

Sample error refers to the variation of survey results due to the randomly selected sample of survey participants. For any survey there is always a sample error – meaning that the final results may not exactly mirror the real world. For any given sample size, a margin of error indicates a range within which the real answer is likely to be. For example, on a result of 34%, there might be an error range of ± 5% points. That is, the real true answer could be between 29% and 39%. The sample error depends on the size of the sample and the level of confidence expected. Survey results typically refer to "95% confidence" which means that if we did the exact same study 20 times, then in 19 times the same measure should be inside the error range. Larger sample sizes give smaller error ranges.

For the 2024 OTS, the margin of error for the household-level survey results across the entire survey area is estimated at 1.3% at a 95% confidence level. For person and trip-level survey results, the margin of error is estimated to be 0.9%. The sampling error increases as it is disaggregated into smaller population areas – from the survey area to municipalities and districts – and smaller demographic groups. While the sample frame is designed to mitigate sampling error, varying response rates by region and populations can impact the margin of error. Results should be interpreted with caution among areas and populations with smaller samples and higher sampling errors.

Exhibit – Table 10. Survey Completions and Sampling Errors – for household level statistics

Geography of Residence	District	2024 Occupied Dwelling Units	Household Surveys Completed	Sampling Rate	Theoretical Margin of Error
Total Study Area		**127,178**	**5,158**	**4.1%**	**±1.3%**
Total Central Okanagan		**105,566**	**4,429**	**4.2%**	**±1.4%**
Kelowna Subtotal		**70,965**	**2,840**	**4.0%**	**±1.8%**
City Centre/ Pandosy	3001	17,620	682	3.9%	±3.7%
Central Kelowna	3002	10,727	465	4.3%	±4.4%
Glenmore	3003	10,929	454	4.2%	±4.5%
Rutland	3004	12,151	442	3.6%	±4.6%
Mission	3005	8,022	352	4.4%	±5.1%
Black Mountain/ Southeast	3006	6,450	200	3.1%	±6.8%
Kelowna North	3007	3,959	182	4.6%	±7.1%
Duck Lake 7*	3008	1,107	63	5.7%	±12.0%
Other Central Okanagan Subtotal		**34,601**	**1,589**	**4.6%**	**±2.4%**
Lake Country	2000	6,907	304	4.4%	±5.5%
West Kelowna Subtotal		*15,211*	*683*	*4.5%*	*±3.7%*
Glenrosa/ Westbank	4001	9,371	414	4.4%	±4.7%
Rose Valley/ Lakeview	4002	5,840	269	4.6%	±5.8%
Westbank First Nation	5001	6,230	234	3.8%	±6.3%
Peachland	6000	2,878	162	5.6%	±7.5%
RDCO West*	7000	1,459	87	6.1%	±10.2%

RDCO East*	8000	1,916	119	6.2%	±8.7%
Total Vernon		**21,612**	**729**	**3.4%**	**±3.6%**
City Core	1001	6,660	202	3.0%	±6.8%
East Hill	1002	4,843	195	4.0%	±6.9%
Landing/ Priest's Valley	1003	6,577	214	3.3%	±6.6%
Outlying Areas / Predator Ridge / Foothills	1004	3,532	118	3.3%	±8.9%

Note: The theoretical margin of error is based on the estimated number of occupied dwellings (households) in 2024 using the hybrid approach described in Section 5.5 Data Weighting and Expansion in Report 1. This number of households may differ slightly from the initial estimate used for the purpose of sampling.

*Districts with smaller sample sizes and/or higher sampling errors. Results should be interpreted with caution.

Exhibit – Table 11. Survey Samples, Sampling Errors – For Person Level Statistics & Trips Made by those persons

Geography of Residence	District	Sampling Error for Trips Made by Residents of District				
		2024 Estimated Population (N)	Persons Surveyed (n)	Sampling Rate	Theoretical Margin of Error	Trip Records for Persons Living in District
Study Area		**286,227**	**12,064**	**4.2%**	**±0.9%**	**41,302**
Central Okanagan Total		**240,015**	**10,365**	**4.3%**	**±0.9%**	**35,589**
Kelowna Subtotal		**158,624**	**6,541**	**4.1%**	**±1.2%**	**22,790**
City Centre / Pandosy	3001	32,901	1,290	3.9%	±2.7%	4,505
Central Kelowna	3002	20,605	971	4.7%	±3.1%	3,584
Glenmore	3003	25,914	1,151	4.4%	±2.8%	4,068
Rutland	3004	29,847	1,105	3.7%	±2.9%	3,692
Mission	3005	22,143	957	4.3%	±3.1%	3,454
Black Mountain / Southeast	3006	16,797	511	3.0%	±4.3%	1,731
Kelowna North *	3007	8,571	430	5.0%	±4.6%	1,350
Duck Lake 7 *	3008	2,118	126	5.9%	±8.5%	406
Other Central Okanagan Subtotal		**81,391**	**3,824**	**4.7%**	**±1.5%**	**12,799**
Lake Country	2000	17,182	756	4.4%	±3.5%	2,449
West Kelowna Subtotal		38,281	1,746	4.5%	±2.3%	5,947
Glenrosa / Westbank	4001	22,977	1,055	4.6%	±2.9%	3,571
Rose Valley / Lakeview	4002	15,657	691	4.4%	±3.6%	2,376
WFN	5001	12,124	492	4.1%	±4.3%	1,736
Peachland *	6000	6,082	348	5.7%	±5.1%	1,154
RDCO West *	7000	3,200	203	6.3%	±6.7%	596
RDCO East *	8000	4,717	279	5.9%	±5.7%	917
Vernon Total		**46,212**	**1,699**	**3.7%**	**±2.3%**	**5,713**
City Core	1001	12,208	427	3.5%	±4.7%	1,497
East Hill	1002	11,742	469	4.0%	±4.4%	1,673
Landing / Priest's Valley	1003	14,276	514	3.6%	±4.2%	1,630
Outlying Areas / Predator Ridge / Foothills	1004	8,121	289	3.6%	±5.7%	913

Note: The theoretical margin of error is based on the estimated number of occupied dwellings (households) in 2024 using the hybrid approach described in Section 5.5 Data Weighting and Expansion in Report 1.

3.9 Data Reliability

The 2024 OTS was conducted with a sample of 4.1% of households in the study area. As with any survey, the data collected can be subject to sources of error or bias that can affect the reliability of the survey results. Potential sources of error and bias are as follows:

- **Undercoverage:** Coverage error occurs when certain groups within the population are not represented in the survey sample. The 2024 sample frame used Canada Post's database which provides comprehensive coverage of residential addresses in the region. Nonetheless, dwellings such as informal basement or secondary suites, as well as those currently unhoused or living in non-conventional dwelling types would not be in this sample source.
- **Non-response Bias:** Non-response bias arises when individuals who participate in the survey differ significantly from non-respondents in relevant ways. For example, if older participants are more likely to respond than younger age cohorts, the survey results may overestimate the number of daily trips being taken. Efforts have been made to mitigate this through targeted sampling and recruitment efforts during fieldwork to ensure a representative distribution of age groups, and data weighting and expansion by dwelling type, age, gender and household size.
- **Measurement Error:** Measurement error is a result of inaccuracies in the data collection process, such as respondent misunderstanding or ambiguous question wording. To address this potential error, the survey utilized wording and programming that has been tested and used during previous household travel surveys. Additionally, built-in logic checks flagged illogical answers and prompted respondents to correct them in real time. The data was also manually checked by the Ipsos help desk and follow-up calls were made as needed to correct missing or illogical data where possible.
- **Processing Error:** These errors occur during data handling and processing, such as data entry, editing and imputation during trip verification outreach and data cleaning. To minimize the potential for any such errors, the Ipsos help desk staff were trained on quality management processes, and data was checked at multiple stages by different teams involved in the project. See Section 3.5 for more information about the data cleaning process.
- **Sampling Error:** Sampling error is the difference between what the survey results show and what the true value would be if the entire population were surveyed. This is an unavoidable source of error resulting from interviewing a random sample of a population rather than the entire population. Best efforts were made to achieve a large enough sample size in each district by oversampling lower population areas in order to minimize the margin of error.
- **Error Due to Extreme Weights:** Smaller sample sizes not only lead to larger margins of error, but can also lead to extreme weights being used in smaller population areas. This can occur when certain responses are overly weighted to compensate for their underrepresentation in the sample. When analyzing results in lower population districts, extreme weights can disproportionately affect the results, leading to misleading conclusions. Limits were set on maximum weight factors for the 2024 OTS and categories were collapsed in lower population

demographic groups where needed. Notes are included where results should be interpreted with caution.

3.10 Treatment of the 2018 and 2024 Survey Data for Longitudinal Comparisons

No adjustments have been made to previous datasets for the purpose of longitudinal analysis. The sample population in 2024 was generally consistent with 2018, as were the requirements for participation. This includes residing within the survey area, being at least 16 years of age, and only collecting travel information for those ages 5 and above. Historical numbers are reported exactly as those reported at the time of the 2018 survey. Outlined below is the number of survey records associated with each of the survey datasets analyzed in Report 3: 2024 Okanagan Travel Survey – Analysis of Survey Results and Trends.

4. Household and Population Growth

This section provides a brief introduction to trends in households and population growth within the survey area from the baseline survey in 2007 to the 2013, 2018 and 2024 survey cycles. Household characteristics and population demographics are profiled in more detail in **Section 6,** along with tracking of selected trends for these demographics.

Throughout the report, most results are focused on three sub-areas: Vernon, Kelowna, and Other Central Okanagan. In some cases, results are presented for the study area as a whole as the findings may apply equally to all districts and sub-areas while in other cases results have been presented for each of the 19 sub-municipal districts to provide deeper insights into the variation across geographies in the study area. When 2024 results are compared to 2007, 2013 and 2018 at the district level, it should be noted that some variation may be due to differences in boundaries between districts in the various survey cycles.

Some trends are examined across 17 years and others for the six- and five-year increments between the 2007, 2013, 2018, and 2024 survey cycles. When interpreting longitudinal comparisons, it is important to note that some variation in survey results may be the result of errors related to random sampling, differences in survey design and/or different biases in the samples for the various survey cycles. That said, major trends should be apparent even if the comparisons are not exact.

The 2024 survey results are based on a 4.1% random sample of households expanded to represent the total private households and population of the study area. The expanded results should be understood to be estimates only. When presenting expanded survey counts, some larger figures are rounded to the closest 100, while other figures are rounded to the closest ten, so as not to give an undue impression of precision. It should be noted that the actual margin of error of the expanded results may be greater than the closest ten or closest 100.

4.1 Population and Households, 2007 to 2024

The survey area is comprised of approximately 287,000 individuals living in 127,000 private dwellings in 2024. This figure excludes the proportion of the population living in collective dwellings (dwellings of a commercial, institutional or communal nature) or without a fixed address which was outside the scope of this survey. Based on the survey data, there has been an 43.9% increase in population and a 53.2% increase in households in the 17 years since the baseline survey in 2007, with the increases since 2018 being 20.6% and 24.0%, respectively.

The Central Okanagan includes 105,570 households and 240,000 individuals. Population growth has been dramatic since 2018, at 21.8%. Throughout this report, the Central Okanagan is broken out into two sub-areas: two-thirds of the population live in the Kelowna sub-area (including approximately 70,960 households and 158,600 individuals (**Figure 18**), with the remaining geographies aggregated as the Other Central Okanagan sub-area, at 34,600 households and 81,390 individuals (**Figure 19**).

Vernon (comprised of the City of Vernon and Priest's Valley) accounts for 21,600 households and 46,000 individuals (**Figure 20**). While less dramatic than the Central Okanagan, the population increase in Vernon is nonetheless substantial at 14.9% since 2018.

Table 48 in the Appendix summarizes these figures for the major geographies in the study area. Consistent with trends observed over the previous survey cycles, all areas continue to see a reduction in average household size.

Exhibit – Figure 17. Population and Households (Expanded), 2007-2024 – Study Area

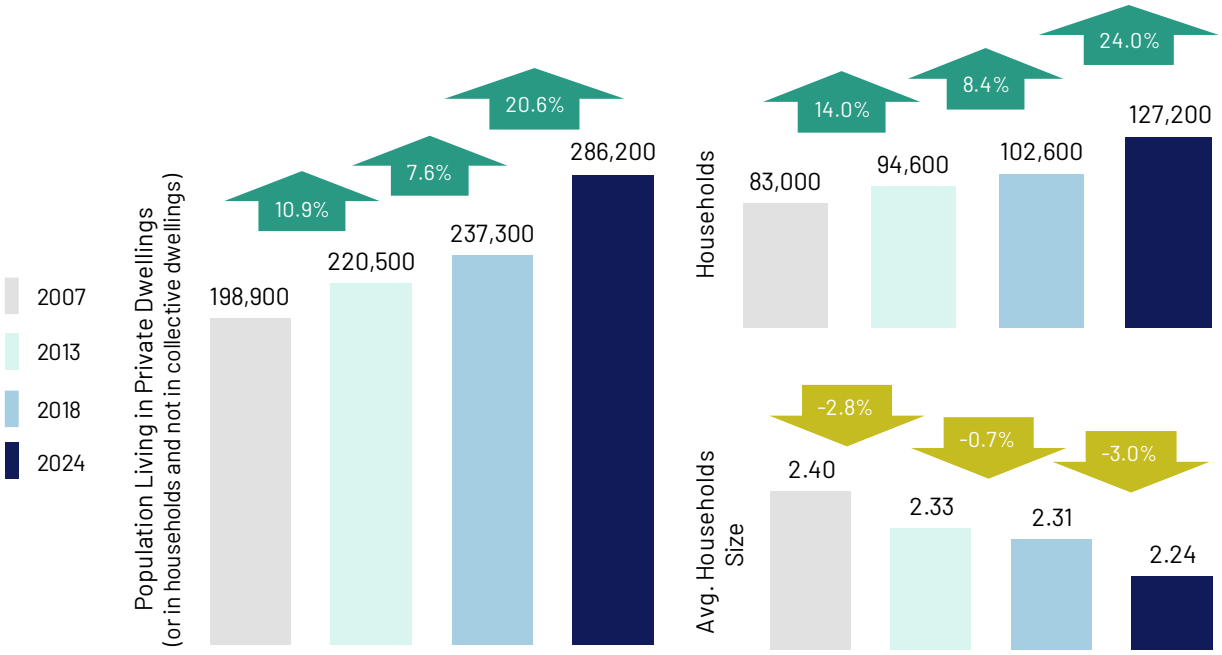


Exhibit – Figure 18. Population and Households (Expanded), 2007-2024 – Kelowna

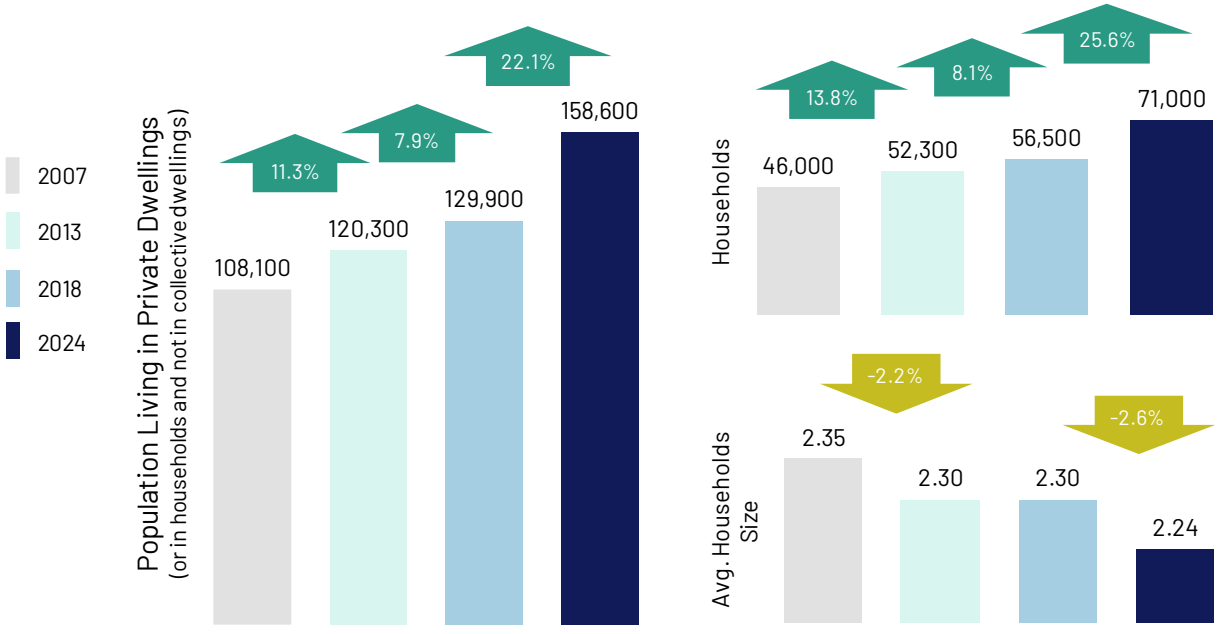


Exhibit – Figure 19. Population and Households (Expanded), 2007-2024 – Other Central Okanagan

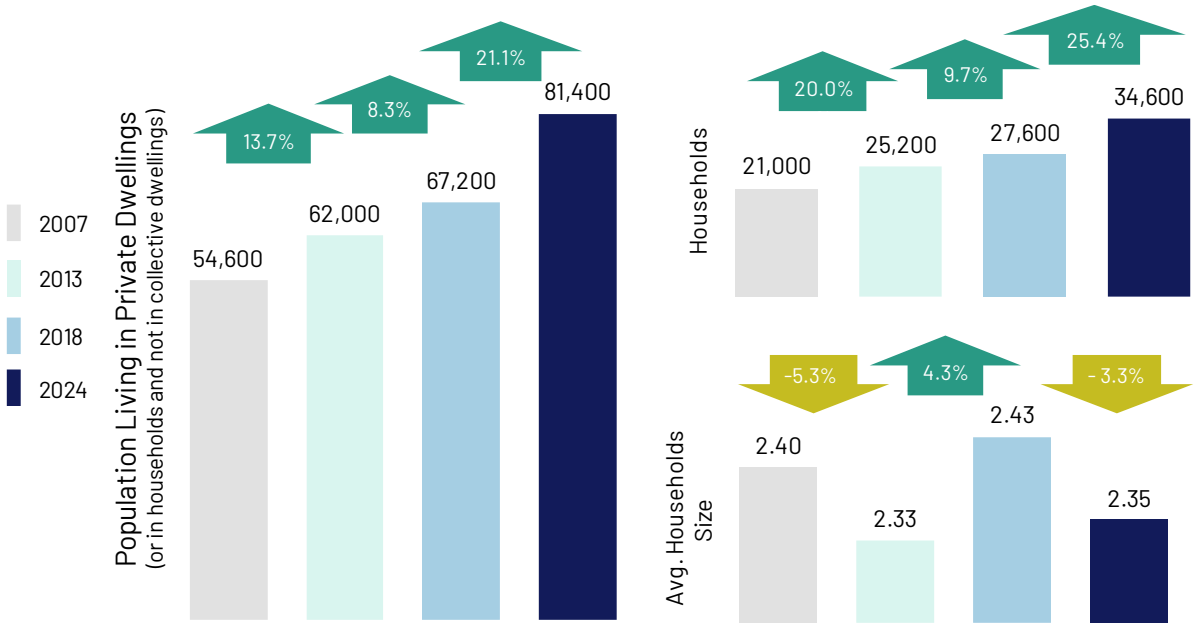


Exhibit – Figure 20. Population and Households (Expanded), 2007-2024 – Vernon

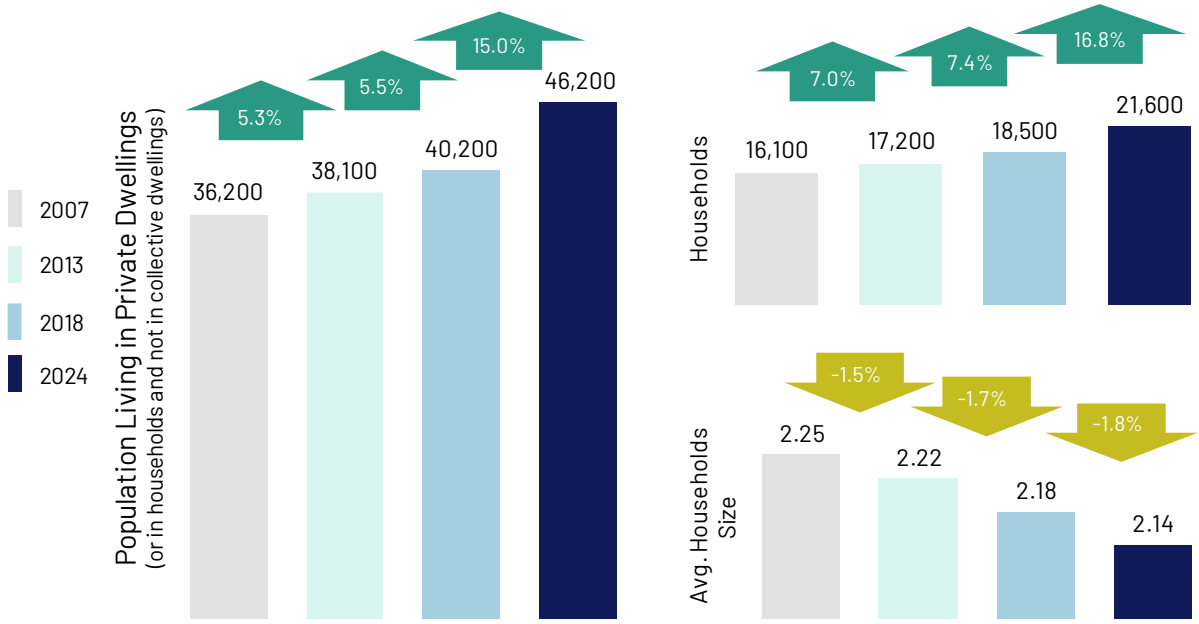


Figure 21 to the right depicts the population in each of the study area districts. The 19 sub-municipal districts have been colour-coded into Vernon, Kelowna and Other Central Okanagan areas for ease of reference. For analysis, the Okanagan Indian Band community in Duck Lake is grouped with Kelowna, while Priest's Valley has been aggregated with Vernon.

Similar to 2018, the Kelowna area accounts for 55% of the study area's population, with the remainder split between Other Central Okanagan (28%) and Vernon (16%). The asterisk (*) in Figure 21 indicates districts with a smaller sample size (n=63 and n=87) where results should be interpreted with caution. Survey sample sizes for other districts range from n=118 (Outlying Areas/Predator Ridge/Foothills) to n=682 (City Centre/Pandosy).

Exhibit – Figure 21. Population Distribution (Expanded), 2024

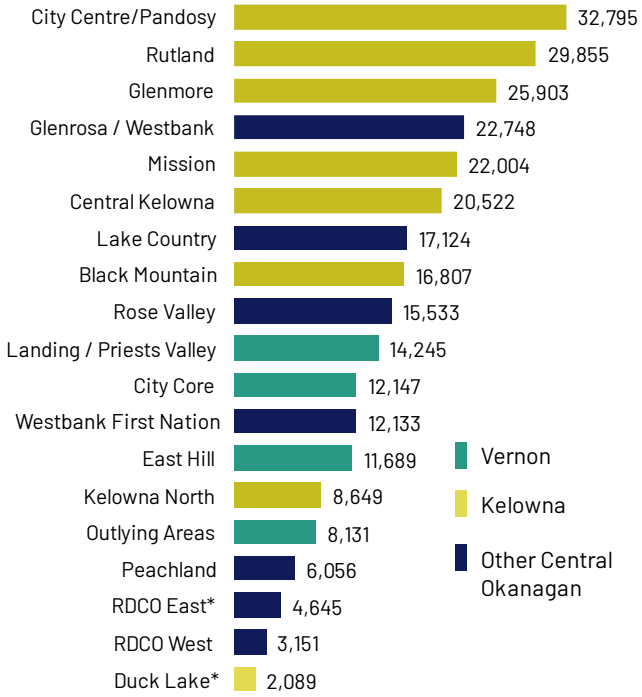
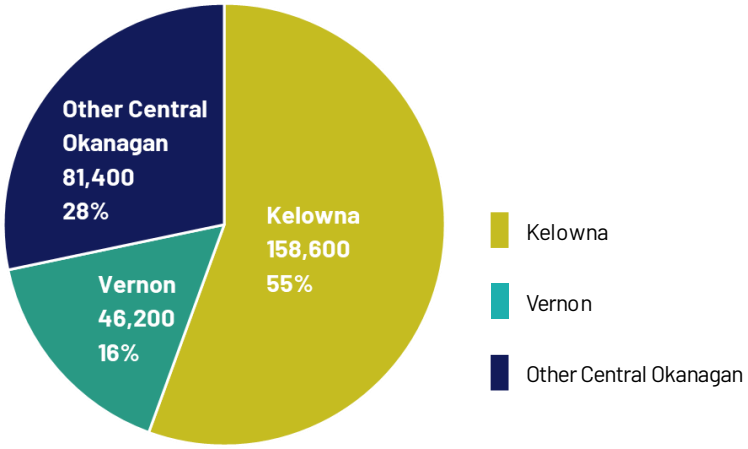


Exhibit – Figure 22. Population Share by Sub-Area (Expanded), 2024



4.1.1 Population and Households by District

Table 12 illustrates the 2024 population and household counts, as well as the average household size and growth in the six years since 2018. Vernon City Core, City Centre/Pandosy, Central Kelowna, Duck Lake and Westbank First Nation are the districts with the smallest average household size (ranging from 1.82 to 1.95 compared to the study area average of 2.26). In contrast, Mission, Rose Valley/Lakeview and Black Mountain/Southeast have the largest average household size, ranging from 2.61 to 2.74.

The districts with the highest population growth since 2018 are Landing/Priest's Valley, Outlying Areas, Kelowna North and RDCO West, ranging from 43.0% to 73.0% in the past six years.

Exhibit – Table 12. Households and Population (Pop'n) by District (Expanded), 2024

Geography	District	2024			% Change Since 2018		
		Households	Pop'n Households (Private Dwellings)	Avg. Household Size	Households	Pop'n (in households)	Avg. Household Size
Total Study Area		**127,177**	**286,227**	**2.26**	**24.0%**	**20.6%**	**-2.2%**
Total Central Okanagan		**105,568**	**240,015**	**2.29**	**25.5%**	**21.8%**	**-2.0%**
Kelowna Subtotal		**70,964**	**158,624**	**2.24**	**25.5%**	**22.2%**	**-2.8%**
City Centre / Pandosy	3001	17,621	32,795	1.86	31.7%	30.3%	-1.0%
Central Kelowna	3002	10,727	20,522	1.91	20.1%	19.8%	-0.4%
Glenmore	3003	10,928	25,903	2.37	32.8%	26.7%	-4.4%
Rutland	3004	12,151	29,855	2.46	9.6%	10.2%	0.7%
Mission	3005	8,022	22,004	2.74	21.0%	16.1%	-4.1%
Black Mountain / Southeast	3006	6,449	16,807	2.61	20.5%	15.5%	-4.2%
Kelowna North	3007	3,959	8,649	2.18	87.6%	73.0%	-7.8%
Duck Lake 7*	3008	1,106	2,089	1.89	36.6%	34.8%	-1.1%
Other Central Okanagan Subtotal		**34,604**	**81,391**	**2.35**	**25.4%**	**21.2%**	**-3.2%**
Lake Country	2000	6,907	17,124	2.48	30.3%	29.3%	-0.8%
West Kelowna Subtotal		*15,213*	*38,281*	*2.54*	*19.7%*	*16.8%*	*-1.4%*
Glenrosa / Westbank	4001	9,372	22,748	2.43	28.7%	22.8%	-2.9%
Rose Valley / Lakeview	4002	5,841	15,533	2.66	7.6%	9.0%	1.5%
Westbank First Nation	5001	6,230	12,133	1.95	33.7%	24.6%	-6.8%
Peachland	6000	2,879	6,056	2.10	15.2%	9.3%	-5.3%
RDCO West	7000	1,459	3,151	2.16	60.3%	60.8%	0.5%
RDCO East*	8000	1,915	4,645	2.43	26.0%	18.5%	-6.0%
Total Vernon		21,609	46,212	2.14	17.1%	14.9%	-1.9%
City Core	1001	6,659	12,147	1.82	14.0%	17.9%	3.6%
East Hill	1002	4,843	11,689	2.41	-24.3%	-23.0%	1.8%
Landing / Priest's Valley	1003	3,530	14,245	2.30	56.2%	43.0%	-2.8%
Outlying Areas / Predator Ridge / Foothills	1004	6,576	8,131	2.17	75.6%	70.5%	-8.6%

5. Travel Patterns and Trends

This section of the report presents trips characteristics for the weighted and expanded survey data. Trip information was collected from household members who were 5 years of age or older for a sampled weekday in the fall of 2024 (with travel days ranging from October 8 to November 7). For this survey, a trip is defined as a one-way journey from one location to another for a single purpose. A trip may include more than one mode of travel, such as walking and transit. For the purpose of this study, recreational loop trucks (e.g., walking the dog or going for a recreational bike ride) were excluded. Trip information collected included origin and destination locations, trip departure and arrival times, trip purpose or activity at the destination, mode of travel (up to 3 modes), number of vehicle occupants (if auto driver) and reasons for not travelling if no trips were made.

As with the results in the previous section, the expanded survey results should be understood to be estimates only. When presenting expanded survey data on estimated trip volumes, many of the results are rounded to the closest 100, so as not to give an undue impression of precision. Therefore, sometimes breakdowns of rounded trip counts for individual categories may not appear to sum to the rounded survey total across all categories. Trip rates and percentages have generally been computed using the unrounded expanded counts, so attempts to reproduce these statistics using the rounded trip counts may not always provide the same result.

Some differences between 2007, 2013, 2018, and 2024 survey cycles may be variance due to methodological differences between the surveys or errors associated with random sampling. However, as in the previous section, overall trends should become apparent when comparing 2024 results to the 2007 baseline study.

This chapter is generally organized as follows:

- The first section looks at trends in total trips and trip rates (average daily trips per person or per household), followed by a section examining the trip volumes and trip rates for different household and demographic characteristics. (**Sections 5.2** , **5.3**)
- The next section presents a profile of trips by hour of day, illustrating the AM Peak and extended PM Peak periods. (**5.3**)
- The next two sections present key survey results on trips by mode of travel and by purpose, looking more closely at these measures from a number of different perspectives. (**5.4**, **5.5**)
- Following sections examine other trip characteristics, such as number of passengers in vehicle trips and boardings for transit trips (**5.6, 5.7)**

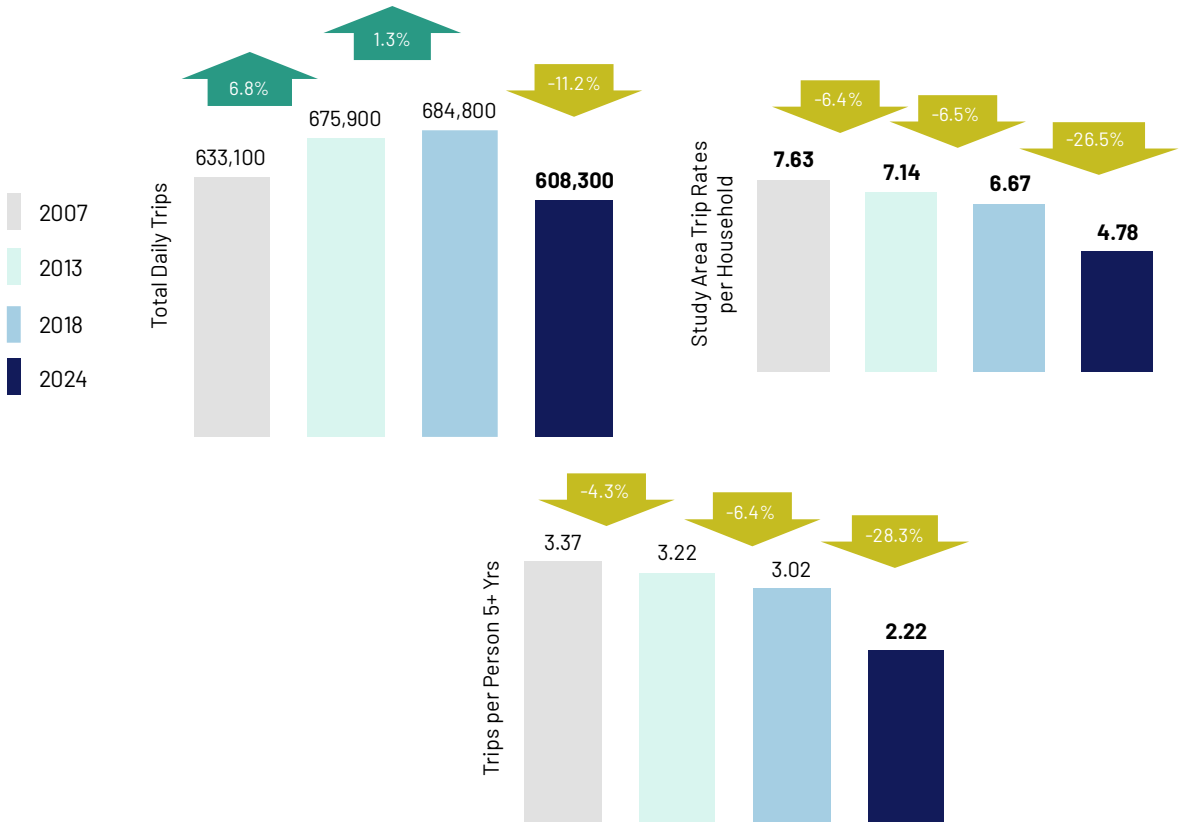
5.1 Total Trips and Trip Rates

Over the course of a typical 24-hour fall day, residents of the study area make a total of approximately 608,300 trips. On average, each household makes 4.78 trips each day, while each person over the age of five makes 2.22 trips per person each day. The volume of trips in 2024 is a decrease of only 3.9% over the 17 years since the 2007 baseline survey, but a substantial decline of 11.2% over the last six years. This is despite the 20.8% growth in persons 5+ years of age (those from whom trips were surveyed) since 2018.

Trip rates at a household- and person-level have been trending downwards since the baseline survey in 2007, and results in 2024 show a continuation of this pattern. However, the decline in trip rates has accelerated, dropping from an average of 6.67 trips per household 2018 to 4.78 in 2024. This is consistent with shrinking average household size across the study area. At the person level, trip rates have declined from 3.02 trips per person in 2018 to 2.22 in 2024. Taken together, these results suggest there have been significant shifts in travel behaviour and trends over the last six years, likely driven by the upheaval to working arrangements and lifestyle behaviours caused by the COVID-19 pandemic.

It may be noted that some of the fluctuation between survey cycles may be attributed to sampling error (the error associated with randomly sampling a percentage of the population to survey), and the results may also be affected by differences in methodology.

Exhibit - Figure 23. Total Trips and Trip Rates – Study Area, 2007-2024

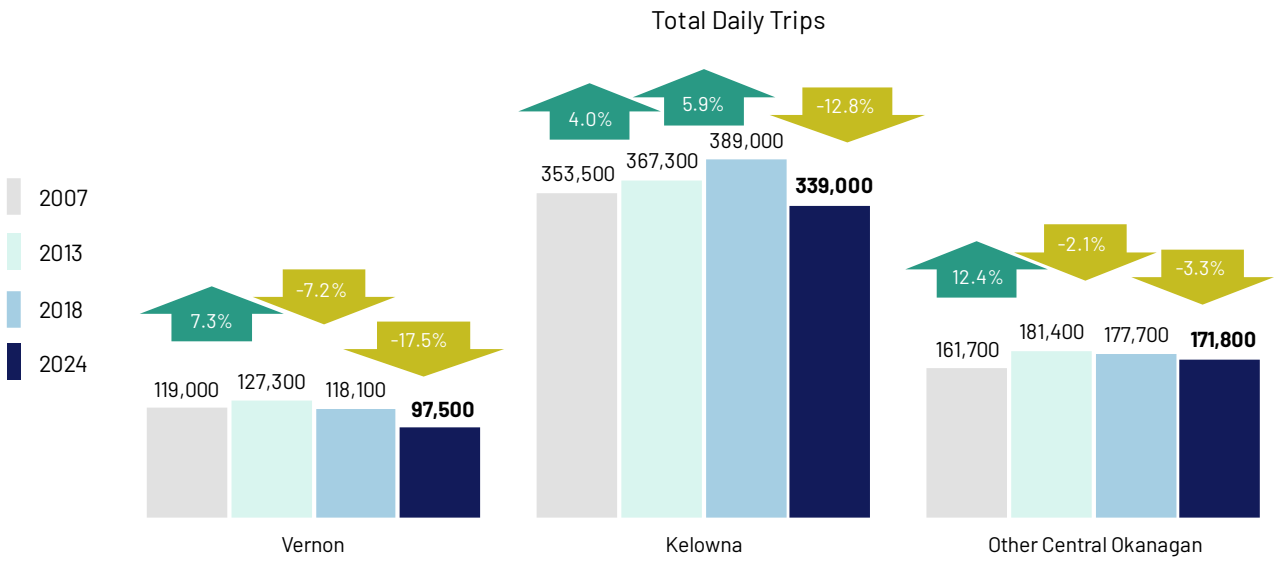


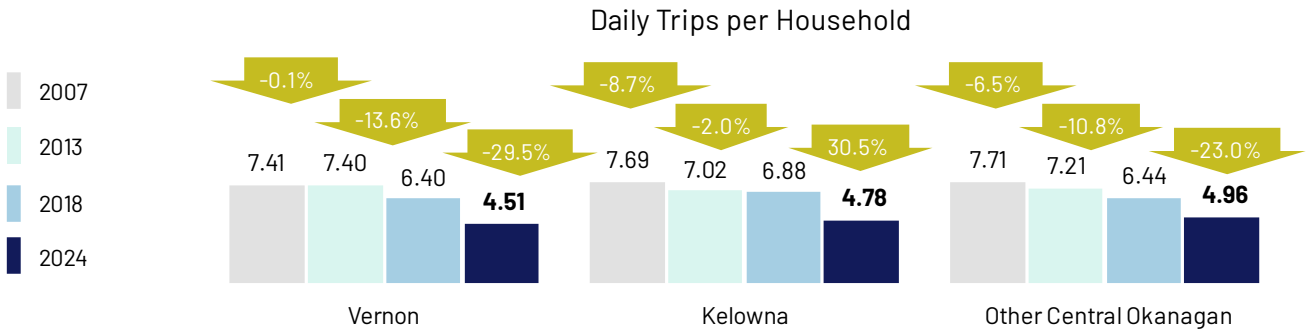
The decline in total number of trips appears to be at least partly the result of fewer people travelling at all. In fact, in 2024 more than one-third of all persons 5+ years of age did not make at least one trip in the survey area (36.1% compared to 14.5% in 2018 and 2013 and 15.7% in the baseline 2007 study). With a higher incidence of working from home in 2024 along with the growing popularity of online shopping and personal business, there may be fewer reasons for working age adults to leave the house during the week (see **Section 5.5** for trends in trip purpose). Readers are reminded that for the purpose of this study, recreational loop trips (defined as trips without a destination such as going for a jog, walking the dog, or riding a bike around the neighbourhood) have been excluded.

Looking at the results of the survey by sub-area reveals that the decline in trip rates is not uniform (see **Figure 24** below). The survey results suggest that Vernon has seen the sharpest decline in total daily trips, down 17.5% from 2018 compared to a 7.2% drop between 2013 and 2018. Trips rates similarly see a more substantial decline in Vernon and Kelowna compared to Other Central Okanagan (daily trips per person down 27.9%, 28.8% and 20.4% respectively).

Trends in trips by purpose, mode, and age group as well as total trip distances and VKT per person will be explored in more detail in the following sections of this report.

Exhibit - Figure 24. Total Trips and Trip Rates – by Sub-Area of Residence, 2007-2024





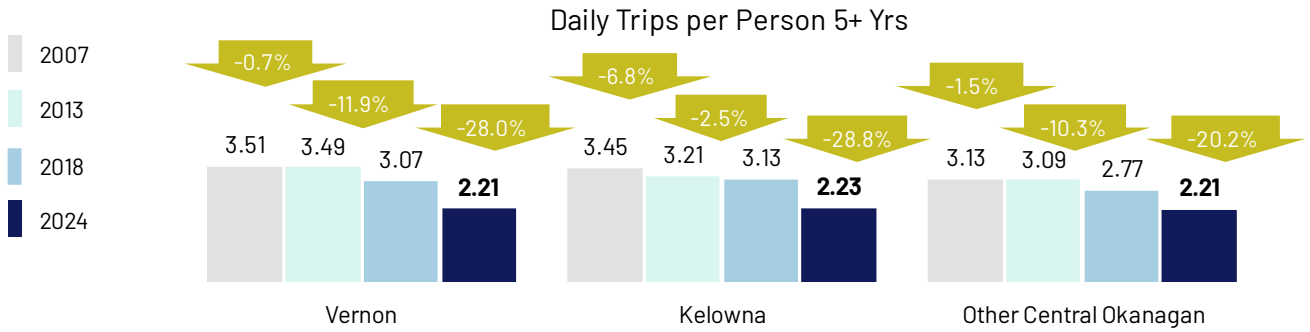


Exhibit - Table 13. Average Daily Trips per Household and per Person by Geography of Residence, 2007-2013

Measure	Year	Expanded Estimates and Trip Rates					% Change on Previous Cycle				
		Study Area	Central Ok.	Vernon	Kelowna	Other Central Ok.	Study Area	Central Ok.	Vernon	Kelowna	Other Central Ok.
Households	2007	83,000	66,900	16,100	46,000	21,000					
	2013	94,700	77,500	17,200	52,300	25,200	+14.0%	+15.7%	+7.0%	+13.8%	+20.0%
	2018	102,600	84,100	18,500	56,500	27,600	+8.4%	+8.6%	+7.4%	+8.1%	+9.7%
	2024	127,200	105,600	21,600	70,900	34,600	+24.0%	+25.5%	+16.8%	+25.6%	+25.4%
Persons 5+ Years of Age	2007	188,100	154,200	33,900	102,600	51,600					
	2013	209,700	173,200	36,500	114,400	58,800	+11.5%	+12.3%	+7.9%	+11.5%	+14.0%
	2018	226,800	188,400	38,400	124,200	64,200	+8.2%	+8.8%	+5.3%	+8.6%	+9.2%
	2024	274,000	230,000	44,000	152,200	77,900	+20.8%	+22.1%	+14.7%	+22.5%	+21.3%
Total Trips	2007	634,200	515,200	119,000	353,500	161,700					
	2013	675,900	548,700	127,300	367,300	181,400	+6.8%	+6.6%	+7.3%	+4.0%	+12.4%
	2018	684,800	566,700	118,100	389,000	177,700	+1.3%	+3.3%	-7.2%	+5.9%	-2.1%
	2024	608,300	510,800	97,500	339,000	171,800	-11.2%	-9.9%	-17.5%	-12.8%	-3.3%
Household Trip Rate	2007	7.64	7.70	7.41	7.69	7.71					
	2013	7.14	7.08	7.40	7.02	7.21	-6.5%	-8.0%	-0.1%	-8.7%	-6.5%
	2018	6.67	6.74	6.40	6.88	6.44	-6.5%	-4.9%	-13.6%	-2.0%	-10.8%
	2024	4.78	4.84	4.51	4.78	4.96	-28.3%	-28.2%	-29.5%	-30.6%	-22.9%
Persons Age 5+ Trip Rate	2007	3.37	3.34	3.51	3.45	3.13					
	2013	3.22	3.17	3.49	3.21	3.09	-4.4%	-5.2%	-0.7%	-6.8%	-1.5%
	2018	3.02	3.01	3.07	3.13	2.77	-6.4%	-5.1%	-11.9%	-2.5%	-10.3%
	2024	2.22	2.22	2.21	2.23	2.21	-26.5%	-26.2%	-28.0%	-28.8%	-20.2%

5.1.1 Trips and Trip Rates by Municipalities

Figure 25 summarizes the number of daily trips by municipality. As shown, the survey results indicate some variance in changes in trip volume by municipality since 2018. With the exception of Westbank First Nation (WFN), all other municipalities have seen a decrease in trips.

At an individual level, residents of the Regional District of Central Okanagan (RDCO) take 4 trips per person on average on a daily basis - nearly twice as many as residents of other municipalities. This stands to reason given the RDCO is less densely populated and covers a large geographical area. Meanwhile, those in Lake Country make the fewest daily trips on average at 2.11, with the remaining municipalities ranging from a low of 2.21 in Vernon to 2.31 in Peachland.

Exhibit - Figure 25. Total Daily Trips by Municipality of Residence (Expanded)

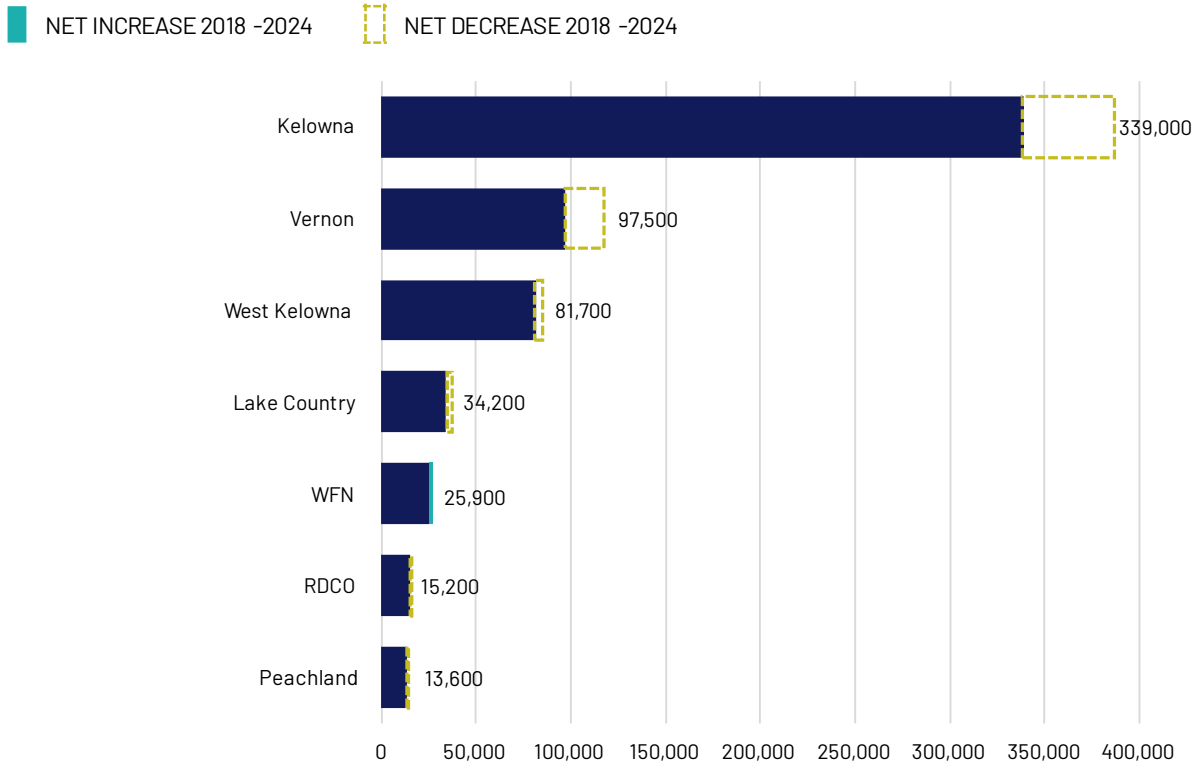
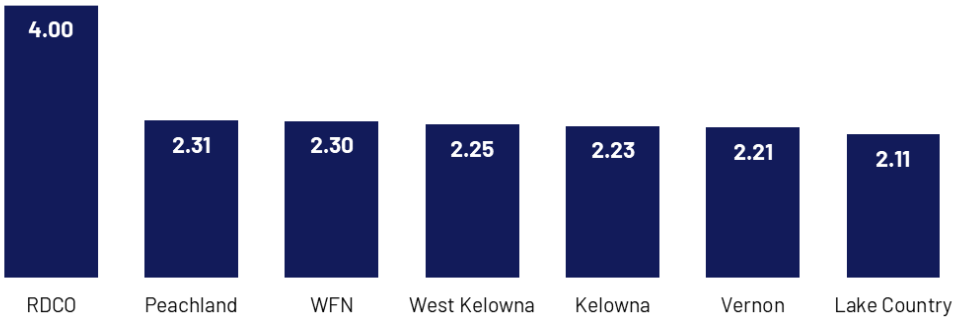


Exhibit – Figure 26. Person Trip Rates by Municipality, 2024



5.1.2 Trips and Trip Rates by District

The number of daily trips and trip rates are broken out by district in the following charts (**Figure 27** and **Figure 28**). The figure on the left provides an illustration of the 6-year growth or decline in trips made by residents of each district since 2018. As illustrated, the survey results demonstrate that changes in trip volumes have varied across sub-area and district. While most districts have seen a decrease in trips, there has been an increase in trips in the following districts: Landing / Priest's Valley, Outlying Areas, Kelowna North, Westbank First Nation and RDCO West. Daily person trip rates can be seen to vary by individual district (see **Figure 28** on the following page).

Exhibit - Figure 27. Total Daily Trips by District of Residence

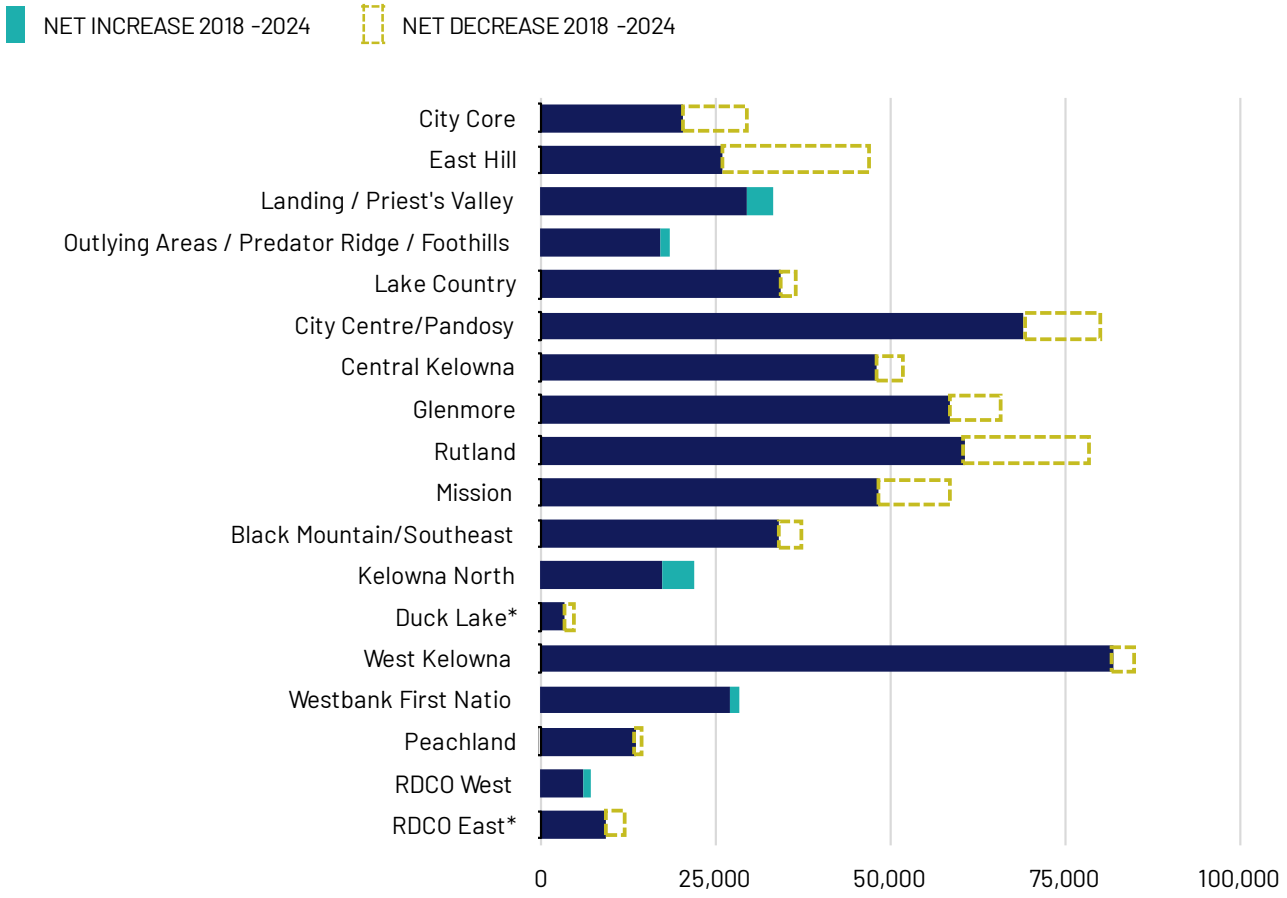
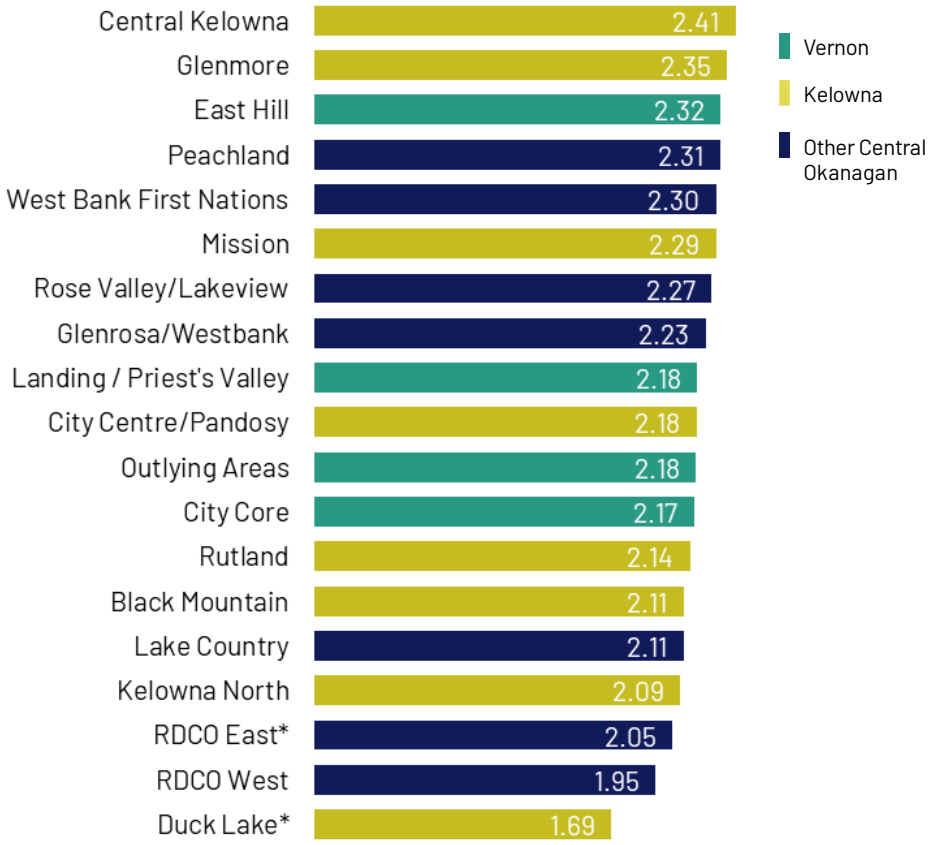


Exhibit - Figure 28. Person Age 5+ Trip Rates by District of Residence



5.2 Trip Rates by Selected Characteristics

5.2.1 Trip Rates by Household Characteristics

Table 14 illustrates the relationship between household characteristics and trip rates. Factors such as dwelling type, household income, and vehicle ownership are often inherently linked to household size, resulting in substantial variations in household trip rates across different characteristics. While this information is valuable for modeling purposes, examining person trip rates may provide more insightful analysis when attempting to understand the nuance of these differences.

By household size, four-person households (which are likely households with multiple children) generally have the highest trip rates, followed by single-person households – likely due to one person being responsible for all trips related to household management.

Those in single-detached homes had notably higher trip rates than those in other dwelling types (2.25 compared to 2.20 for those in apartments and 2.19 for other ground-oriented dwellings). Similarly, those in more affluent households ($80,000 or more per year) appear to take more trips than those in lower income households. Specifically, 2.44 trips per person in households with the highest income bracket compared with 1.91 trips per person among those earning less than $30,000 per year. Of note, those in the lowest income bracket are more likely to be retired and as such, likely make fewer trips for work or school-related purposes.

The small proportion of the population living in households without vehicles also incurred fewer trips per person (1.61 on average). Within the three main sub-areas, there may be variations from the overall pattern for the study area that are in keeping with different demographic profiles of these sub-areas.

Exhibit - Table 14. Total Daily Trips and Trip Rates by Household Characteristics, 2024

Household Characteristic	Study Area			Vernon			Kelowna			Other Central Okanagan		
	Trips	HHLD Trip Rate	Person Trip Rate	Trips	HHLD Trip Rate	Person Trip Rate	Trips	HHLD Trip Rate	Person Trip Rate	Trips	HHLD Trip Rate	Person Trip Rate
Survey Total	608,300	4.78	2.22	97,500	4.51	2.21	339,000	4.78	2.23	171,800	4.96	2.21
By Household Size												
1 person	88,100	2.36	2.41	17,200	2.35	2.49	52,400	2.39	2.41	18,500	2.27	2.33
2 people	204,600	4.04	2.08	33,400	3.97	2.06	113,400	4.18	2.12	57,700	3.83	1.98
3 people	102,600	6.14	2.22	17,000	6.39	2.32	57,000	6.09	2.22	28,600	6.10	2.12
4 people	126,300	8.83	2.46	18,500	8.96	2.42	68,300	8.58	2.43	39,500	9.23	2.51
5+ people	86,700	10.66	2.14	11,400	9.68	1.91	47,900	10.60	2.07	27,400	11.26	2.37
By Dwelling Type												
House	353,500	5.70	2.25	55,500	5.33	2.26	175,200	5.89	2.24	122,800	5.63	2.24
Apartment	110,600	3.38	2.20	16,500	3.00	2.11	80,600	3.50	2.21	13,500	3.26	2.19
Other ground oriented	144,200	4.43	2.19	25,500	4.47	2.19	83,200	4.58	2.22	35,500	4.10	2.11
By Household Income												
Less than $30K	31,200	3.01	1.91	5,100	2.93	2.01	21,200	3.20	1.95	4,900	2.44	1.63
$30K to <$50K	50,400	3.44	2.06	9,200	2.89	1.87	28,000	3.48	2.08	13,200	3.83	2.15
$50K to <$80K	91,200	4.13	2.18	20,500	4.90	2.37	47,800	3.87	2.13	22,900	4.12	2.14
$80K to <$125,000	153,200	5.36	2.41	26,100	5.00	2.33	87,600	5.66	2.54	39,500	5.03	2.19
$125,000 or more	216,200	6.59	2.44	22,900	6.54	2.46	122,000	6.50	2.45	71,300	6.78	2.40
Unknown	65,800	3.56	1.70	13,600	3.63	1.83	32,300	3.37	1.53	19,900	3.84	1.96
By Vehicle Ownership												
At least 1 vehicle	592,900	4.91	2.24	95,300	4.61	2.23	326,500	4.96	2.26	171,100	5.01	2.22
No vehicles	15,400	2.37	1.61	2,200	2.32	1.57	12,500	2.44	1.68	700	1.66	0.95

5.2.2 Trip Rates by Demographic Characteristics

The table below summarizes the relationship between various demographic characteristics such as employment or school status and mobility challenges to trip rates.

Unsurprisingly, those who are employed have the highest trip rates (2.39 average daily trips per full-time worker and 2.23 trips per part-time worker). Those who are retired, unemployed or are parent or caregivers make relatively fewer trips per day on average.

K-12 students tend to have higher trip rates, particularly elementary school students (2.48 daily trips per person on average). This could be due to mandatory daily in-person instruction for this age group compared to those at the post-secondary level. Those in online or distance learning have the highest daily trip rates (2.78 trips per person). This stands to reason as those who opt for flexible learning may do so because they have work, parenting, or other responsibilities that keep them busy and on the go.

Exhibit - Table 15. Total Daily Trips and Trip Rates for Selected Demographic Characteristics, 2024

	Study Area		Vernon		Kelowna		Other Central Okanagan	
	Daily Trips	Person Trip Rate	Daily Trips	Person Trip Rate	Daily Trips	Person Trip Rate	Daily Trips	Person Trip Rate
Survey Total	**608,298**	**2.22**	**97,480**	**2.21**	**339,041**	**2.23**	**171,777**	**2.21**
By Employment Status								
Work Full-Time	263,631	2.39	39,064	2.49	152,891	2.38	71,676	2.36
Work Part-Time	62,777	2.32	9,794	2.08	37,378	2.46	15,605	2.17
Unemployed	13,812	1.36	2,887	1.34	7,660	1.36	3,265	1.38
Parent or caregiver	16,132	1.70	2,639	1.76	9,163	1.69	4,330	1.70
Retired	133,200	1.87	25,430	1.84	64,022	1.85	43,748	1.90
By Student Status								
Elementary school	42,451	2.48	8,322	2.50	21,738	2.44	12,390	2.54
Middle school	17,862	2.30	145	0.41	11,105	2.32	6,611	2.52
Secondary school	28,654	2.39	5,175	2.33	15,711	2.34	7,768	2.54
College or university	31,108	2.07	2,788	1.98	22,993	2.12	5,326	1.93
Alternate, adult basic education, or other	1,199	2.01	203	3.45	214	0.77	782	3.01
Online / distance learning	4,071	2.78	518	2.34	2,236	2.63	1,317	3.39
Mobility Challenges								
Mobility challenge	32,801	1.98	5,276	1.53	17,075	1.90	10,450	2.51
No challenges reported	566,412	2.12	90,670	2.14	316,315	2.14	159,427	2.08

Figure 29 illustrates the relationship between age and trip rates for the entire study area. As shown, the highest trip rates are amongst those 35 through 49 years old (ranging from 2.64 to 2.88 trips per day). In contrast to survey results in 2018, primary and middle school aged children now have above average trip rates (a high of 2.42 daily trips among those between the ages of 10 to 14). The elderly make below average daily trips, with a steep decline starting at age 75. It is important to note that those in collective dwellings are not included in this survey, so the results do not reflect those who may be in care homes or assisted living facilities.

Exhibit - Figure 29. Trip Rate by Age – Study Area, 2024

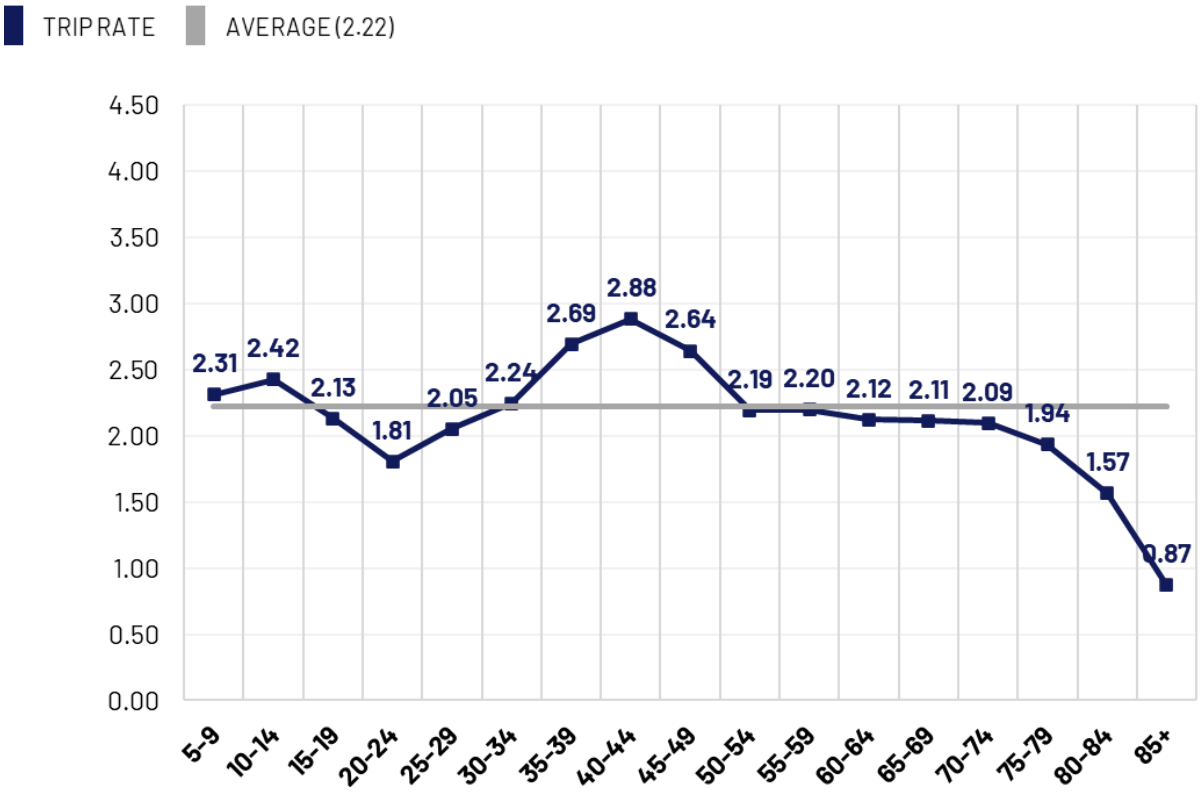


Figure 30 on the next page illustrates the 2024 trip rates by age compared with 2018. Trip rates follow a similar pattern, with lower average daily trips among 20 to 24 year olds, climbing to a peak among those in prime career and family building life stages (35 to 49 year olds), and then declining as age progresses beyond 65. However, the fluctuation observed among those between 65 to 69 in 2018 is not present in 2024, with daily trip rates plateauing between 50 and 74 years of age.

Exhibit - Figure 30. Trip Rate by Age – Study Area, 2018-2024

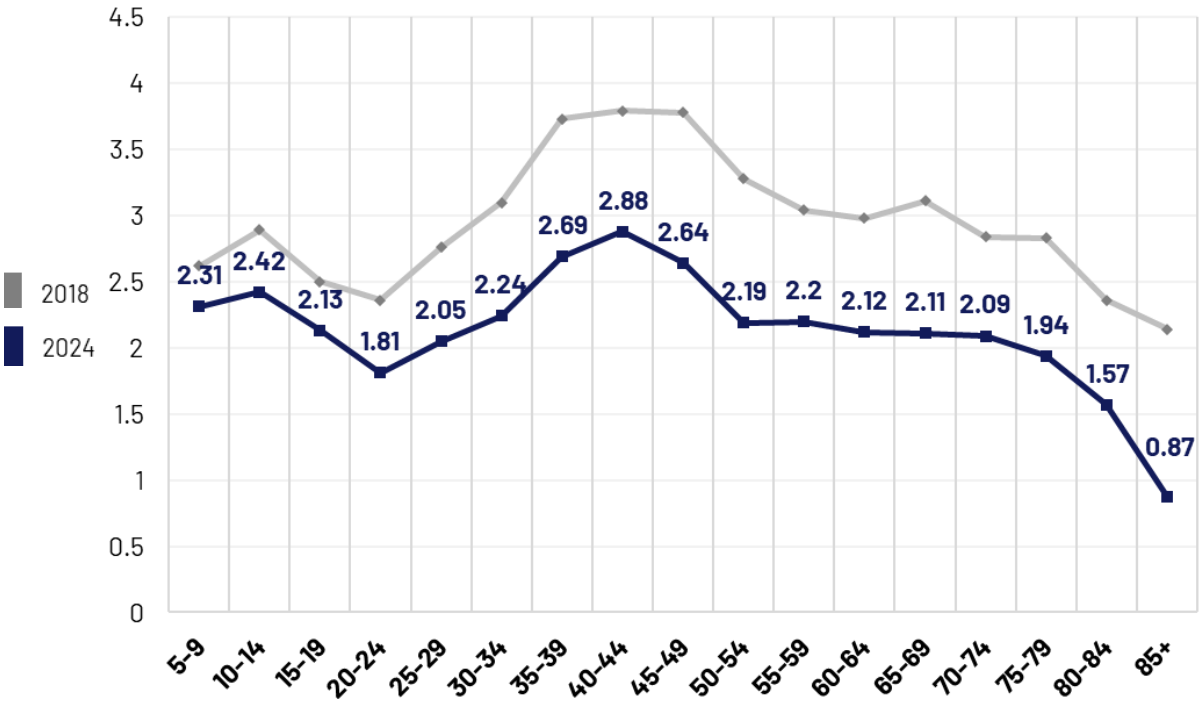


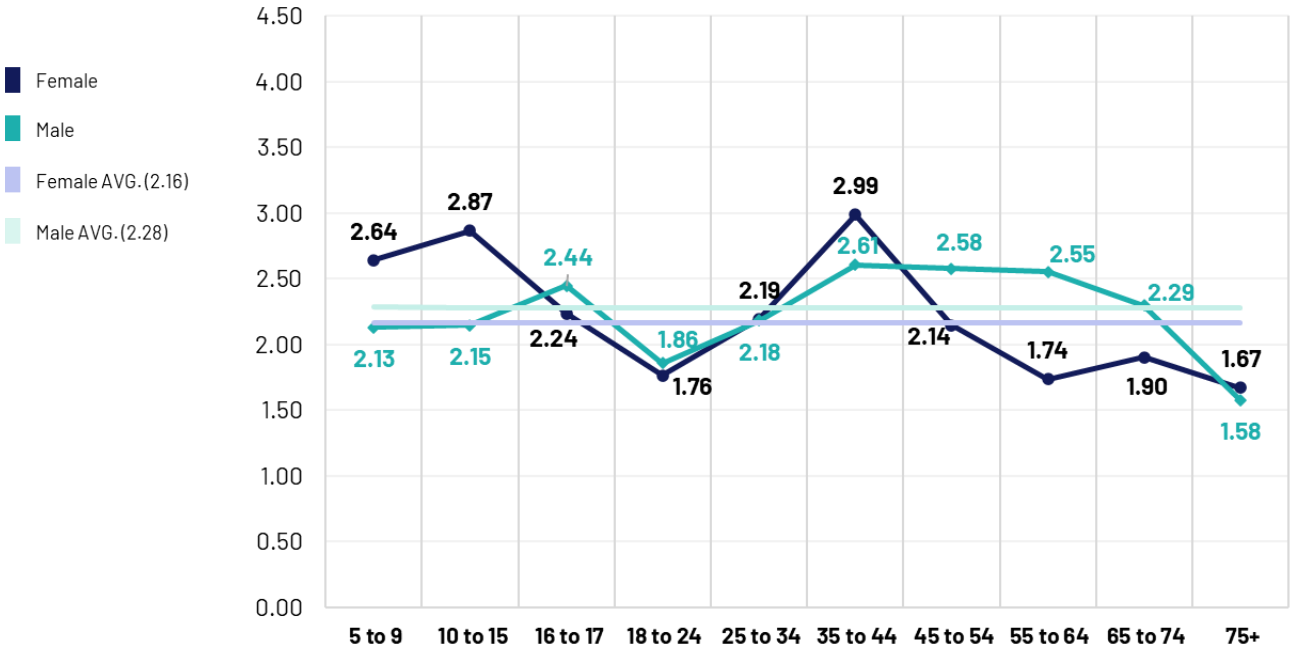
Table 16 below summarizes the trip rate profile by age group for each of the sub-areas. Age groups have been collapsed to allow for larger sample sizes for age ranges within sub-areas, but generally follow the same trend as the overall disaggregated age groups for the total study area.

Exhibit – Table 16. Total Daily Trips and Trip Rates by Age and Sub-Area, 2024

Age Range	Study Area		Vernon		Kelowna		Other Central Okanagan	
	Daily Trips	Person Trip Rate	Daily Trips	Person Trip Rate	Daily Trips	Person Trip Rate	Daily Trips	Person Trip Rate
5 to 9 years	32,224	2.31	4,802	2.11	17,287	2.32	10,135	2.41
10 to 15 years	44,460	2.44	6,868	2.37	24,579	2.38	13,012	2.61
16 to 17 years	14,331	2.27	2,117	2.15	7,730	2.21	4,484	2.46
18 to 24 years	40,025	1.78	4,828	1.64	26,577	1.86	8,621	1.66
25 to 34 years	87,385	2.16	12,234	2.17	54,545	2.15	20,605	2.19
35 to 44 years	107,021	2.78	16,591	3.01	60,123	2.72	30,307	2.79
45 to 54 years	75,073	2.42	11,700	2.43	43,062	2.49	20,310	2.26
55 to 64 years	87,902	2.16	15,115	2.17	44,449	2.17	28,338	2.13
65 to 74 years	77,120	2.11	14,237	2.10	39,267	2.20	23,615	1.96
75+ years	42,758	1.66	8,988	1.70	21,422	1.59	12,349	1.76

Figure 31 illustrates a different perspective – trip rates for women and men by age group. Results are again reported using aggregated age groups. Overall, men take more daily trips on average – 2.28 compared with 2.16 average trips among women. However, there are some notable differences by age cohort. Trip rates are substantially higher among younger women between the ages of 5 to 15, as well as women between the ages of 35 and 44 compared with their male counterparts. However, from age 45 to 74, trip rates are consistently higher for men, though average daily trips eventually dovetail again for 75 onwards.

Exhibit – Figure 31. Trip Rates by Age and Gender – Study Area, 2024



5.3 Trips by Start Hour

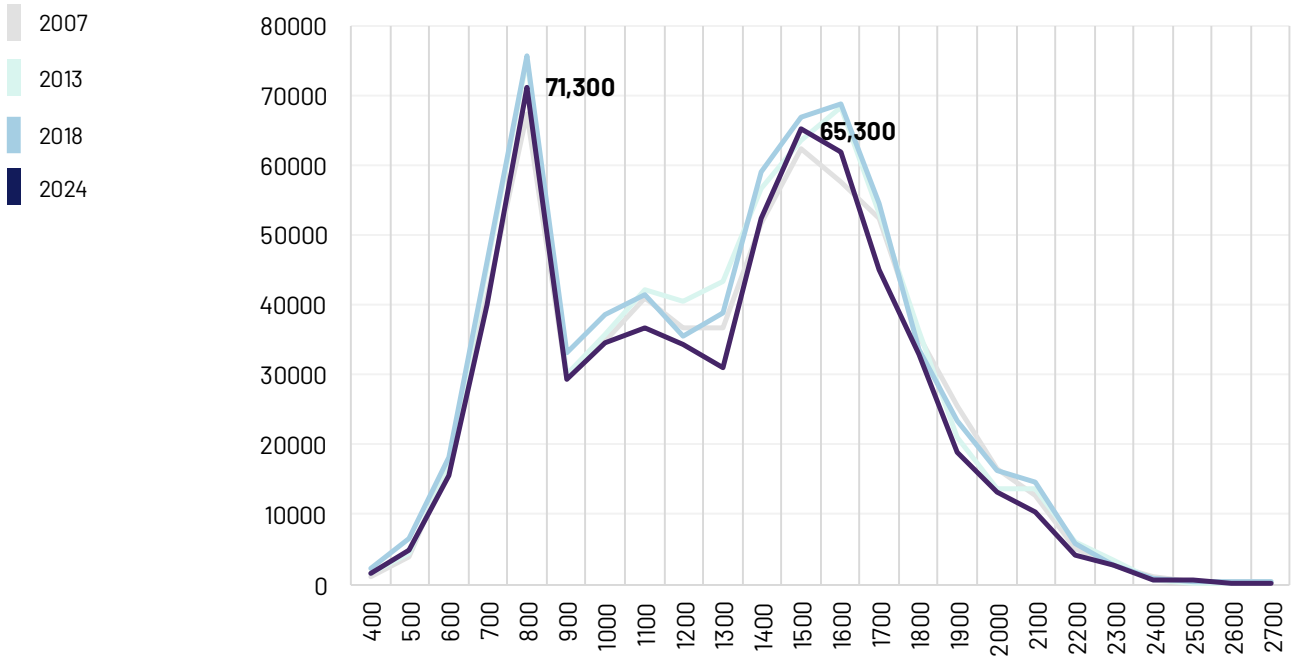
5.3.1 Profile of Trips by Start Hour

Figure 32 below illustrates the distribution of trips across a 24-hour period by trip start time. As shown, the volume of trips begins to sharply increase at 6 AM with approximately 15,680 trips, climbing to 40,150 by 7 AM and then reaching a peak of 71,300 trips at 8 AM. Commute trips to work and school largely account for this first wave. From 9 AM to 2 PM, there is a five hour window which varies between 29,500 trips to 36,600 trips per hour. At 2 PM, a second peak begins to build with roughly 52,400 trips, rising to a maximum of about 65,270 trips per hour at 3 PM. This coincides with the window for picking children up for school or starting the commute home from work. The volume of trips then begins to steadily decline throughout the remainder of the early evening.

Looking at the change in the profile over time shows some variability in trips by time of day:

- The AM Peak appears to have almost exactly the same profile as in 2007.
- The inter-peak period sees a decline in trips between 12PM and 1 PM in contrast to a slight increase in trip volumes in 2013 and 2018 during this time of day.
- The 2024 survey data also suggests the PM peak begins to decline at 4 PM, while this hour was the PM peak in 2013 and 2018.

Exhibit - Figure 32. Trip by Start Hour – Study Area, 2007-2024



Comparing the 2024 trip distributions by sub-area (Figure 43 on the following page), similar patterns are observed across regions. Across all sub-areas, trip volumes begin to increase at 6 AM and reach a concentrated morning peak at 8 AM, with approximately four times the volume of trips in the more

densely populated Kelowna area compared to Vernon. Both Vernon and Other Central Okanagan reach their inter-peak low at 9 AM, with a slight increase between 9 AM and 11 AM in Other Central Okanagan. Although trip volumes in Kelowna also decline at 9 AM, the lowest trip volume isn't reached in this community until 1 PM.

Trip volumes then begin to climb again to a peak 3 PM across all sub-areas. In contrast to the concentrated morning rush, the afternoon peak is sustained through to 5 PM and then begins to steadily drop across all regions. In Kelowna, trip volumes plateau briefly between 8 PM and 9 PM perhaps due to a higher concentration of evening recreational activities or dining options in this community. It should be noted that the survey did not capture commercial trips such as delivery or truck drivers or trips made by residents of nearby communities outside the study area who may have travelled through the region.

Readers are also referred to **Section 5.4.7** Trip Mode by Start Hour, **Section 5.5.3** Trip Purpose by Start Hour, and **Section 5.5.5** Home-Based Trip Purposes for further exploration of hourly trip patterns.

Exhibit - Figure 33. Trips by Start Hour – by Sub-Area of Residence, 2024

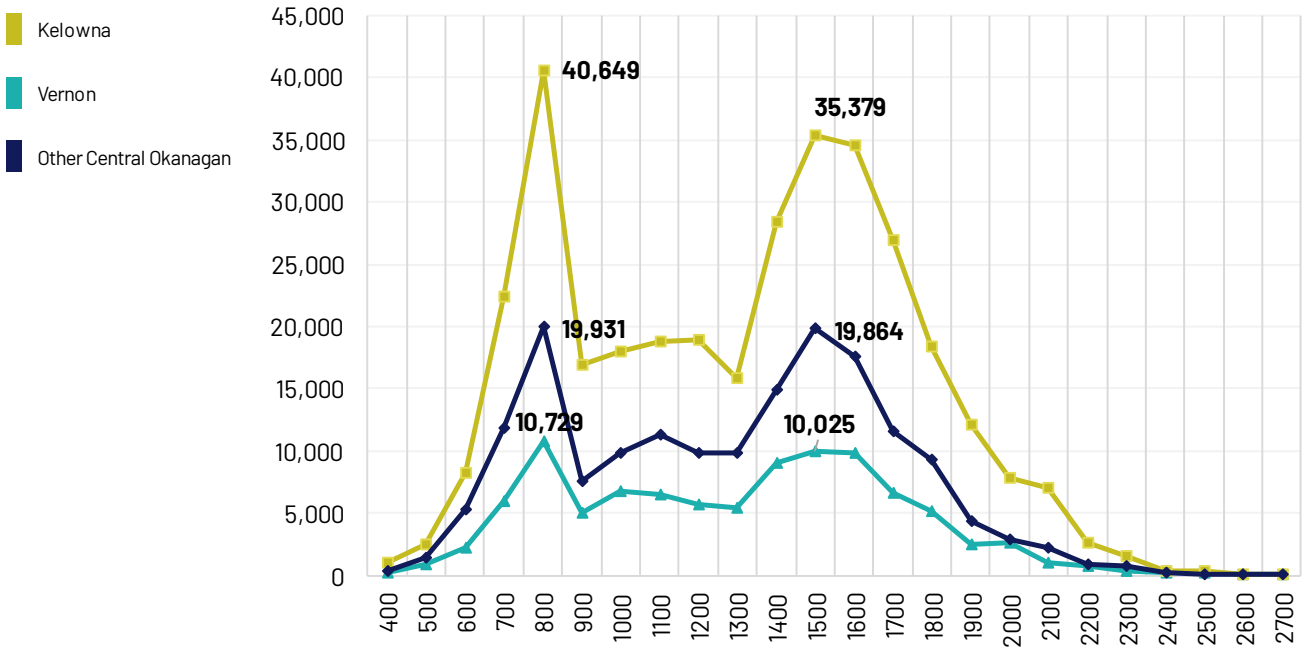


Exhibit - Figure 34. Trips by Start Hour – Vernon Residents (Expanded), 2007-2024

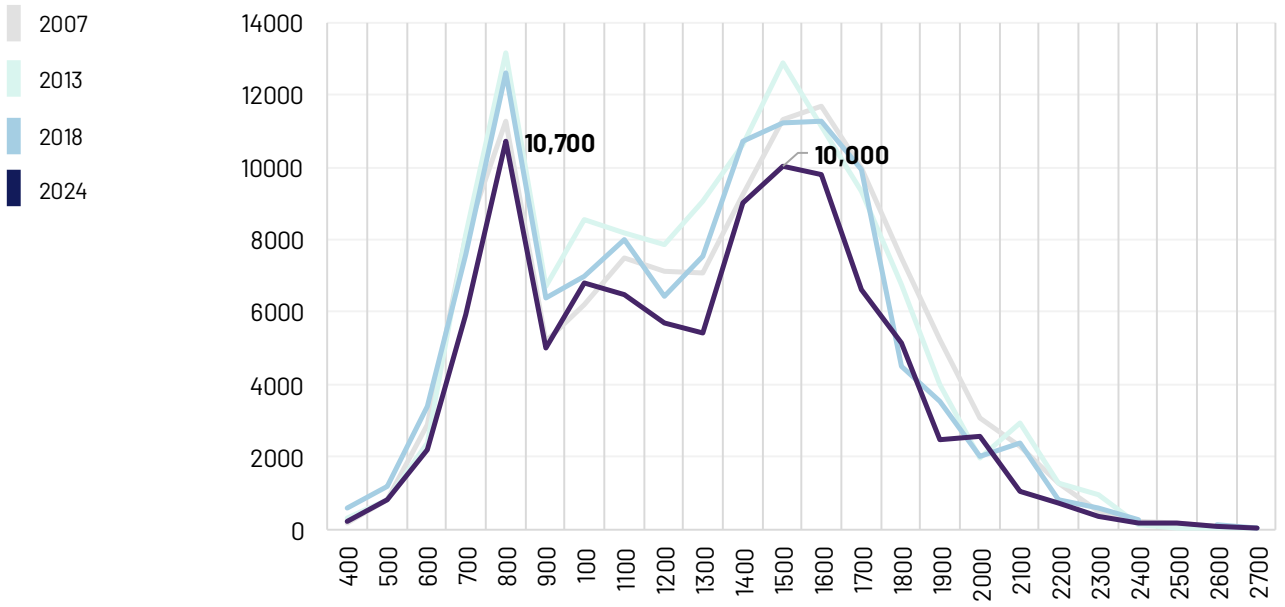


Exhibit - Figure 35. Trips by Start Hour – Kelowna Residents (Expanded), 2007-2024

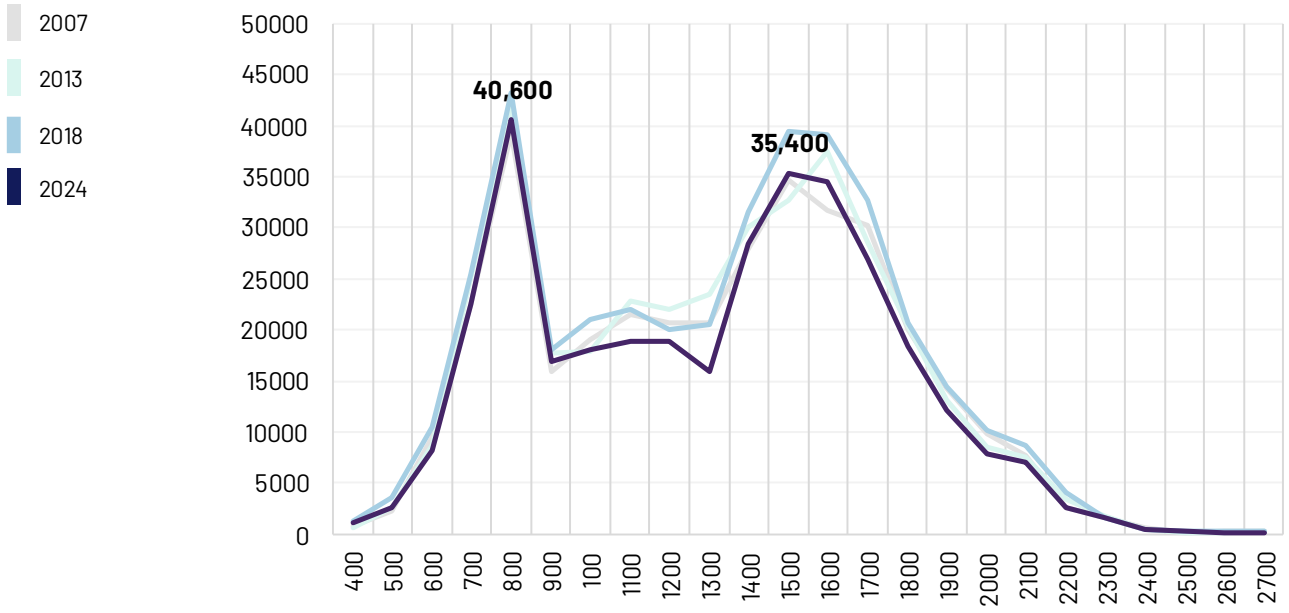
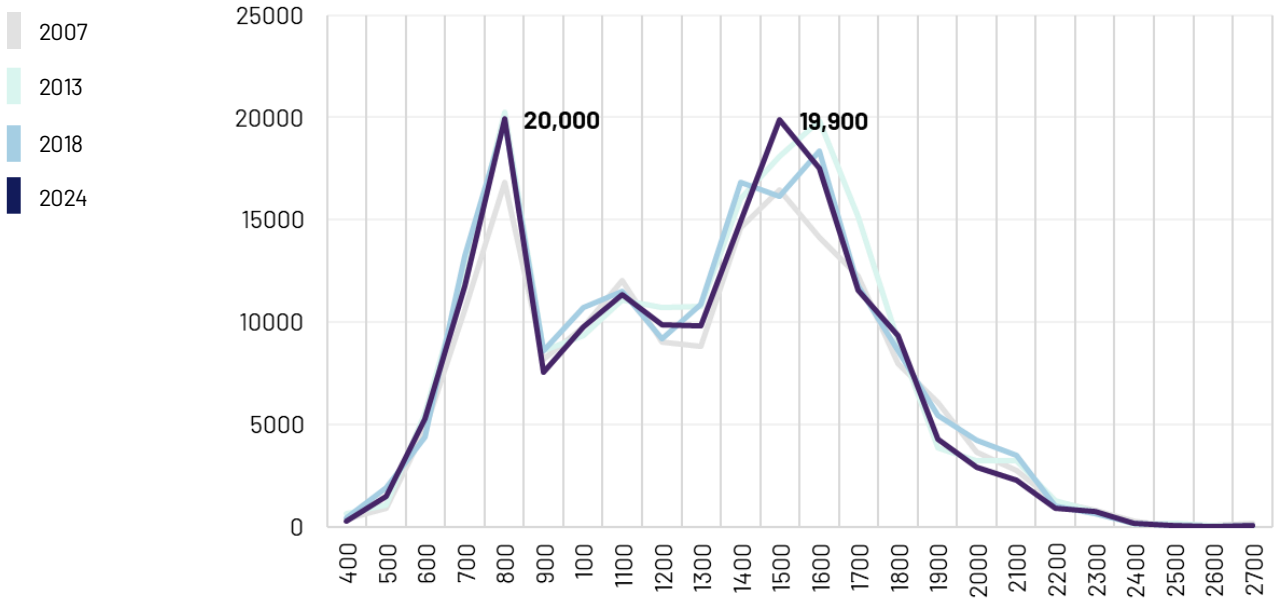


Exhibit - Figure 36. Trips by Start Hour – Other Central Okanagan Residents (Expanded), 2007-2024

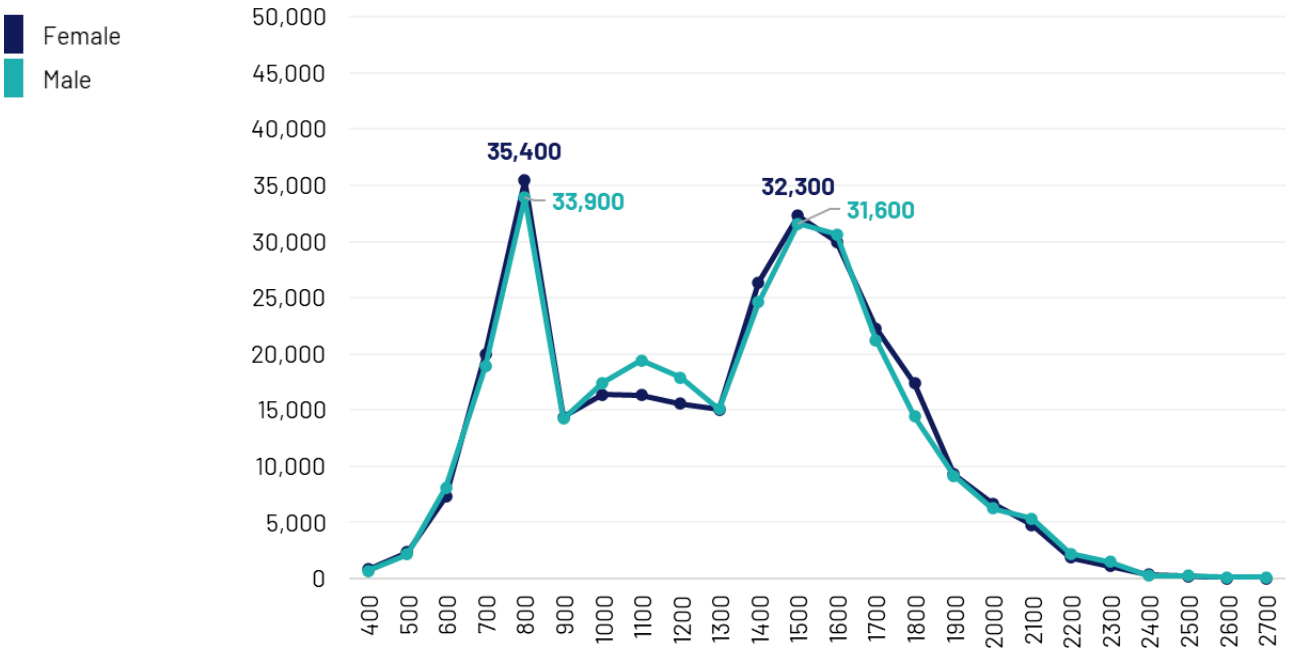


5.3.2 Trips by Start Hour by Gender and Employment Status

This section of the report provides a gender-based analysis of the pattern of trips by start hour to provide insights into different travel patterns and/or transportation choices among men and women.

Figure 37 below presents the distribution of trips by for men and women by time of day. As illustrated in **Section 5.2**, men have higher trip rates than women, on average. As shown below, while the profile of trips is nearly identical during the morning peak, it appears that males account for more of the total trips made between 9 AM and 1 PM. The distribution of trips then follows a similar profile for the remainder of the day, though trip volumes are slightly higher for women immediately following the close of business hours, from 5 PM to 7 PM.

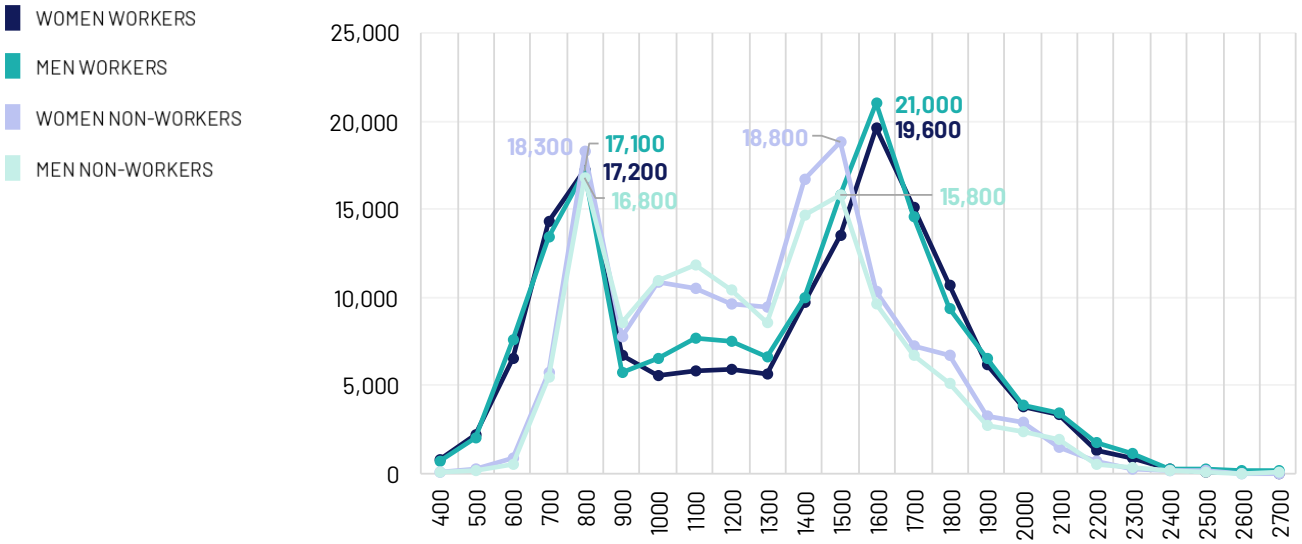
Exhibit - Figure 37. Trips by Start Hour by Gender (Expanded) - Study Area, 2024



To explore this further, the graph below illustrates the hourly trip volumes by gender but separated by workers and non-workers 18 years of age and above in order to remove trips of school-aged children. As shown, employment status appears to be a better predictor of travel patterns than gender. Working men and women follow a very similar pattern with more early morning and mid-evening trips than their non-working counterparts.

Similarly, non-workers of both genders show a nearly identical profile when it comes to morning trips, and generally follow a similar trend when it comes to reaching a second peak of trips slightly earlier in the afternoon. Trip volumes are higher during the inter-peak period (9 AM to 2 PM) for non-workers of both genders than their working counterparts; however, non-working men generally account for a larger volume of trips during this period than any other demographic. Non-workers then reach the second peak earlier in the afternoon than those who are working – reaching a peak at 3 PM compared with 4 PM among workers.

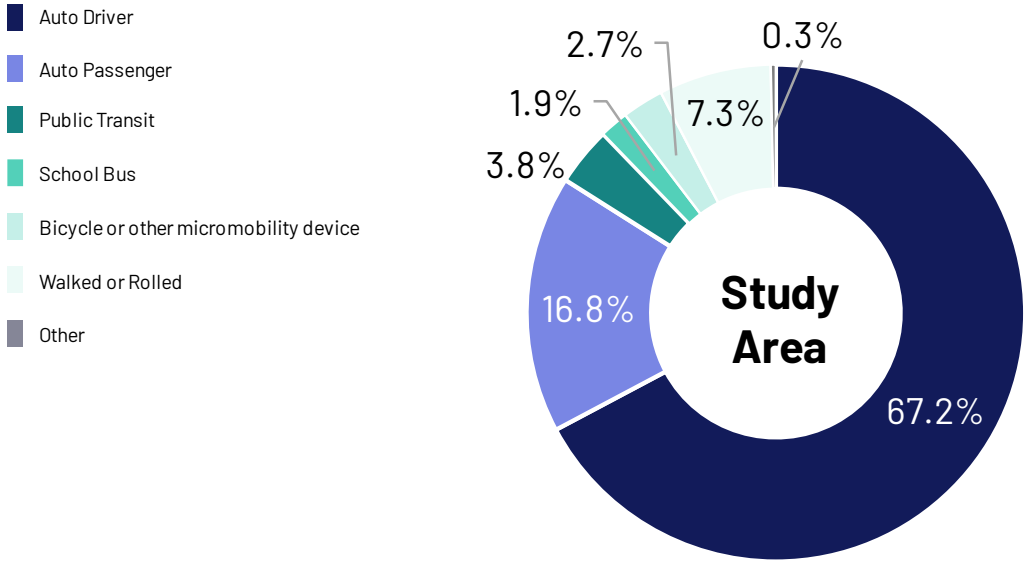
Exhibit - Figure 38. Trips by Start Hour by Gender by Work Status (Age 18+, Expanded) - Study Area



5.4 Primary Mode

The illustration below serves as an introduction to the mode shares captured in the 2024 survey. As presented below, automobile trips are the primary mode of transportation, with 67.2% of all trips being made by auto drivers and another 16.8% as auto passengers. Public transit accounts for nearly 4% of all trips, while active transportation accounts for 10% of trips (7.3% walked or rolled and 2.7% who used a bicycle or other micromobility device).

Exhibit – Figure 39. Daily Mode Shares – Study Area, 2024



5.4.1 Mode Shares by Sub-Area

The figure below depicts the mode share distribution in each sub-area, which generally follows the same pattern as the total study area.

As illustrated, Vernon has the highest walk mode share (9.1%) in the region, though transit and cycling is slightly below average (2.6% and 2.5% respectively). About two-thirds of all trips are via auto driver, with an additional 16.8% as auto passengers.

While similar to Vernon in that auto drivers accounts for approximately two-thirds of all trips, Kelowna residents have the highest reliance on transit (4.8% versus 3.8% on average) and cycling (3.6%).

Overall, Other Central Okanagan has the highest driving mode share, accounting for about 90% of residents' trips (71.4% auto driver and 18.4% auto passenger). Modes of active transportation including walking (3.9% and cycling (2.5%) are the lowest in the study area. Public transit accounts for 2.5% of trips, while travel by school bus is higher than the average for the study area (2.5% vs. 1.9%).

Exhibit – Figure 40. Mode Shares by Sub-Area, 2024

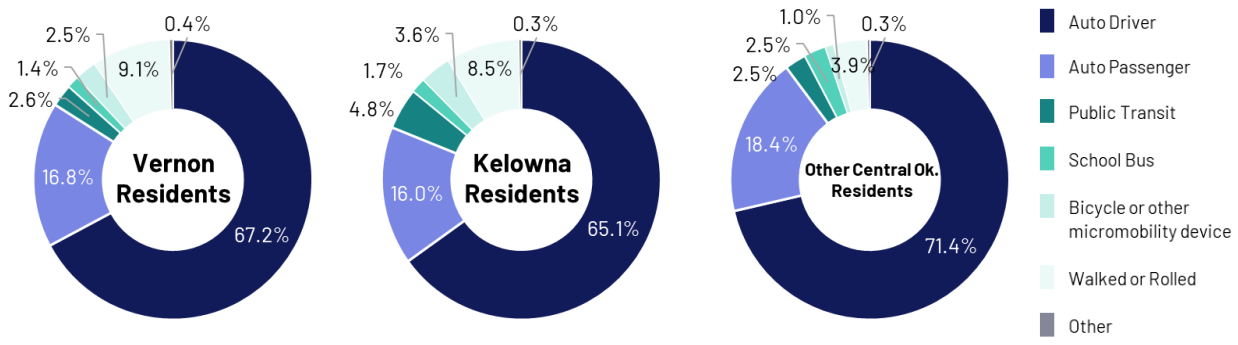
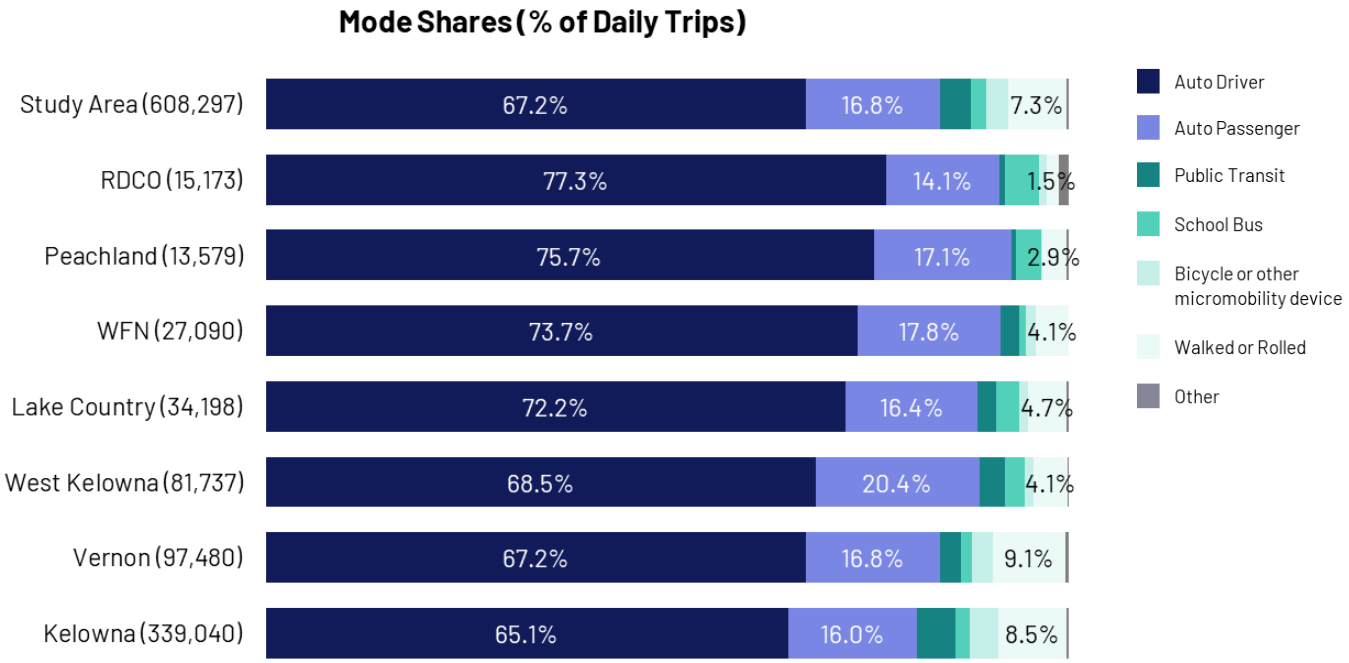


Figure 41 illustrates the mode share distribution by municipality. As shown, auto driver trips account for the highest mode share in RDCO (77.3%) and Peachland (75.7%) and the lowest in the more urban, densely populated Kelowna municipal sector (65.1%). Conversely, Vernon and Kelowna have the highest proportion of sustainable mode shares (public transit, bus, cycling or walking) compared with other municipalities in the region.

Exhibit – Figure 41. Mode Shares by Municipality, 2024



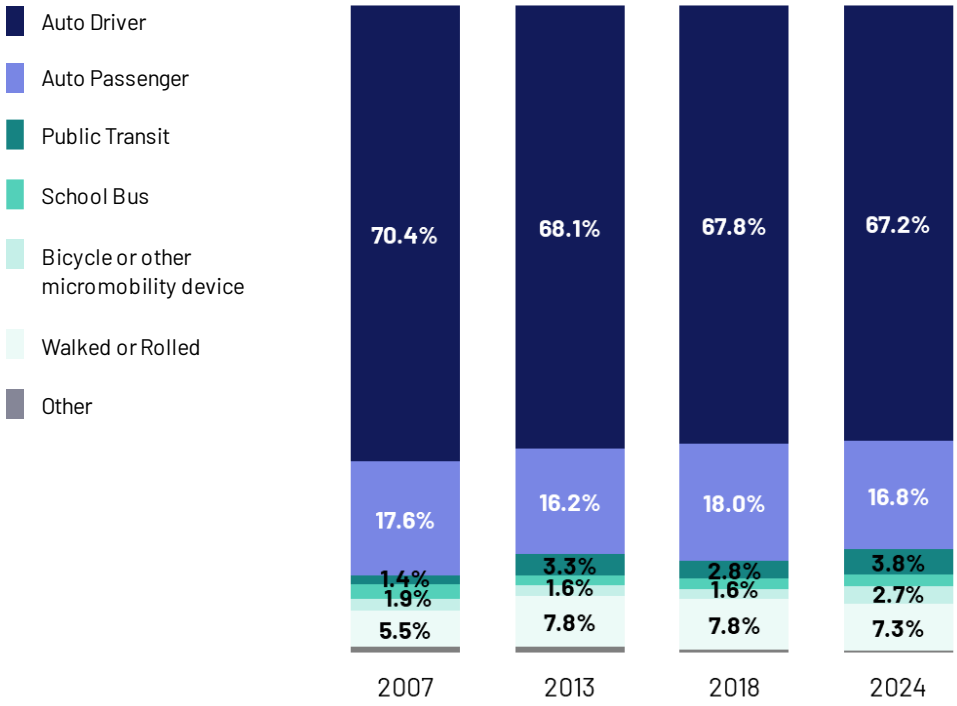
5.4.2 Mode Shares, 2007-2024

A comparison of the four survey cycles suggests the gradual trend towards more sustainable mode shares has continued in 2024 (see **Figure 42** below). Overall, auto driving's mode share saw a modest

decline from 67.8% in 2018 to 67.2% in 2024, while auto passenger declined from 18.0% to 16.8%. Meanwhile, use of public transit and cycling have both increased to the highest mode share observed over the last four cycles (3.8% and 2.7%, respectively). Walking has seen a slight decline since 2018 but remains above the 2007 baseline survey.

Tables 52 to 54 in the Appendix provide more detailed information on mode share by sub-area across the four survey cycles. While there is fluctuation in results between each survey, looking at the 17-year difference between the 2007 baseline and 2024 highlights some key behavioural shifts. Transit, walking and cycling have all increased since 2007 while usage of all other modes has declined.

Exhibit - Figure 42. Mode Shares – Study Area, 2007-2024



5.4.3 Interpreting Differences in Bicycle Mode Shares

The difference in bicycle mode shares by cycle may be due, at least in part, to differences in time frame and weather conditions for each of the surveys. The majority of the 2024 OTS surveys were completed in October, a month earlier than the majority of surveys for the 2018 cycle though similar to the 2013 cycle, while the 2007 baseline took place in the spring. Given all four survey cycles took place in transitional seasons, it is not surprising that there is some variability in temperatures and precipitation for each survey.

As seen in **Table 17** below, the mode share for cycling is highest in survey cycles with higher average temperatures (2.5% in 2013 with an average temperature of 6.1°C and 2.7% in 2024 with an average temperature of 8.8°C). Similarly, the mode share for cycling is lower in 2007 which was warmer but saw

heavier rain during the month with the most data collected, and in 2018 with the lowest average temperatures. As such, survey results for cycling should be interpreted with caution as it is more susceptible to seasonal and climatic differences than most other modes of transportation. Walking is also likely impacted to some degree by weather conditions.

It may be noted that the survey data on bicycle trips have not been validated against bicycle count statistics in the region. Longitudinal examination of the bicycle counts was outside the scope of this research but could provide useful context into the survey results and insight into trends in bicycle usage.

Exhibit - Table 17. Survey Time Periods and Temperature Norms, 2007-2024

Survey	Range of Travel Dates Surveyed	Average Daily Min-Max (Avg. Daily Temperature)	Monthly Precipitation	Bicycle Mode Share
2007	April 13 to May 18, 2007	April: 1.3°C to 15.5°C, avg. 8.4°C **May: 5.4°C to 20.0°C, avg. 12.8°C (most surveys)**	April: 29 mm **May: 40 mm**	1.9%
2013	Sept. 23 to Nov. 30, 2013 90% of surveys by 4 Nov	Sept: 8.4°C to 22.3°C, avg. 15.4°C **Oct: 0.6°C to 11.6°C, avg. 6.1°C (most surveys)** Nov: -2.5°C to 4.2°C, avg. 0.9°C	Sept: 70 mm **Oct: 29 mm**	2.5%
2018	Oct. 24 to Dec. 21, 2018 90% of surveys by 6 Dec	Oct: 0.3°C to 12.7°C, avg. 6.5°C **Nov: -0.8°C to 6.6°C, avg. 2.9°C (most surveys)** Dec: -3.1°C to 3.4°C, avg. 0.2°C	Oct: 29 mm **Nov: 26 mm**	1.6%
2024	Oct. 7 to Nov 8, 2024 98% of surveys by Nov 1	**Oct: 2.5°C to 15.0°C, avg. 8.8°C (most surveys)** Nov: -0.4°C to 6.5°C, avg. 3.1°C	**Oct: 22mm** Nov:19mm	2.7%

5.4.4 Sustainable and Active Mode Shares

Combining the results for sustainable and active modes of transportation provides another perspective on changes in mode share over time (see **Table 18** below):

- When aggregated, sustainable modes (transit, school bus, walking, and cycling) comprise a 15.7% mode share, which is a 4.7% increase from the 2007 baseline.
- Looking at just active modes (walking and cycle) illustrates that when combined, these modes comprise a 10.0%, which is a 2.7% increase since 2007.

The overall increases in sustainable and active mode shares since 2007 are a positive trend. It should be noted that the most substantial increase occurred in the earlier survey cycles from 2007 to 2013. However, there have been modest increases between 2018 and 2024 across all sub-areas, with the exception of a slight decline in active mode shares in Other Central Okanagan during this period.

As noted elsewhere, results between each survey cycle should be interpreted with some degree of caution due to differences potentially arising from random sampling error or methodological

differences. Additionally, sustainable and active mode shares are particularly susceptible to changes in weather. As illustrated in Section 5.4.3, most of the 2024 data was collected in October 2024 which had higher average temperatures than previous survey cycles, and lower precipitation.

Additionally, as will be discussed in Section 5.4.6, cycling as a mode share was highest among those between the ages of 25 and 34, which is also the age group that has seen one of the biggest increases in population since 2018. Taken in sum, the results are a net positive for the region.

Exhibit - Table 18. Sustainable and Active Mode Shares (Expanded) – by Sub-Area, 2007-2024

	Trips				% Change in # of Trips			
Primary Mode	2007	2013	2018	2024	'07-'13 6-Year Δ	'13-'18 5-Year Δ	'18-'24 6-Year Δ	'07-'24 17-Year Δ
Sustainable Modes (Transit Bus + School Bus + Bicycle + Walk)								
Study Area	69,800	102,000	93,900	95,313	+46.1%	-8.0%	1.5%	+36.6%
Vernon	13,300	17,500	16,500	15,219	+31.2%	-5.6%	-7.7%	+14.4%
Kelowna	43,000	66,300	60,500	63,041	+54.2%	-8.8%	4.2%	+46.6%
Other Central Ok.	13,500	18,200	16,900	17,053	+34.9%	-7.1%	0.9%	+26.3%
Active Modes (Bicycle + Walk)								
Study Area	46,600	69,700	64,100	60,734	+49.5%	-8.0%	-5.3%	+30.3%
Vernon	9,300	14,400	13,300	11,302	+53.8%	-7.6%	-15.0%	+21.5%
Kelowna	31,000	46,000	41,100	40,931	+48.3%	-10.6%	-0.4%	+32.0%
Other Central Ok.	6,200	9,300	9,700	8,502	+49.2%	3.8%	-12.4%	+37.1%

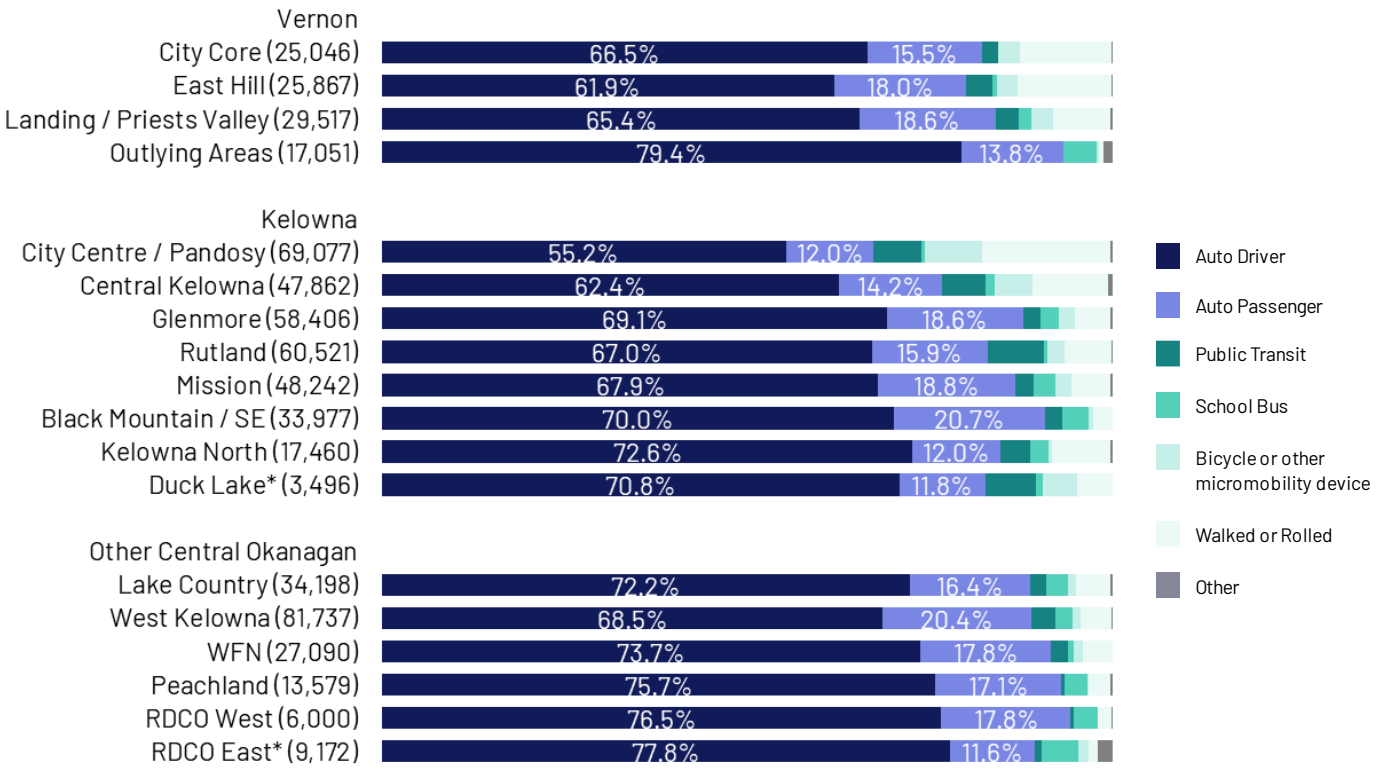
Exhibit - Table 19. Sustainable and Active Mode Shares – by Sub-Area, 2007-2024

	Mode				%-Pt Change			
Primary Mode	2007	2013	2018	2024	'07-'13 6-Year Δ	'13-'18 5-Year Δ	'18-'24 6-Year Δ	'07-'24 17-Year Δ
Sustainable Modes (Transit Bus + School Bus + Bicycle + Walk)								
Study Area	11.0%	15.1%	13.7%	15.7%	+4.1%	-1.4%	+2.0%	+4.7%
Vernon	11.2%	13.8%	14.0%	15.6%	+2.5%	+0.2%	+1.6%	+4.4%
Kelowna	12.2%	18.1%	15.5%	18.6%	+5.9%	-2.5%	+3.1%	+6.4%
Other Central Ok.	8.3%	10.0%	9.5%	9.9%	+1.7%	-0.5%	+0.4%	+1.6%
Active Modes (Bicycle + Walk)								
Study Area	7.3%	10.3%	9.4%	10.0%	+3.0%	-0.9%	+0.6%	+2.7%
Vernon	7.8%	11.3%	11.2%	11.5%	+3.4%	0.0%	+0.4%	+3.8%
Kelowna	8.8%	12.5%	10.6%	12.1%	+3.7%	-1.9%	+1.5%	+3.3%
Other Central Ok.	3.9%	5.1%	5.4%	5.0%	+1.3%	+0.3%	-0.5%	+1.1%

5.4.5 Mode Shares by District of Residence

The chart below highlights the variation in mode shares by district within each sub-area (**Figure 43**). The figures in brackets on the right indicate the expanded number of trips made by residents of each district.

Exhibit - Figure 43. Mode Shares (% of Daily Trips) - by District, 2024



5.4.6 Mode Shares by Age Group

The figures below illustrate mode shares by age group. Results have again been aggregated into ten-year ranges with the exception of younger age groups under the age of 24 where more variation may be observed due to life stage, as well as lower population age ranges over 75 years. The survey results reveal the following:

- Cycling mode shares are highest for those between the ages of 25 to 34 years and 16 to 17 year olds (4.1% and 3.2%, respectively).
- Amongst 18 to 24 year olds, there is heightened reliance on transit and a decline in walking or cycling. For this age group, auto driver becomes a dominant mode of transportation with reliance on being a passenger.

- While auto driver trips are the dominant mode of transportation for those over the age of 18, the highest reliance is among 35 to 54 year olds (ranging from 82% to 84%), while auto passenger trips drop to 5.7% among those ages 35 to 44 specifically.
- The majority of trips made by those 5 to 15 years of age are as auto passengers, and at least 15% walk share which is the highest for any age group. Older children and youth (10 to 15 years) are more likely to use the school bus than younger children ages 5-9 (15.0% and 8.5%, respectively).
- Reliance on auto driver trips begins to decline at age 65 (dropping from 79% for 65 to 74 year olds to 72% for those 75+, with increased mode share as an auto passenger as well as modest increases in public transit, walking and cycling.

Exhibit – Figure 44. Mode Share Changes by Age, 2007-2024

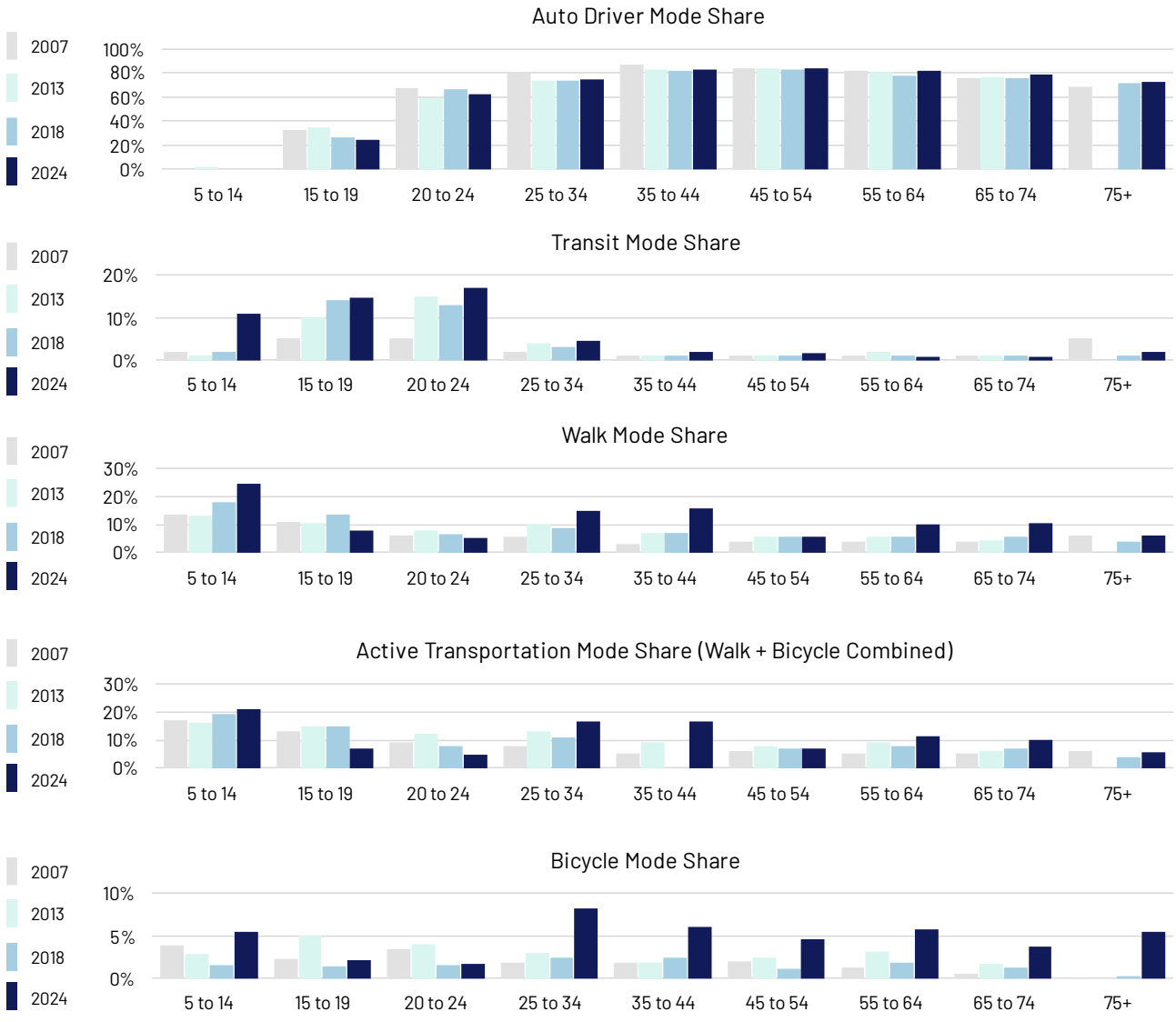


Exhibit - Table 20. Estimated Daily Volume of Trips by Mode by Age Group – Study Area, 2024

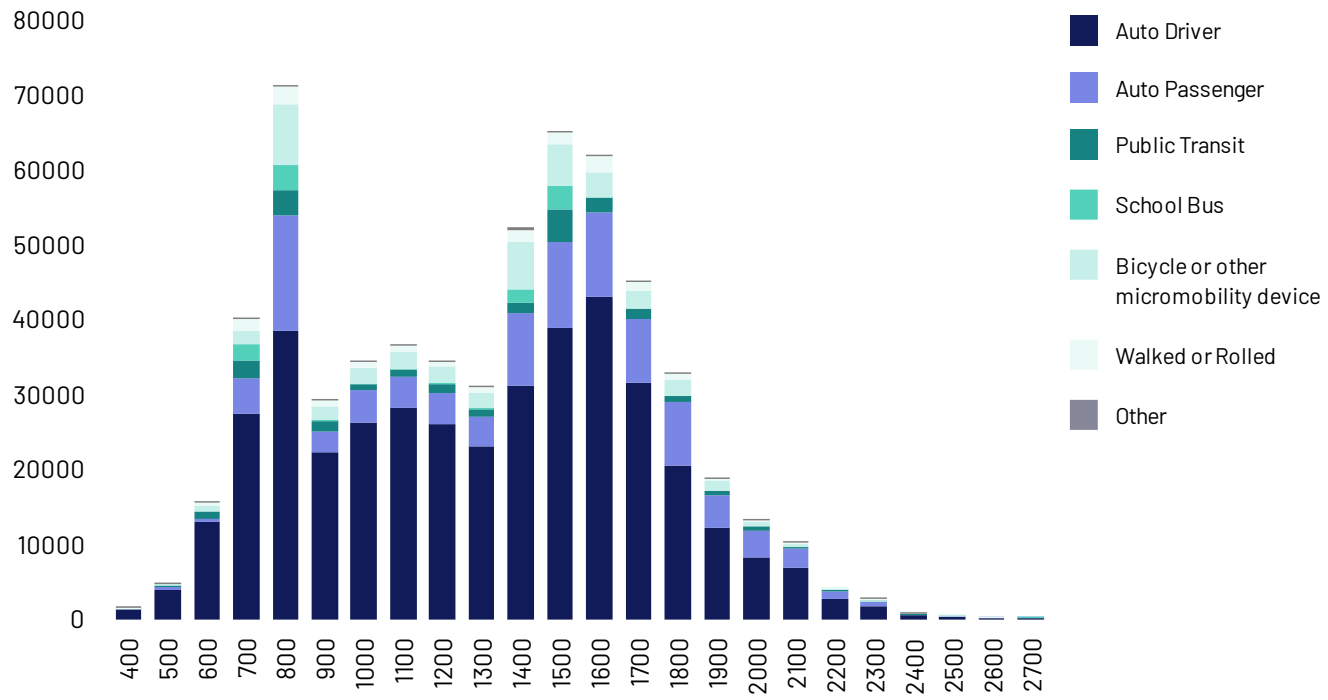
Age	Total Trips	Auto Driver	Auto Passenger	Transit Bus	School Bus	Walked	Bicycle	Other
Survey Total	608,298	408,854	102,095	23,190	11,388	44,365	16,369	2,037
5 to 9 years	32,224	-	23,011	191	2,747	5,362	688	225
10 to 15 years	44,460	-	25,028	4,511	6,668	6,852	1,366	34
16 to 17 years	14,331	3,494	4,941	2,124	1,854	1,464	454	-
18 to 24 years	40,025	24,782	4,695	6,791	87	3,021	641	9
25 to 34 years	87,385	65,533	7,480	3,997	-	6,589	3,560	226
35 to 44 years	107,021	88,359	6,133	2,175	32	6,868	3,235	218
45 to 54 years	75,073	63,224	6,344	1,163	-	2,422	1,739	181
55 to 64 years	87,902	71,542	8,562	744	-	4,384	2,486	183
65 to 74 years	77,120	60,969	8,744	728	-	4,702	1,394	583
75+ years	42,758	30,951	7,157	767	-	2,700	806	377

5.4.7 Trip Mode by Start Hour

Figure 45 illustrates the hourly distribution of trips by mode. As shown, auto driver trips are the dominant mode for every hour of the day. During the morning peak hour at starting at 8 AM, there are approximately 38,600 auto driver trips. However, proportionately, auto driver trips comprise only 54% of all trips during that hour (vs. the 24-hour average of 69%) since auto passenger, transit bus, school bus, walking, and cycling trips either peak or are at near their daily peak during in this hour. The highest volume of auto driver trips (43,000) is in the hour starting at 4 PM. Auto passenger trips peak at 15,350 during the hour starting at 8 AM, as does walking (8,100 trips), cycling (2,300 trips), and school bus (3,300 trips).

Transit mode shares are the greatest between 6 AM and 9 AM, with volumes ranging from 900 trips at 6 AM to about 3,400 at 8 AM, and again at 3 PM (about 4,200 trips). Cycling trips are highest in the two hours between 7 AM and 9 AM (1,400-2,300 trips each hour) and again between 2 PM and 5 PM (1,200-2,200 trips each hour), with volumes of 600 to 800 trips per hour between 9 AM and 1 PM. As noted earlier, cycling volumes may be impacted by the time of year in which the survey data was collected (October 8 through November 7).

Exhibit - Figure 45. Trips by Mode by Start Hour – Study Area, 2024



5.5 Trip Purpose

Trips to work and work-related destinations account for approximately 14% of all trips, followed by shopping at 11%, recreation (6%) and personal business such as going to the doctor or bank at 5%. Trips for social purposes or to dine out account for about 5% altogether. Trips to school account for a little under 7% of trips, while trips to serve passengers (pick-up or drop-off) account for about 7% (with many of these being to school or work destinations for other household members). Of the total, nearly two-fifths (39%) of trips are turning home from the various destinations.

The patterns for the three sub-areas all have a very similar profile (**Table 21**), with a few variations. Vernon residents make proportionately fewer trips to serve passengers, to attend K-12 school or for work-related purposes which aligns with the older age cohorts in this community. Meanwhile, Kelowna residents have more work and post-secondary related trips. Other Central Okanagan has the highest share of work-related and K-12 school trips than those in other areas, which could be a reflection of the larger household sizes in this community (suggesting more families with children).

Exhibit - Figure 46. Trips Purposes – Study Area, 2024

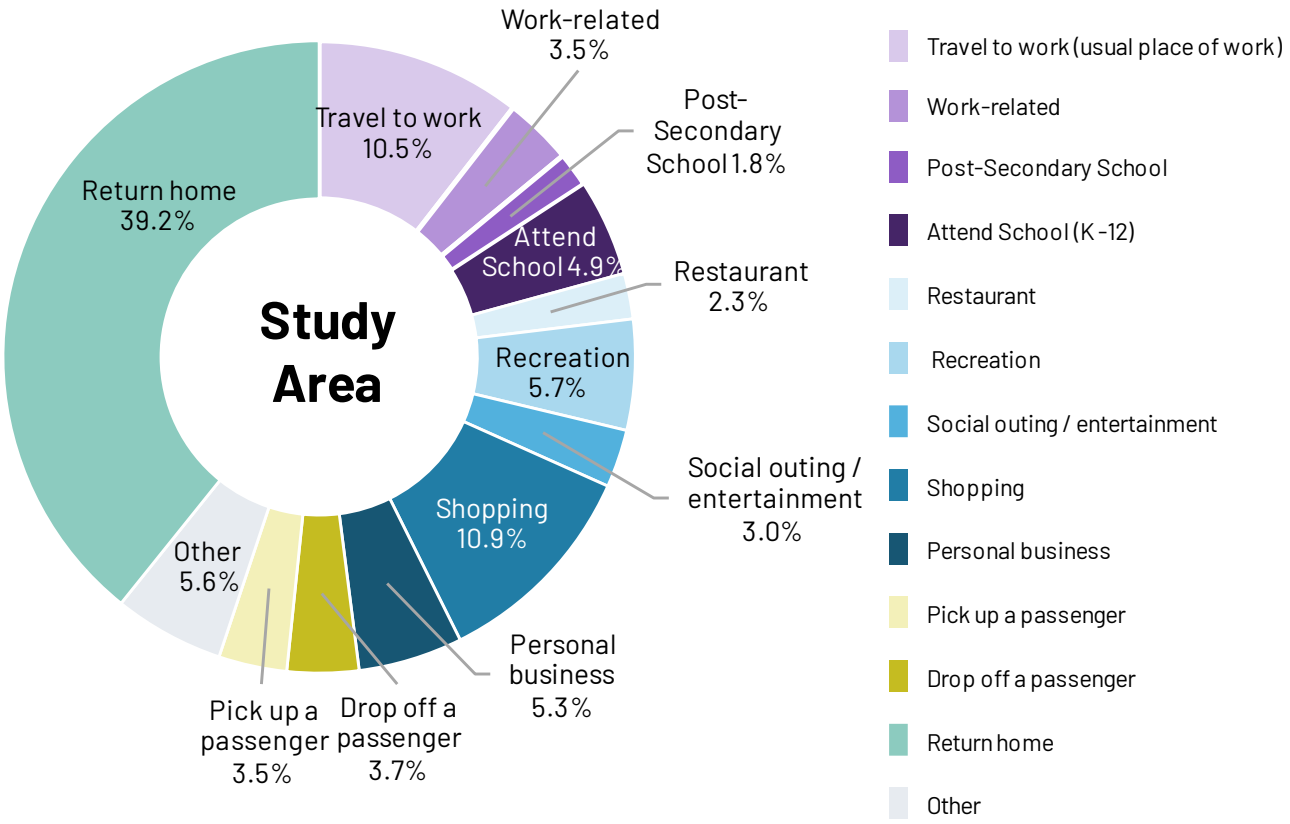


Exhibit - Table 21. Trips Purposes (Trips and % of Trips) by Sub-Area, 2024

	Total	To Usual Work	Work Related	To Post-Sec	To K-12 School	Restau-rant	Recrea-tion	Social	Shop	Personal Business	Pick Up	Drop Off	Other	Return Home
Daily Trips														
Study Area	608,298	64,045	21,165	10,859	30,095	14,212	34,427	18,013	66,572	32,454	22,287	21,230	34,350	238,588
Vernon	97,480	10,184	2,643	1,286	4,037	2,366	5,586	2,968	11,415	5,611	3,117	3,094	6,954	38,221
Kelowna	339,041	36,501	11,676	7,430	16,841	8,265	19,581	10,161	35,650	16,738	13,062	11,981	17,532	133,622
Other Central Ok.	171,777	17,360	6,846	2,144	9,217	3,581	9,260	4,884	19,507	10,105	6,107	6,155	9,864	66,745
% of Trips														
Study Area	100%	10.5%	3.5%	1.8%	4.9%	2.3%	5.7%	3.0%	10.9%	5.3%	3.7%	3.5%	5.6%	39.2%
Vernon	100%	10.4%	2.7%	1.3%	4.1%	2.4%	5.7%	3.0%	11.7%	5.8%	3.2%	3.2%	7.1%	39.2%
Kelowna	100%	10.8%	3.4%	2.2%	5.0%	2.4%	5.8%	3.0%	10.5%	4.9%	3.9%	3.5%	5.2%	39.4%
Other Central Ok.	100%	10.1%	4.0%	1.2%	5.4%	2.1%	5.4%	2.8%	11.4%	5.9%	3.6%	3.6%	5.7%	38.9%

5.5.1 Trip Purposes, 2007-2018

The table below highlights trends in trip purposes over time (**Table 22**). Given that there may have been differences in how trips recorded as 'other purpose' were treated or recoded in the data processing, some of the year-over-year comparisons may be difficult to interpret for discretionary trip purposes (such as recreation, social, and personal business). Readers are reminded that some fluctuations between survey cycles may be the product of random sampling or differences in methodology. Nevertheless, some trends do emerge with respect to work and school purposes:

- Overall, from 2007 to 2024, the total number of trips to work or for work-related purposes have declined (a 24% decrease over the past 17 years despite an increase in working-age population over this time period). A decline in the number of work trips was also observed in 2018 survey results but the decline has since accelerated. As previously discussed, this may be due to shifts in flexible work arrangements that became normalized during the pandemic. This statistic will be useful to track in future surveys as return to work mandates become more common and the nature of work continues to evolve.
- The overall number of school trips has increased 23% over 17 years. This is consistent with the population growth in school-age children and youth in recent years.

Exhibit - Table 22. Trips Purposes (Trips and % of Trips), 2007-2024

	Total	To Usual Work	Work Related	To Post-Sec	To K-12 School	Restau-rant	Recrea-tion	Social	Shop	Personal Business	Pick Up	Drop Off	Other	Return Home
Trips														
2007	634,200	112,700		33,300*		22,600	28,900	24,000	75,000	36,800	52,600		28,800	219,500
2013	675,900	101,700		10,200	26,400	19,400	34,600	33,500	75,200	53,800	55,600		24,000	241,600
2018	684,800	104,700		10,100	28,200	24,200	32,100	35,700	79,700	55,100	57,100		1,900	256,000
2024	608,298	64,045	21,165	10,859	30,095	14,212	34,427	18,013	66,572	32,454	22,287	21,230	34,350	238,588
% Change in Trips														
'07-'13	+7%	-10%		+10%*		-14%	+20%	+40%	0%	+46%	+6%		-16%	+10%
'13 -'18	+1%	+3%		-1%	+7%	+25%	-7%	+6%	+6%	+3%	+3%		-92%**	+6%
'18 -'24	-11%	-19%		+8%	+7%	-41%	+7%	-50%	-16%	-41%	-24%		1708%	-7%
'07 -'24	-4%	-24%		+23%		-37%	+19%	-25%	-11%	-12%	-17%		+19%	+9%
% of Trips														
2007	100%	18%		5%		4%	5%	4%	12%	6%	8.3%		5%	35%
2013	100%	15%		2%	4%	3%	5%	5%	11%	8%	8.2%		4%	36%
2018	100%	15%		2%	4%	3%	5%	5%	12%	8%	8.3%		0%	37%
2024	100%	14%		2%	5%	2%	6%	3%	11%	5%	7.2%		6%	39%
% Pt Change in Share of Trips														
'07 -'13		-3%		+0%*		-1%	+1%	+1%	-1%	+2%	-0%		-1%	+1%
'13 -'18		+0%		0%	+0%	+1%	-0%	+0%	+1%	+0%	+0%		-3%	+2%
'18 -'24		-1%		+0%	+1%	-1%	+1%	-2%	-1%	-3%	-1%		+5%	+2%
'07 -'24		-4%		+1%		-1%	+1%	-1%	-1%	-1%	-1%		+1%	+5%

5.5.2 Trend in Daily Number of People with Work Commutes

Given the overall decrease in trips to work or for work-related purposes, it is of interest to focus in on whether the number of workers travelling to or for work has changed similarly. As illustrated in **Figure 47,** the number of full-time workers has grown 24% in the 6 years since 2018, while the number of full-time workers who took at least one work trip (to work or for a work-related purpose) has declined by a similar proportion (23%) over this same time period.

Overall, half (49%) of full-time workers reported a work trip on their travel day. This is a 29% decrease since 2018 and the baseline survey. A similar trend emerges for part-time workers. The number of part-time workers has seen a slight decline of 1% since 2018, but a 44% decline in reporting at least one trip to work during this same time period. More detailed results can be found in **Table 56** and **Table 57** in the Appendix.

Exhibit – Figure 47. Total Number of Workers with at Least One Work Trip (Expanded), 2007-2024

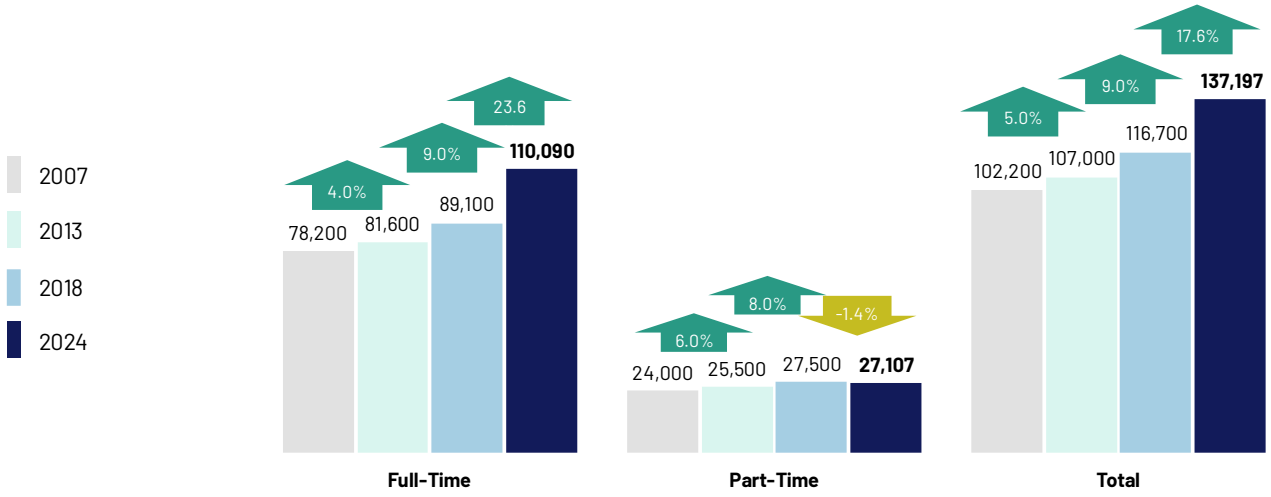


Exhibit – Figure 48. Workers with at Least One Work Trip (Expanded), 2007-2024

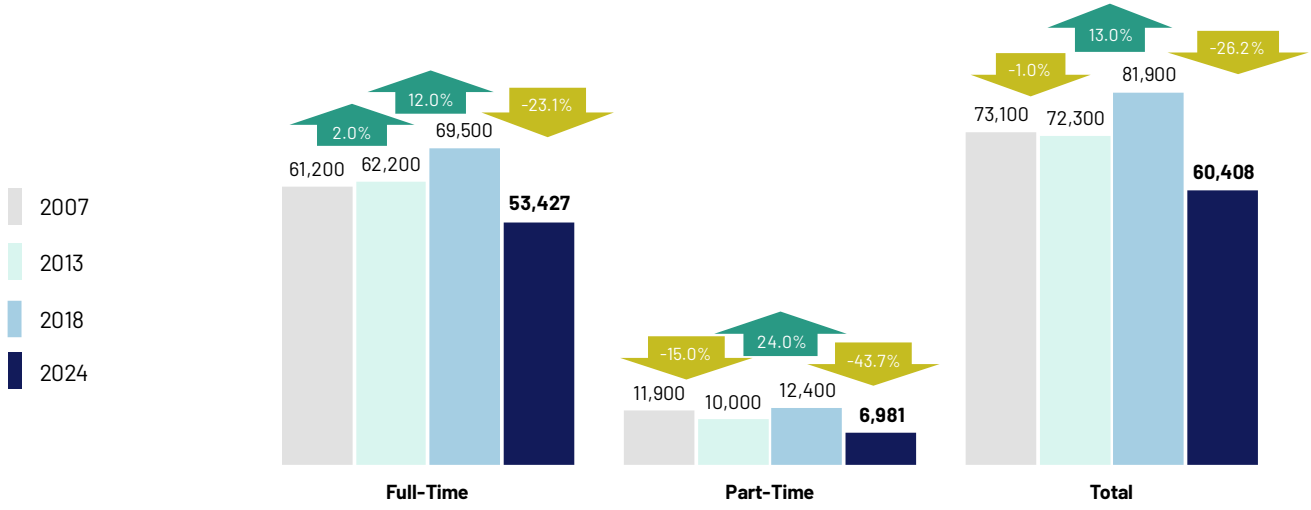
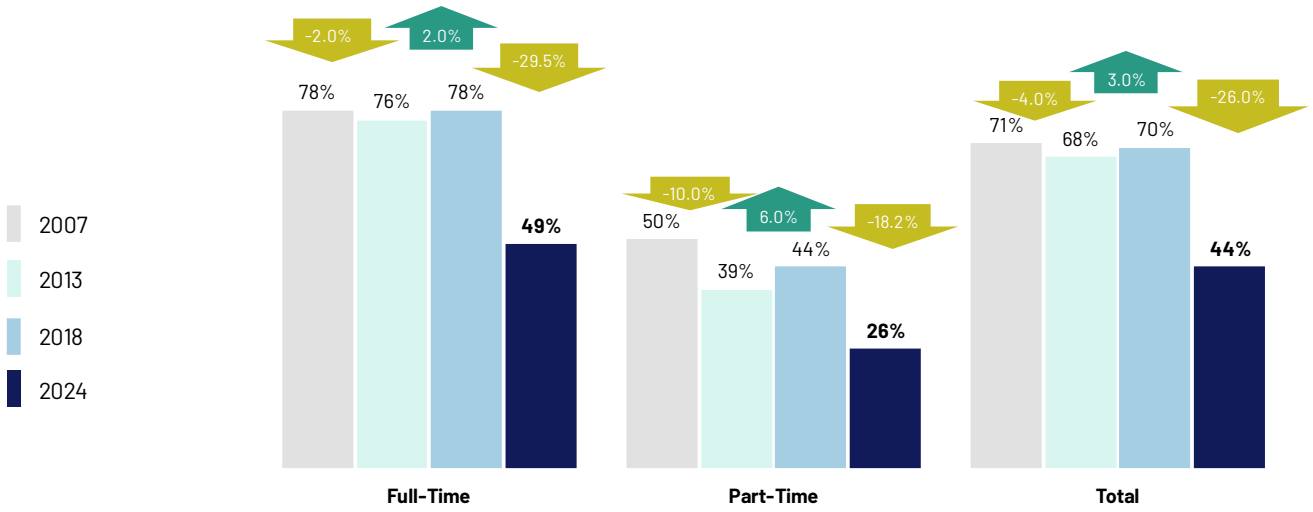


Exhibit – Figure 49. Share of Workers with at Least One Work Trip, 2007-2024

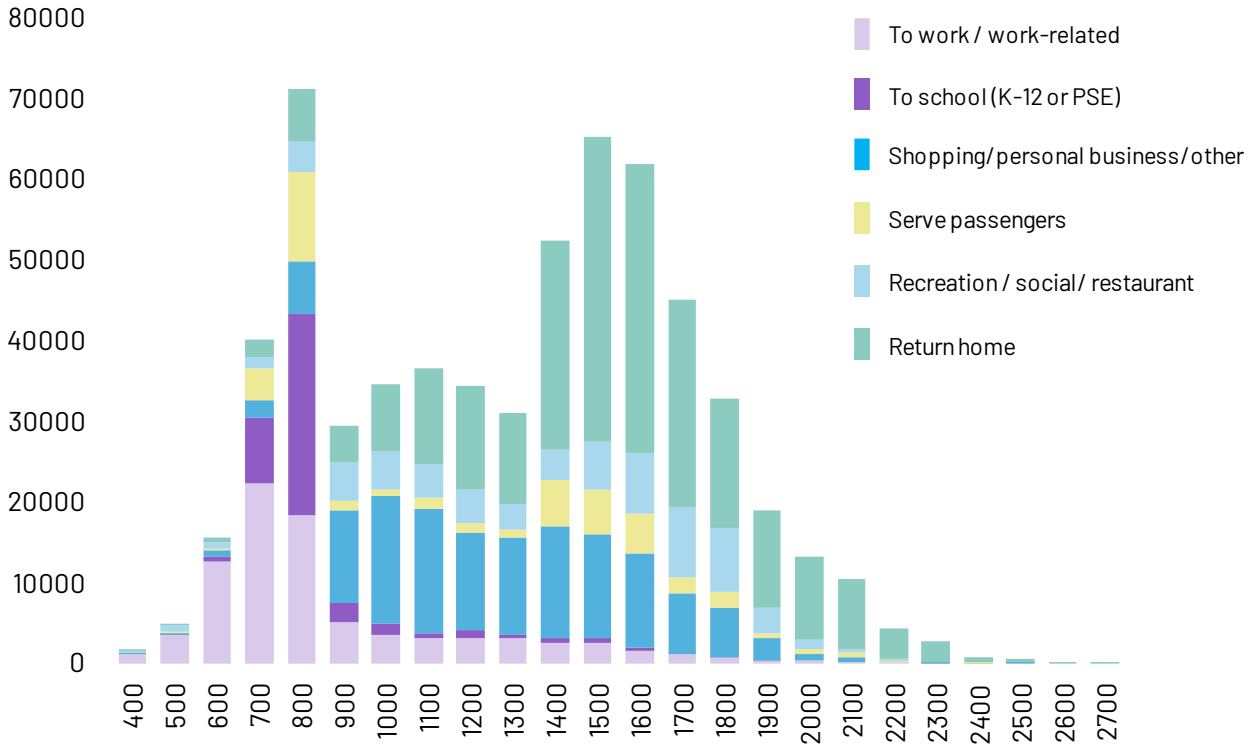

2007
2013
2018
2024
-2.0%
2.0%
-29.5%
78%
76%
78%
49%
Full-Time
-10.0%
6.0%
-18.2%
50%
39%
44%
26%
Part-Time
-4.0%
3.0%
-26.0%
71%
68%
70%
44%
Total

5.5.3 Trip Purpose by Start Hour

Figure 50 illustrates the distribution of trip purposes by time of day (based on the time of departure). provides another view of daily trips, illustrating the distribution of trip purposes by time of day (by one-hour interval based on the time of departure). Some trip purposes have been grouped to reduce the number of categories displayed in the chart.

The profile presents an AM peak between 7 AM and 9 AM which is dominated by work and school related trips, as well as dropping off passengers. The inter-peak period between 9 AM and 2 PM is primarily made up of shopping, personal business or other trips, with some recreation and work-related trips. The PM peak begins to build at 2 PM and is dominated by trips returning home and shopping or personal business trips. Trips returning home are the primary purpose for travelling for the remainder of the day.

Exhibit – Figure 50. Trips by Grouped Purposes by Start Hour – Study Area, 2024



5.5.4 Mode Shares by Trip Purpose

Mode shares and volumes by trip purpose are presented in the following two tables **(Table 23** and **Table 24)**. As illustrated, driving accounts for the vast majority of trips to or for work, with auto driver for nearly all, suggesting these are primarily single-passenger vehicles. Transit as a mode share is highest for those commuting to post-secondary school (29%), although the majority of trips for post-secondary students involve driving. The school bus and walking are important modes of travel for Kindergarten to Grade 12 commutes, though about half of trips to school are as an auto passenger. More detailed information about trips to school can be found in **Section 5.10.**

Exhibit - Table 23. Mode Shares by Trip Purpose (Expanded) – Study Area, 2024

Trip Purpose	Total Trips	Auto Driver	Auto Passenger	Transit Bus	School Bus	Walked	Bicycle	Other
Total Trips	608,298	67.2%	16.8%	3.8%	1.9%	7.3%	2.7%	0.3%
To usual work	64,045	81.3%	3.9%	4.0%	0.1%	5.3%	5.2%	0.2%
Work related	21,165	88.5%	3.5%	2.9%	0.0%	2.3%	2.1%	0.6%
To post-secondary	10,859	48.0%	12.6%	28.6%	1.7%	7.9%	1.1%	0.1%
To K-12 school	30,095	2.3%	49.1%	9.4%	18.5%	17.1%	3.3%	0.2%
Restaurant	14,212	65.0%	23.3%	1.3%	0.0%	7.8%	2.3%	0.2%
Recreation	34,427	60.3%	21.9%	1.2%	0.3%	11.5%	4.4%	0.4%
Social	18,013	58.9%	26.2%	4.4%	0.0%	9.0%	0.9%	0.7%
Shopping	66,572	77.0%	14.9%	1.5%	0.0%	5.1%	1.3%	0.2%
Personal Business	32,454	75.3%	16.2%	1.6%	0.0%	4.9%	1.5%	0.6%
Pick Up passenger	21,230	86.1%	8.9%	0.4%	0.0%	3.2%	1.3%	0.1%
Drop Off passenger	22,287	83.8%	12.1%	0.3%	0.2%	2.2%	1.3%	0.1%
Other	34,350	66.4%	16.3%	3.2%	1.9%	9.7%	1.2%	1.3%
Return home	238,588	65.4%	17.5%	4.2%	2.0%	7.7%	3.0%	0.2%

Exhibit - Table 24. Estimated Daily Volume of Trips by Mode by Trip Purpose (Expanded) – Study Area, 2024

	Total Trips	Auto Driver	Auto Passenger	Transit Bus	School Bus	Walked	Bicycle	Other
Total Trips	608,298	408,854	102,095	23,190	11,388	44,365	16,369	2,037
To usual work	64,045	52,079	2,519	2,541	32	3,424	3,333	117
Work related	21,165	18,737	750	615	0	494	448	120
To post-secondary	10,859	5,207	1,372	3,109	187	856	119	9
To K-12 school	30,095	696	14,770	2,844	5,563	5,157	1,004	61
Restaurant	14,212	9,240	3,316	190	0	1,110	323	33
Recreation	34,427	20,760	7,533	428	99	3,949	1,508	150
Social	18,013	10,608	4,721	791	0	1,613	163	118
Shopping	66,572	51,245	9,902	997	13	3,377	877	162
Personal Business	32,454	24,429	5,258	503	0	1,590	472	201
Pick Up passenger	21,230	18,274	1,896	80	0	680	269	31
Drop Off passenger	22,287	18,684	2,687	77	41	499	282	18
Return home	238,588	156,076	41,788	9,919	4,788	18,301	7,157	560
Other	34,350	22,820	5,583	1,095	664	3,316	414	456

5.5.5 Home-Based Trip Purposes

This section will now examine trips from a different perspective – considering the overall purpose of the trip when looking at both the origin and destination. The following four 'home-based purpose' categories take into account both the origin and destination location or purpose:

- Home-based work (HBW): A trip to work or work-related trip with home as the origin or destination
- Home-based school (HBS): A trip to school (K-12 or PSE) with home as the origin or destination
- Home-based other (HBO): A discretionary trip (e.g., shopping, errands, personal business) with home as the origin or destination
- Non-home based (NHB): A trip that does include home as the origin or destination (e.g., travelling directly to the grocery store from work without stopping at home first).

Table 25 presents the trip distributions for each of the sub-areas in 2024, while **Table 26** illustrate the change across the study area since 2007. Overall, HBW trips account for 20% of all trips, while HBS accounts for nearly half that (11%). Similar to previous survey cycles, HBO is the largest category at 47%, rising to 50% among those residing in Vernon. Approximately 1 in 5 trips are NHB (trips not involving home).

Since the baseline survey in 2007, the volume of HBW and NHB trips appears to have declined, which aligns with results presented earlier. With a higher proportion of workers now working from home, there are fewer add-on trips, such as running errands after work or stopping for dinner on the way home. The volume of HBS and HBO trips has grown during this same time period as there is generally less flexibility for these types of activities.

Exhibit - Table 25. Home-Based Trip Purposes (Expanded), 2024

	Study Area	Vernon	Kelowna	Other Central Okanagan
Total Trips	**608,298**	**97,480**	**339,041**	**171,777**
# of Trips				
HBW	121,541	18,618	68,746	34,178
HBS	69,243	8,871	41,826	18,547
HBO	286,425	48,838	157,038	80,549
NHB	131,088	21,154	71,432	38,503
% of Trips				
HBW	20.0%	19.1%	20.3%	19.9%
HBS	11.4%	9.1%	12.3%	10.8%
HBO	47.1%	50.1%	46.3%	46.9%
NHB	21.6%	21.7%	21.1%	22.4%

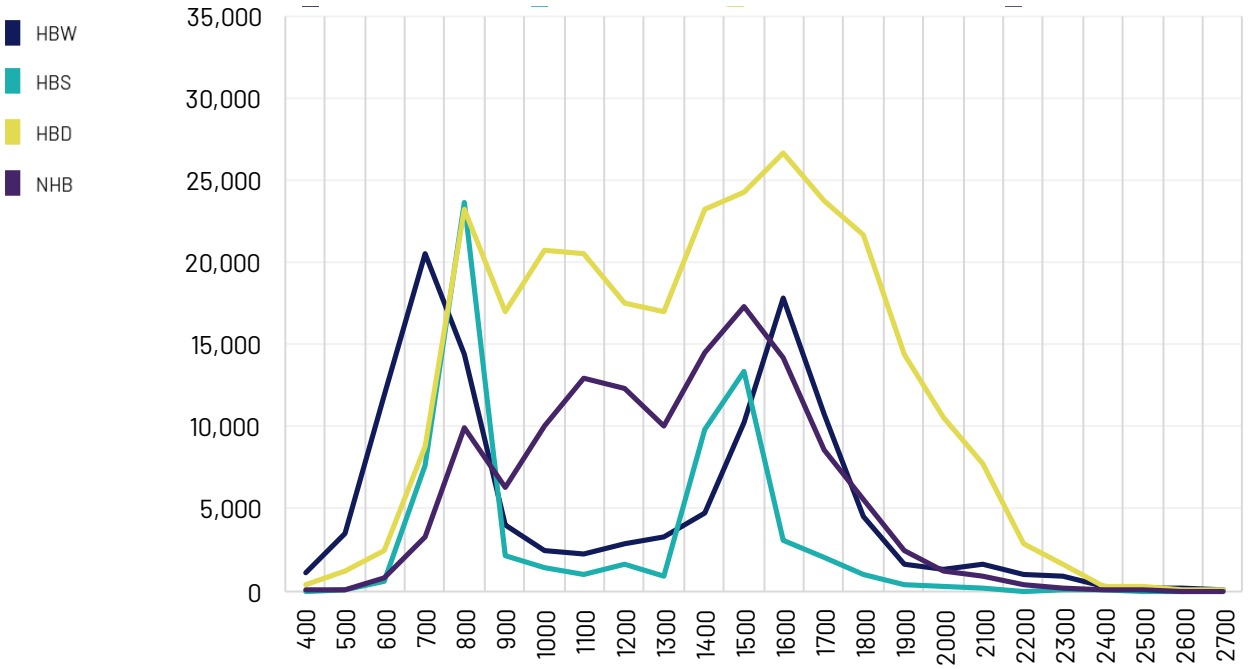
Exhibit – Table 26. Home-Based Trip Purposes (Expanded) – Study Area, 2007-2024

	Survey Cycle				Change			
	2007	2013	2018	2024	2007-2013 (6-Year)	2013-2018 (5-Year)	2018-2024 (6-Year)	2007-2024 (17-Year)
Total Trips	**634,200**	**675,900**	**684,800**	**608,298**	**+6.6%**	**+1.3%**	**-11.2%**	**-4.1%**
HBW	126,500	125,200	131,700	121,541	-1.0%	+5.2%	-7.7%	-3.9%
HBS	54,900	58,200	65,600	69,243	+6.0%	+12.8%	+5.6%	+26.1%
HBO	269,000	305,400	315,300	286,425	+13.5%	+3.2%	-9.2%	+6.5%
NHB	183,800	187,200	172,200	131,088	+1.8%	-8.0%	-23.9%	-28.7%
% of Trips								
HBW	19.9%	18.5%	19.2%	20.0%	-1.4%	+0.7%	+4.1%	+0.4%
HBS	8.7%	8.6%	9.6%	11.4%	0.0%	+1.0%	+18.6%	+30.8%
HBO	42.4%	45.2%	46.0%	47.1%	+2.8%	+0.9%	+2.4%	+11.1%
NHB	29.0%	27.7%	25.1%	21.6%	-1.3%	-2.5%	-14.1%	-25.7%

Looking at the trips for different home-based purposes by time of day (**Figure 51**) reveals a more nuanced picture of travel patterns rather than looking at just the purpose of the destination location.

- The results highlight a morning peak in HBW trips starting at 7 AM and a smaller afternoon peak at 4 PM.
- HBS trips peak at 8 AM, with the afternoon peak between 2 PM and 4 PM which is likely a reflection of different school day end times depending on the type of schooling.
- HBO trips also peak at 8AM in the morning and remain fairly steady throughout the day, reaching a sustained afternoon peak between 2 PM and approximately 6 PM. Some of this volume would include trips that may be part of work or school commutes if the final destination is home.
- Non-home based trips fluctuate throughout the day, with a smaller morning peak relative to other categories followed by a peak during the lunch hour from 11 AM to 1 PM and again at 3 PM.

Exhibit - Figure 51. Home-Based Trip Purposes by Time of Day – Study Area, 2024



5.6 Vehicle Occupancy

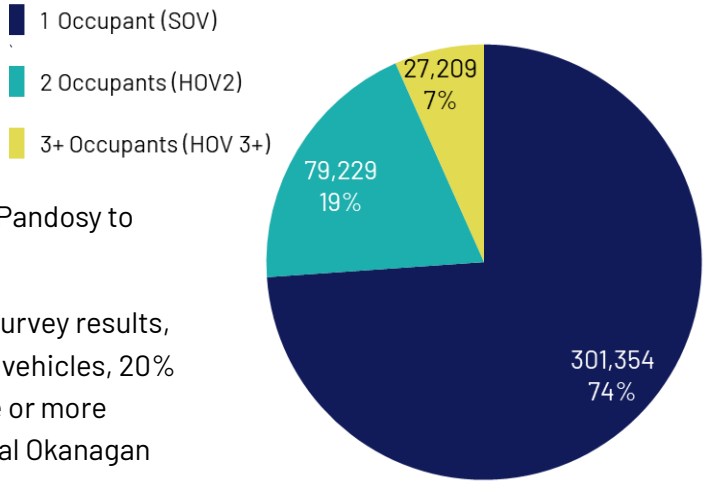
The survey asked respondents who reported auto driver trips to indicate the total number of vehicle occupants, including the driver. The survey results for the study area are reported in **Figure 52** below.

In line with 2018 results, three-quarters of all vehicle trips (74%) were in single-occupant vehicles (SOVs). One-fifth (19%) of trips were two-person high-occupancy vehicle trips (HOV-2), while only 7% had three or more vehicle occupants (HOV-3). The average vehicle occupancy in 2024 was 1.35 occupants per vehicle, consistent with 2018.

The distribution of SOV, HOV-2, and HOV-3+ vehicle trips was identical between Kelowna and other Central Okanagan, with 73% in SOV, 20% in HOV2 and 7% in HOV-3.Vernon had slightly more single-occupancy vehicle trips at 76%, and fewer HOV2 and HOV-3 (18% and 6% respectively).

When the data for the districts within each of the sub-areas were examined, the average vehicle occupancy was generally consistent with the overall study area, with only a few exceptions. This ranged from a low of 1.28 and 1.29 for residents of RDCO West and RDCO East, respectively, as well as 1.30 for City Centre/Pandosy to 1.52 in Black Mountain.

Exhibit – Figure 52. Vehicle Occupancy – Study Area, 2024



Vehicle occupancy is consistent with 2018 survey results, in which 74% of trips were single-occupant vehicles, 20% were two-person vehicles and 6% had three or more occupants. Results in Kelowna, Other Central Okanagan and Vernon were in line with this study area average.

Readers are reminded that the figures above are based only on trips made via vehicles available to the household. These trips may have included some work-related travel for business meetings, errands, or in the case of people who drive as part of their living, their first trip to their first worksite, but would not have captured commercial travel.

5.7 Transit Boardings and Transit Access Modes

Figure 53 summarizes the transit trips made in the study area. The 2024 survey results indicate transit ridership of just over 23,190 trips across the study area. In 2024, transit route information was not collected from survey participants in order to ease the respondent burden.

A portion of transit riders travel to (or from) their boarding (or alighting) bus stop via a mode other than walking. Overall, just 6% of transit trips entail modes other than walking: 2% drive-access transit ('park and ride'), with this being four times as common in Vernon compared to Kelowna and Other Central Okanagan; almost 3% drive-access passenger ('kiss and ride' or taxi), again most common in Vernon; and nearly 1% bicycle-access transit, driven only by Kelowna residents.

Exhibit – Figure 53. Transit Access Modes - Study Area, 2024

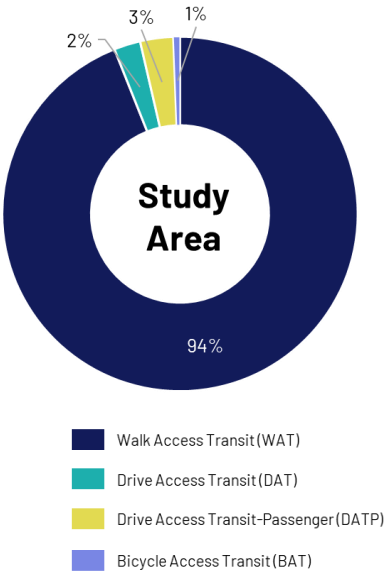
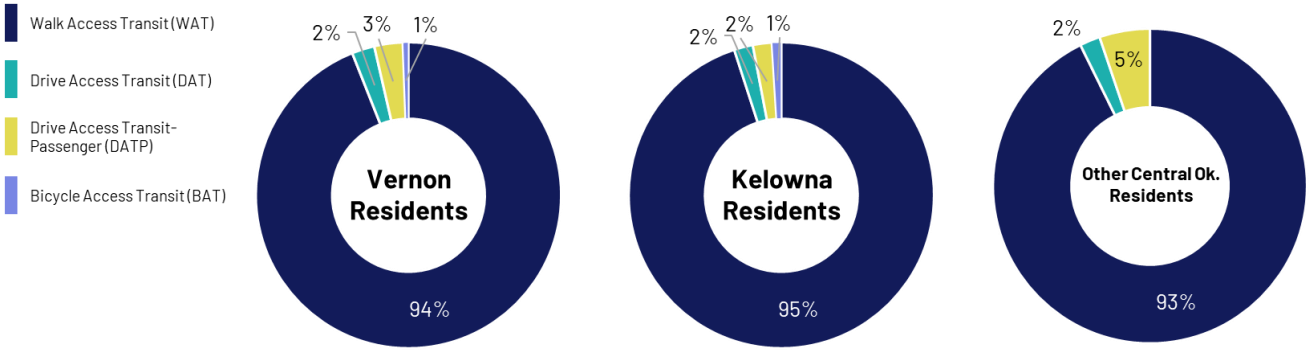


Exhibit – Figure 54. Transit Access Modes by Sub-Area, 2024



5.8 Trip Distances

5.8.1 Average Trip Distance

Mean trip distances are summarized in **Table 27** below. For this analysis, trip distance was calculated as the straight-line distance between the origin and destination (not the actual distance travelled on the street).

Work trips are longest (average of 8.6 km), while school trips are shortest (4.8 km). However, auto driver commutes for school-related trips are the longest overall (10.3 km), suggesting these may be commutes for post-secondary students one of the regional campuses. Other home-based purposes averaged 5.8 km, with non-home based trips averaging 4.9 km. The average auto driver trip distance was 6.9 km, and auto passenger trips 5.8 km. Transit trips averaged 6.2 km and school bus trips averaged 4.7 km. The average cycling trip was 2.9 km and the average walking trip was 800 m.

Averages vary by sub-area, with residents of Vernon and Other Central Okanagan tending to make longer trips for all modes. In particular, students in Vernon see the farthest commutes to school by bus with an average of 36.2 km.

Exhibit – Table 27. Average Trip Distance (km) by Trip Purpose and Mode, 2024

	Total	Auto Driver	Auto Passenger	Transit Bus	School Bus	Walked	Bicycle	Other
Study Area								
HBW	8.6	9.7	7.3	5.2	*	0.9	3.5	*
HBS	4.8	10.3	3.9	7.1	4.4	0.7	1.6	*
HBO	5.8	6.1	7.0	5.0	-	0.8	2.9	4.4
NHB	4.9	5.3	4.6	6.3	*	0.6	2.3	*
Total	6.1	6.9	5.8	6.2	4.7	0.8	2.9	4.6
Vernon								
HBW	8.2	9.3	8.9	2.1	*	1.0	3.4	*
HBS	7.1	19.0	4.5	36.2	4.0	0.7	*	-
HBO	5.6	5.9	7.4	2.3	-	0.8	2.4	*
NHB	5.1	5.5	4.5	10.3	*	0.5	*	*
Total	6.2	6.8	6.5	11.7	4.3	0.8	2.5	*
Kelowna								
HBW	6.7	7.7	5.6	5.4	-	0.9	3.3	*
HBS	3.9	7.4	3.2	5.1	4.2	0.8	1.8	*
HBO	4.8	5.1	5.9	4.2	-	0.8	2.5	3.9
NHB	4.3	4.7	4.4	5.2	*	0.5	1.9	*
Total	5.0	5.7	4.9	5.0	4.2	0.8	2.7	3.8
Other Central Okanagan								
HBW	12.9	13.4	10.7	8.2	-	0.9	4.9	*
HBS	5.6	13.5	4.9	6.8	4.9	0.6	*	-
HBO	8.0	8.7	10.8	-	0.7	5.7	8.0	
NHB	6.2	4.9	6.8	*	0.8	*	5.8	
Total	9.1	7.0	7.7	5.3	0.7	4.7	8.2	

5.8.2 Trends in Trip Distance, 2007-2018

In light of the downward trend in daily trip rates (down from 3.37 per person in 2007 to 2.13/person in 2024), it may be helpful to analyze the impact of changing travel patterns on transportation networks.

Table 41 below summarizes the average straight-line trip distances by survey cycle. Table 42 then extrapolates these averages to all trips. The results indicate that not only are people making fewer daily trips, but the average length of those trips have declined slightly. This could be due to a number of reasons, including greater density of local shops and services and increased walkability, greater availability of e-commerce and online services, or differences in how trips were reported in different survey cycles.

The cumulative straight-line distances across all cycles suggests that the daily total has decreased by 14% since 2018 (in contrast to the 21% population increase during this same time period). However, the change in trip distance varies by mode. Driving has seen a decline in total distance for both drivers (12% decrease) and passengers (25% decrease), while transit trip distances have increased by 6%.

Exhibit - Table 28. Trend in Average Trip Distance by Mode, 2007-2024

	2007	2013	2018	2024	2007-2013 (6-Year)	2013-2018 (5-Year)	2018-2024 (6-Year)	2007-2024 (17-Year)
All Trips	5.7	5.8	6.2	6.1	+1.8%	+6.9%	-1.6%	+7.0%
Auto Driver	6.3	6.3	6.9	6.9	0.0%	+9.5%	0%	+9.2%
Auto Passenger	5.2	6.1	6.4	5.8	+17.3%	+4.9%	-9.7%	+11.1%
Transit Bus	4.6	8.4	7.1	6.2	+82.6%	-15.5%	-12.7%	+34.8%
School Bus	5.1	4.5	5.3	4.7	-11.8%	+17.8%	-12.2%	-8.7%
Walked	0.9	1.0	0.7	0.8	+11.1%	-30.0%	+7.5%	-16.4%
Bicycle	3.5	2.8	2.9	2.9	-20.0%	+3.6%	0%	-17.7%
Other	6.9	4.2	8.8	4.6	-39.1%	+109.5%	-48.0%	-33.7%

Exhibit - Table 29. Estimated Cumulative Distance of All Daily Trips by Mode, 2007-2024

	2007	2013	2018	2024	2007-2013 (6-Year)	2013-2018 (5-Year)	2018-2024 (6-Year)	2007-2024 (17-Year)
Total Distance	3,625,900	3,906,600	4,260,800	3,672,486	+7.7%	+9.1%	-13.8%	+1.3%
Auto Driver	2,821,200	2,887,100	3,186,600	2,801,514	+2.3%	+10.4%	-12.1%	-0.7%
Auto Passenger	577,900	668,100	784,100	586,413	+15.6%	+17.4%	-25.2%	+1.5%
Transit Bus	41,500	188,200*	135,600	143,518	+353.5%*	-27.9%*	+5.8%	+245.8%
School Bus	72,000	44,000	56,800	52,945	-38.9%	+29.1%	-6.8%	-26.5%

*Interpret with caution, the number of transit trips in 2013 may be somewhat overstated

5.9 Vehicle Kilometers Travelled (VKT)

In addition to straight-line distances, the estimated actual distance travelled was also calculated. This was done by querying a Google API using trip origin and destination locations, departure times and modes of travel. The Google algorithm determines the best route and estimates the actual distance travelled between origin and destination points based on the given time of day and day of the week. The Google distances were then used to estimate the actual daily vehicle kilometers travelled (VKT) by residents. VKT is often of interest as it provides an estimate of actual daily usage of the available kilometers of road network for personal trips. It is important to note that the distance travelled is an estimate only, and was only calculated for auto-driver modes of transportation.

The survey results indicate that the 408,854 daily auto driver trips account for an estimated 4.32 million daily kilometers of vehicle travel. While the Other Central Okanagan area accounts for 28% of the population, it accounts for 39% of daily VKT in the region. Meanwhile Kelowna accounts for 55% of the survey area population but 45% of daily VKT. These differences can likely be attributed to greater urban density including workplaces, schools, shops and services in Kelowna compared with the geographical sprawl of communities in other parts of the Central Okanagan. Projecting the results across a year of weekdays indicates that 1.13 billion kilometers of road travel are generated each year by personal vehicle trips on weekdays, down from 1.24 billion kilometers in 2018.

As a reminder, the results below only account for VKT for personal trips made by residents of the area on weekdays in mid fall 2024. The survey did not capture commercial trips or travel on weekends, which also contribute to VKT and emissions.

Exhibit - Table 30. VKT-Related Statistics (Expanded), Sub-Areas, 2024

	Study Total	Vernon	Kelowna	Other Central Ok.
Households	127,177	21,609	70,964	34,604
Population	286,227	46,212	158,624	81,391
Vehicles	222,205	35,861	116,367	69,977
Drivers	221,696	35,419	121,893	64,385
Persons Driving on a Given Weekday	124,466	19,552	66,314	38,601
Total Vehicle Trips	408,854	65,494	220,690	122,670
Total Daily VKT	4,315,495	693,304	1,925,494	1,696,697
Average VKT per Trip	10.6	10.6	8.7	13.8
Average Daily VKT per Household	33.9	32.1	27.1	49.0
Average Daily VKT per Capita*	15.1	15.0	12.1	20.8
Average Daily VKT per Vehicle**	19.4	19.3	16.5	24.2
Total VKT per Year from Weekday Driving	1,126,344,109	180,952,314	502,553,867	442,837,927

*Total population (all ages), whether drive or not on a given day

**Total registered household vehicles, whether driven or not

Exhibit - Table 31. VKT-Related Statistics (Expanded), Municipalities, 2024

	Vernon	Kelowna	Lake Country	West Kelowna	RDCO	Peachland	WFN
Households	21,609	70,964	6,907	15,213	3,374	2,879	6,230
Population	46,212	158,624	17,124	38,281	7,797	6,056	12,133
Vehicles	35,861	116,367	14,480	31,742	7,864	5,866	10,024
Drivers	35,419	121,893	13,571	28,926	6,642	5,242	10,005
Persons Driving on a Given Weekday	19,552	66,314	7,952	17,528	3,759	3,149	6,213
Total Vehicle Trips	65,494	220,690	24,707	55,997	11,723	10,284	19,960
Total Daily VKT	693,304	1,925,494	382,924	742,933	217,557	163,718	189,566
Average VKT per Trip	10.6	8.7	15.5	13.3	18.6	15.9	9.5
Average Daily VKT per Household	32.1	27.1	55.4	48.8	64.5	56.9	30.4
Average Daily VKT per Capita*	15.0	12.1	22.4	19.4	27.9	27.0	15.6
Average Daily VKT per Vehicle**	19.3	16.5	26.4	23.4	27.7	27.9	18.9
Total VKT per Year from Weekday Driving	180,952,314	502,553,867	99,943,040	193,905,604	56,782,287	42,730,360	49,476,637

Distances returned by the Google Map Directions may differ from actual distance travelled, as the survey respondent may not have taken the same route recommended by Google for the time of day and typical driving conditions. Estimates were not returned for some multi-mode auto-transit trips or school bus trips.

5.10 Trips to School

The following section provides a closer analysis of travel patterns to school among Kindergarten to Grade 12 and post-secondary students in the region. Specifically, the mode share to school, commuting patterns of parents, and the average distance travelled to get to school by district and municipality. With the growing proportion of younger residents and young families in the region, it will be important to understand how transportation to school impacts broader traffic patterns for the years ahead.

5.10.1 Trips to School (K-12)

As illustrated in **Figure 55** to the right, half of K-12 students in the study area are driven to school by an adult in their household, while the remaining half are split between transit and active modes of transportation. Combined, public transit and school buses account for 27% of trips to school, while walking accounts for 18% and cycling for 3%. Of note, 3% of trips to school are made as auto drivers, representing older high school students aged 16 and above with a driver's license.

Exhibit - Figure 55. Mode Share of K-12 Trips to School, Study Area, 2024

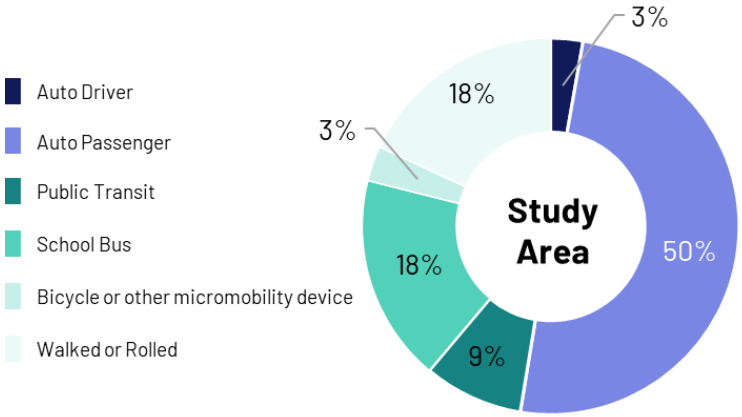


Figure 56 on the following page summarizes mode share among K-12 students by municipality. At least half of students in Kelowna, Vernon, Lake Country, and Westbank First Nation are driven to school. In particular, students in Westbank First Nation have the highest reliance on a parent or adult driving them to school (58%) or public transit (22%). Students in the Regional District of Central Okanagan and Peachland are more likely to take the school bus than be driven, while Kelowna and Vernon both have a fairly even split between those who take a vehicle to school and those who take transit or an active mode of transportation.

As seen in **Figure 57**, the higher share of walking in Kelowna is driven by those in City Centre/Pandosy, Rutland and Central Kelowna, while in Vernon it is largely driven by those in the City Core and East Hill. Students in Outlying Areas in Vernon either take a vehicle to school or take the school bus.

Exhibit - Figure 56. Mode Share of K-12 Trips to School, by Municipality, 2024

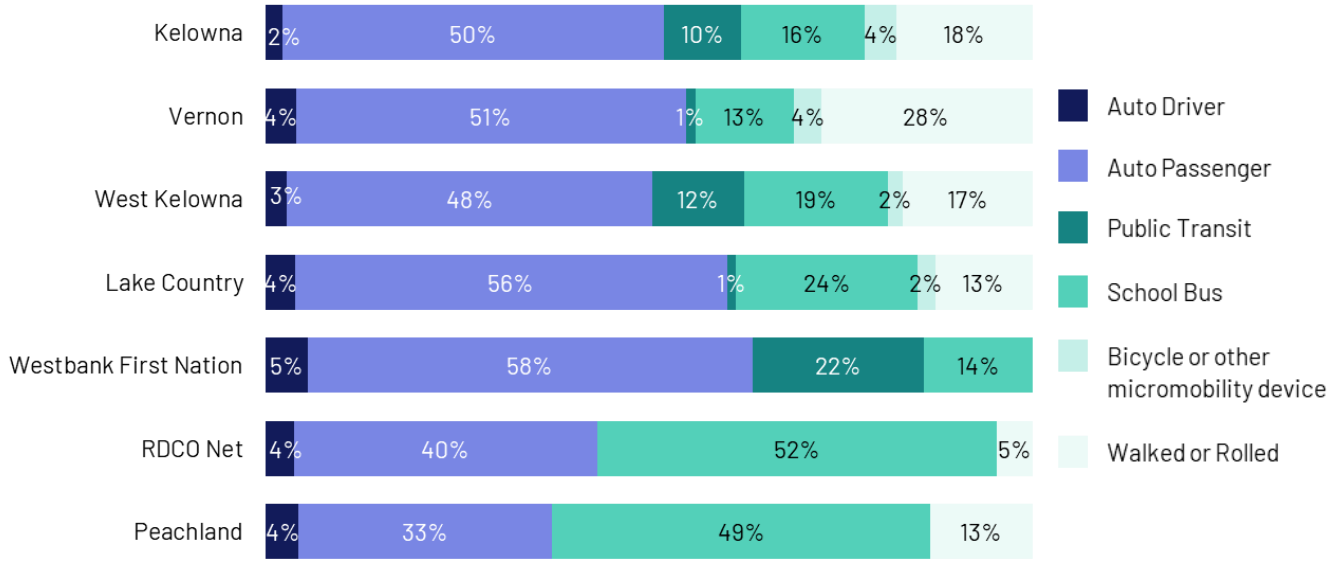
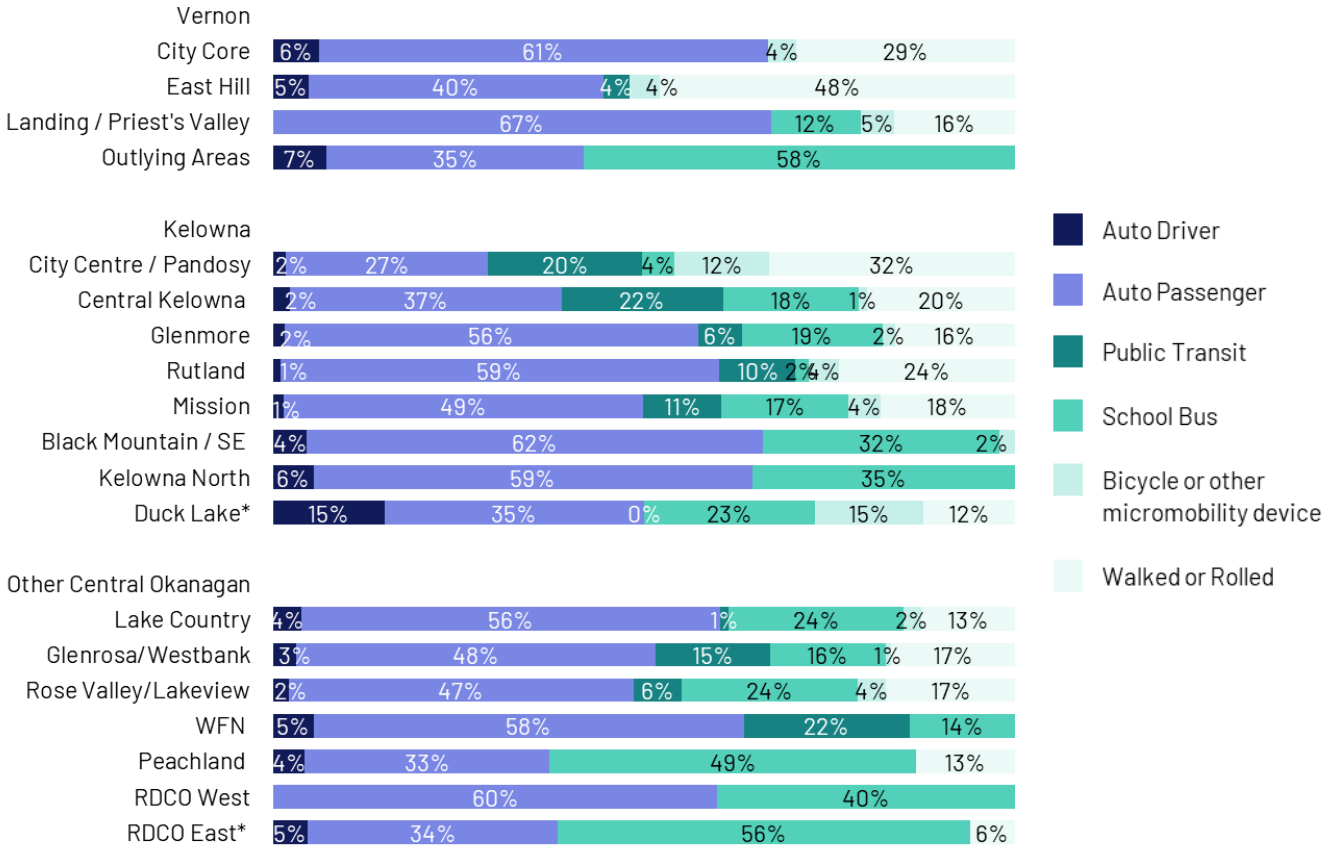


Exhibit - Figure 57. Mode Share of K-12 Trips to School, by District, 2024



Among K-12 students who are driven to school, those in Peachland and Lake Country have the longest average commutes at 12.0 km and 11.1 km, respectively. On the other end of the spectrum, those in Vernon and Kelowna have the shortest commutes, both under 5 km on average (see **Figure 58** below).

That said, there is some variation by district within municipalities. As illustrated in **Figure 59**, the average commutes within Vernon are under 3 km for all districts, with the exception of Outlying Areas with an average of 18.8 km driven to get to school. Meanwhile, within Kelowna, the shortest vehicle commutes are in City Centre/Pandosy (3.9 km), Central Kelowna (3.2 km) and Rutland (3.0 km) and the highest are in Kelowna North (8.2 km) and Duck Lake (8.7 km).

Exhibit - Figure 58. Average Trip Distance (km) Driven to School (K-12), by Municipality, 2024

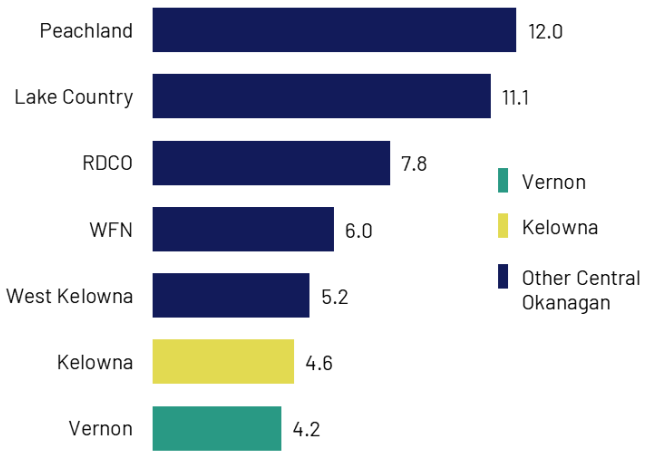
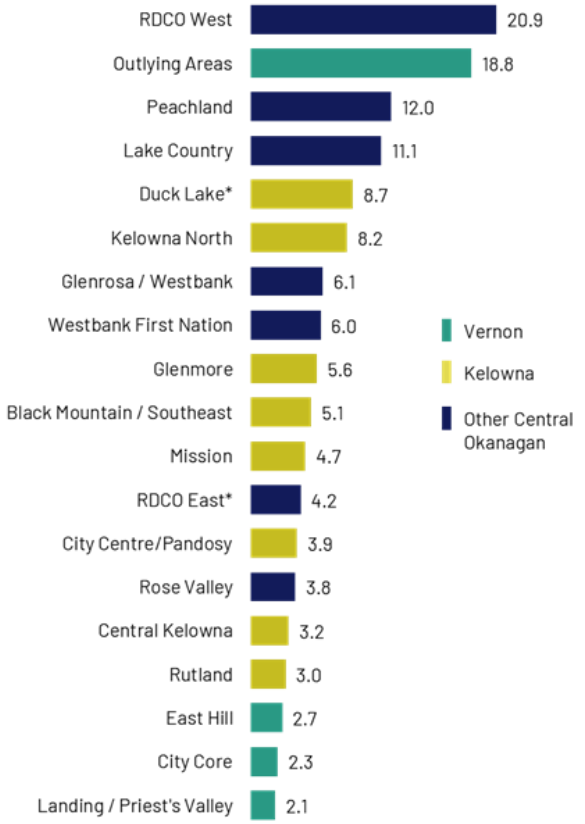


Exhibit - Figure 59. Average Trip Distance (km) Driven to School (K-12), by District, 2024



The following figures illustrate adults' destinations after driving children in their household to school. Overall, across the study area, fewer than half (42%) return directly home after dropping off their children at school. One-quarter (24%) continue to commute to work, while 31% drive elsewhere (appointments, errands, social activities, etc.)

However, there is some variation by municipality. West Kelowna and Westbank First Nation have the highest share of parents or guardians who continue to commute to work, at 36% and 32%, respectively. Meanwhile the majority of parents in Vernon, Lake Country and RDCO return home after dropping the kids off at school.

Exhibit - Figure 60. Destination After Driving Kids to School, by Municipality, 2024

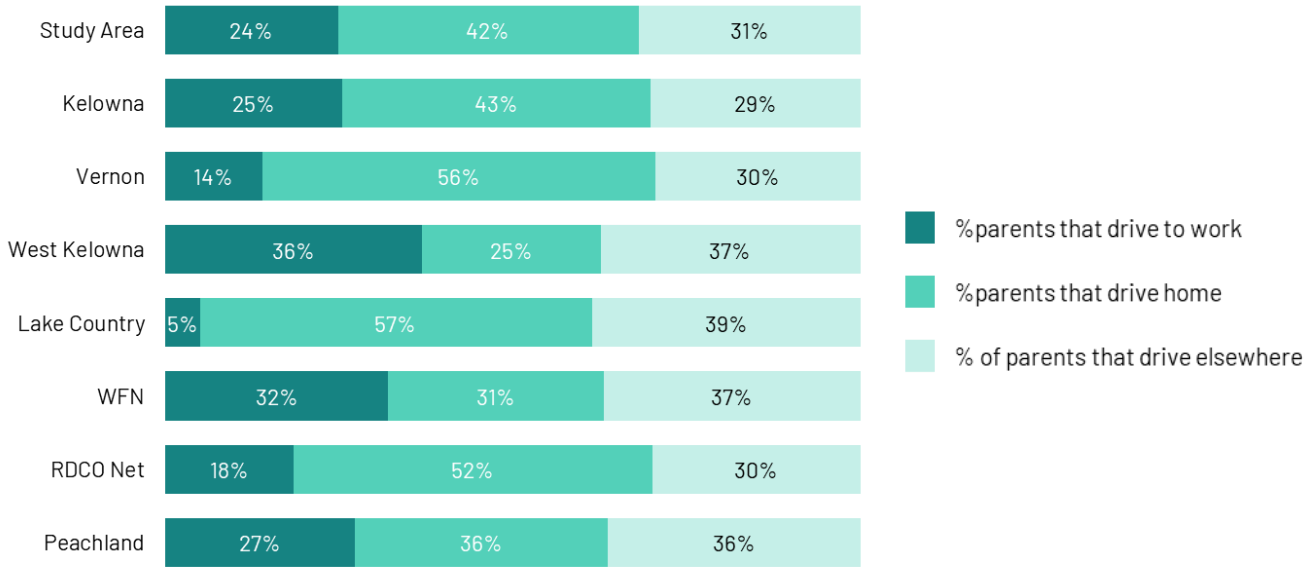
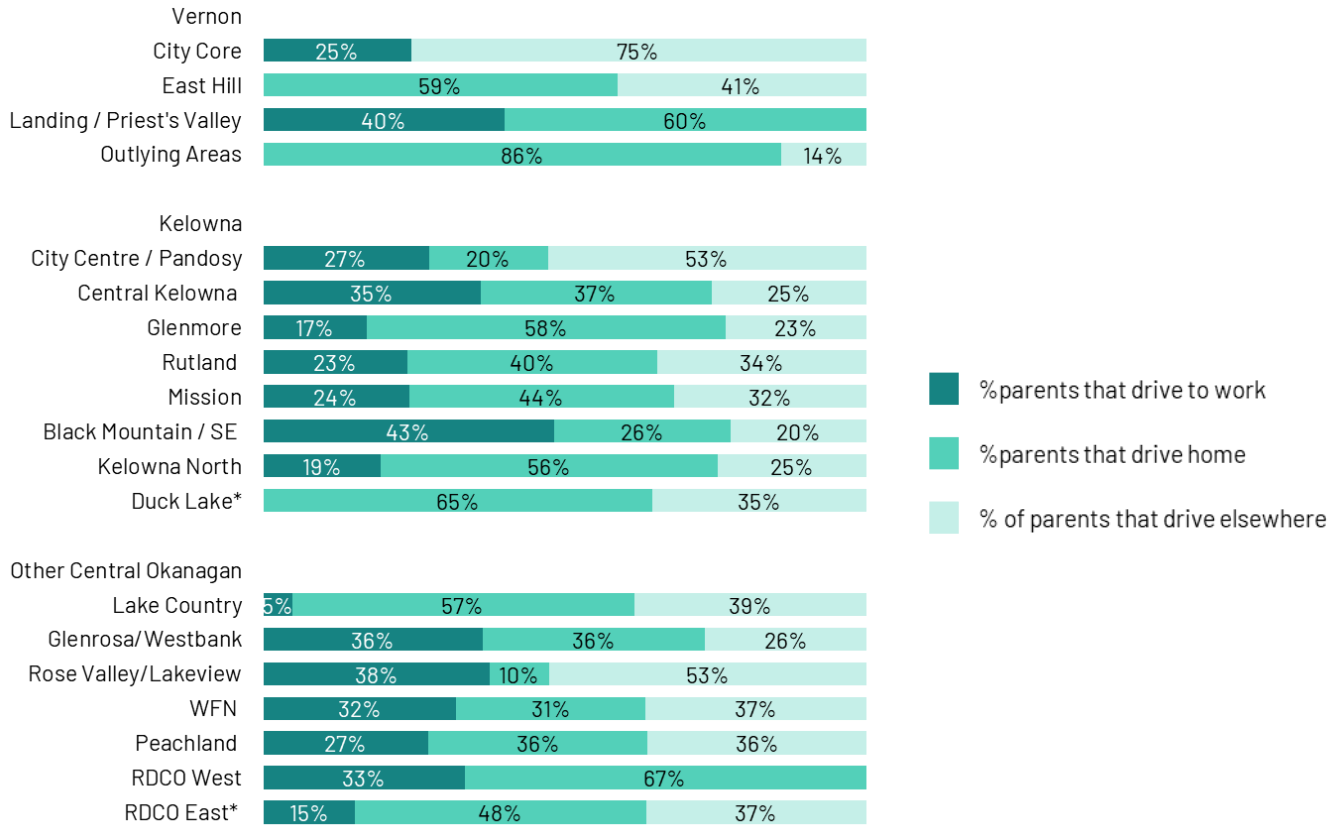


Figure 61 shows a breakdown of adults' destinations after dropping off kids at school by district. As illustrated, there is substantial variation by district. Overall, work-bound adults are most common in Landing/Priest's Valley (40%) and Black Mountain (43%), while those in more rural areas (including but not limited to Outlying Areas, RDCO West and Duck Lake) are more likely to drive home after drop-off.

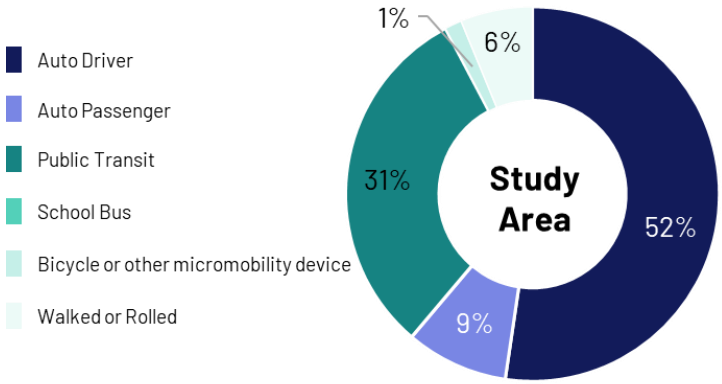
Exhibit - Figure 61. Destination After Parents Drive Kids to School, by District, 2024



5.10.2 Trips to School (Post-Secondary)

In contrast to school-aged children, post-secondary students are more likely to take a vehicle to school. Overall, 61% of post-secondary students in the region drive to school, including 52% who drive themselves and 9% who are driven by someone else. Another 31% take public transit and fewer bike (1%) or walk (6%).

Exhibit - Figure 62. Mode Share of Post-Secondary Students, Study Area, 2024



From a municipal perspective, the majority of students in all areas drive to school, either driving themselves or as a passenger. However, Kelowna sees greater variation across modes, with nearly half of students taking a form of sustainable or active transportation (36% take public transit, 9% cycle and 2% walk). The higher share of transit usage in Kelowna is driven by students in Central Kelowna, Rutland and Black Mountain, while Kelowna North has the highest share of students who walk to school (see **Figure 64** below). Meanwhile the vast majority of students in rural or remote areas, including RDCO, Peachland, and Westbank First Nation drive to school.

Exhibit - Figure 63. Mode Share of Post-Secondary Students, by Municipality, 2024

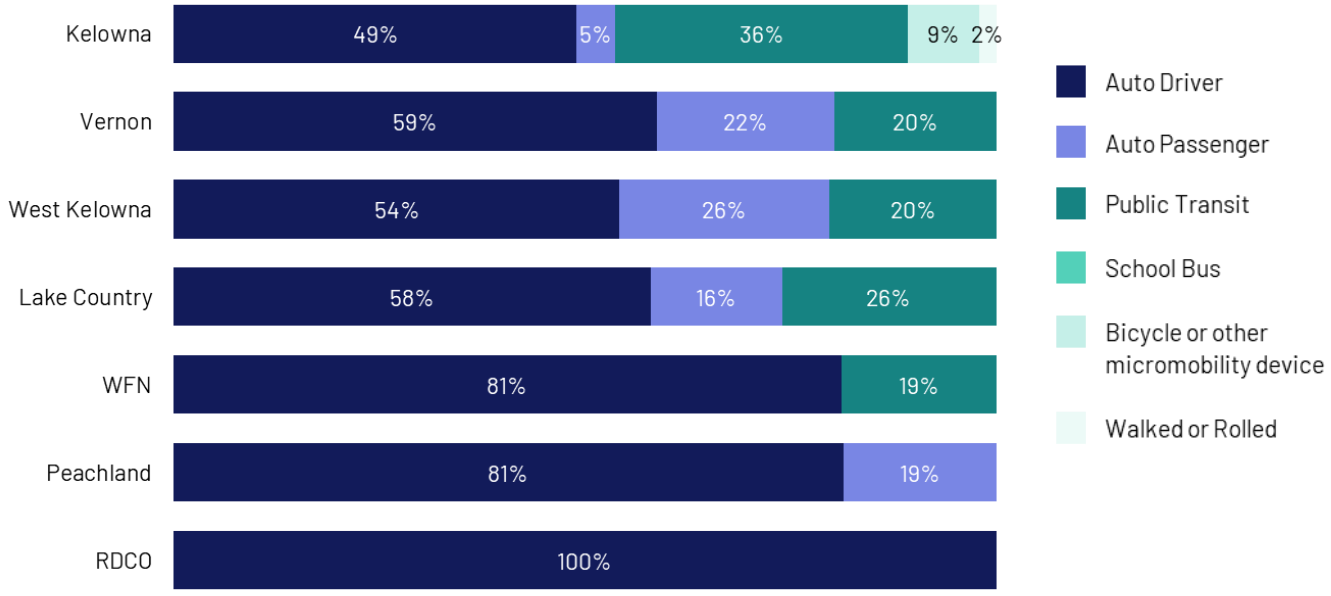
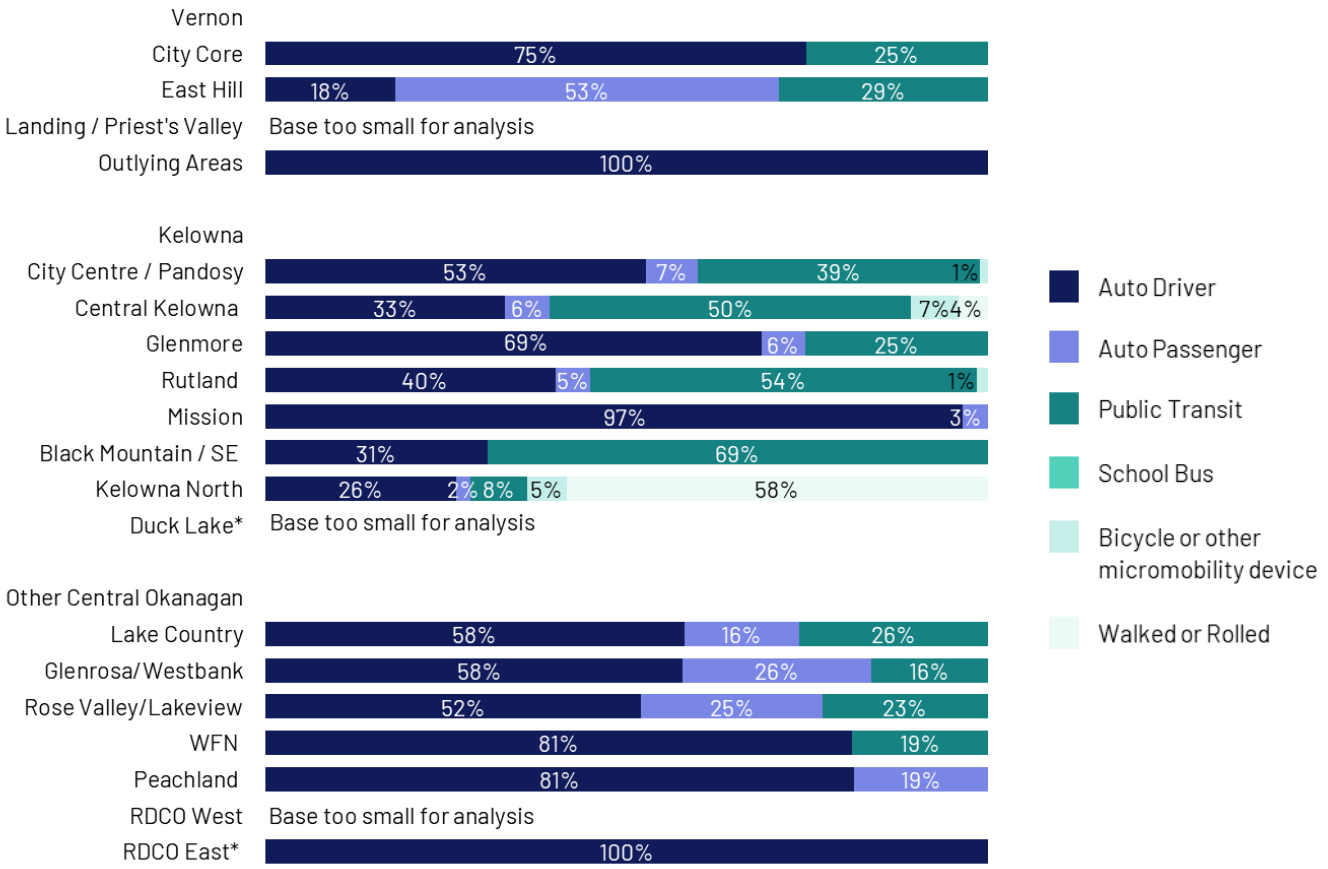


Exhibit – Figure 64. Mode Share of Post-Secondary Students, by District, 2024



Similar to commuting patterns among K-12 students, post-secondary students in Peachland have the furthest commute by car, estimated at approximately 35 km on average. This is followed by Vernon at roughly 27 km on average, while students in Kelowna have the shortest commute at 10 km on average.

Exhibit - Figure 65. Average Trip Distance (km) Driven to Post-Secondary School, by Municipality, 2024

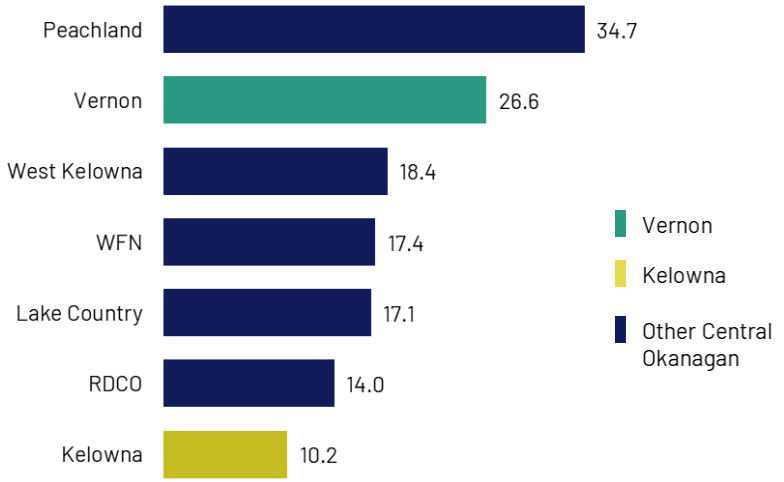
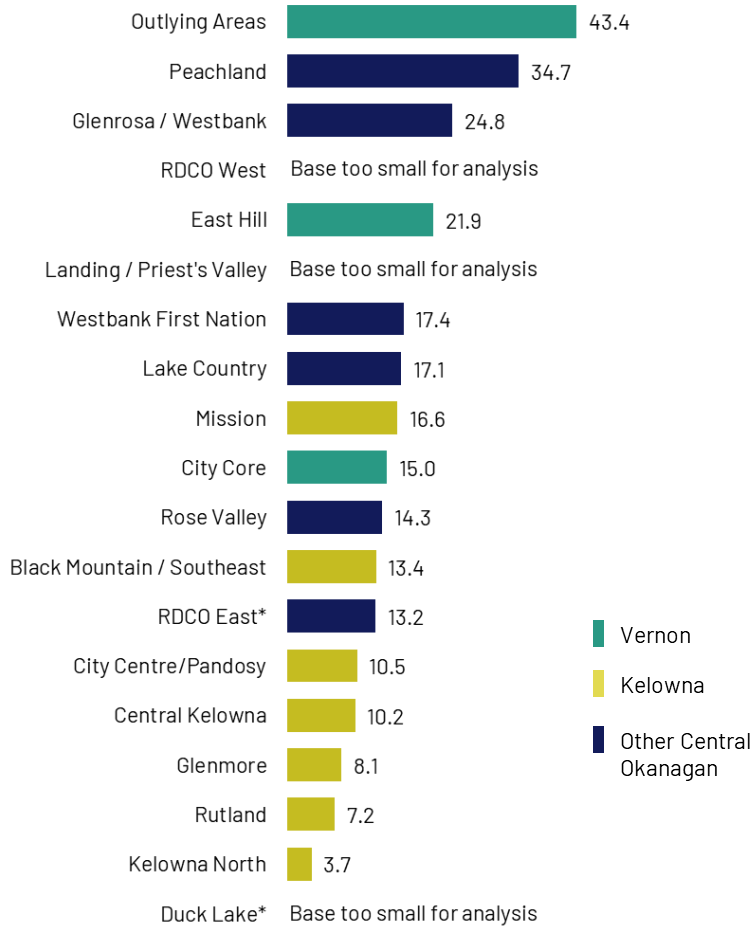


Exhibit - Figure 66. Average Trip Distance (KM) Driven to Post-Secondary School by District, 2024



5.11 Inter-Regional Travel

The following section examines trip flows between the three sub-areas within the study area: Vernon, Kelowna, and Other Central Okanagan. Of the approximately 608,200 daily trips taken by residents of the study area, approximately 107,100 or 17.6% are inter-regional flows between sub-areas or areas external to the study area (refer to **Table 59 in the Appendix**). During the morning peak between 6AM and 9AM, the proportion of inter-regional trips increases to 19.2%.

The most significant inter-regional flows are between the communities in the Other Central Okanagan sub-area and Kelowna, at over 34,500 trips flowing each way over the course of the day. The AM Peak flows from these communities to Kelowna (about 13,200) are higher than those from Kelowna to the rest of the Central Okanagan (about 3,300) due to Kelowna being a net attractor of workers for many residents in the study area (see **Section 6.8.5**).

There continue to be significant flows between Vernon and external areas (roughly 7,500 trips each way) likely due to jobs and services in surrounding communities outside the study area. The Vernon-External flows are greater than those between Vernon-Kelowna and Vernon-Other Central Okanagan combined.

The map below highlights the 24-hour flows discussed above (**Figure 67**). Only flows with more than 1,500 trips are displayed. The map on the following pages presents the AM Peak (**Figure 68**) and PM Peak trip flows (**Figure 69**). Only flows with more than 350 trips are displayed.

As shown, there is considerable flow of traffic throughout the region, with the bulk between the Westside communities and Kelowna. During the morning peak, traffic flow is heavier heading into Kelowna from the Westside than in the reverse direction (a pattern that is repeated for other surrounding communities including Lake Country and RDCO East).

Exhibit – Figure 67. 24-Hour Inter-Regional Flows (Expanded), 2024

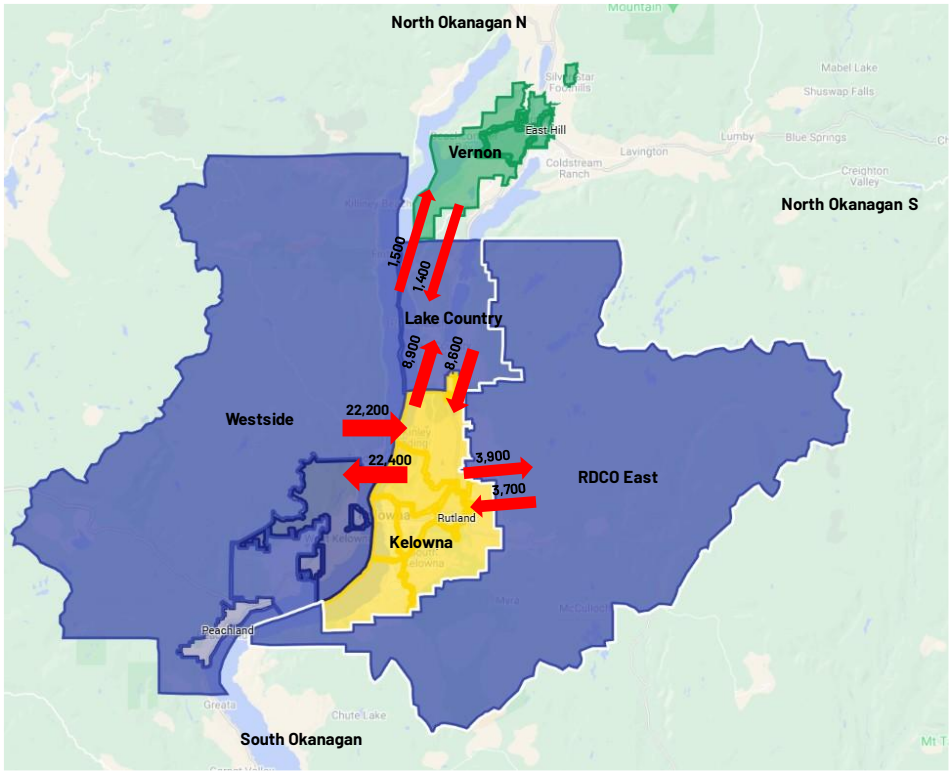


Exhibit – Figure 68. AM Peak Inter-Regional Flows (Expanded), 2024

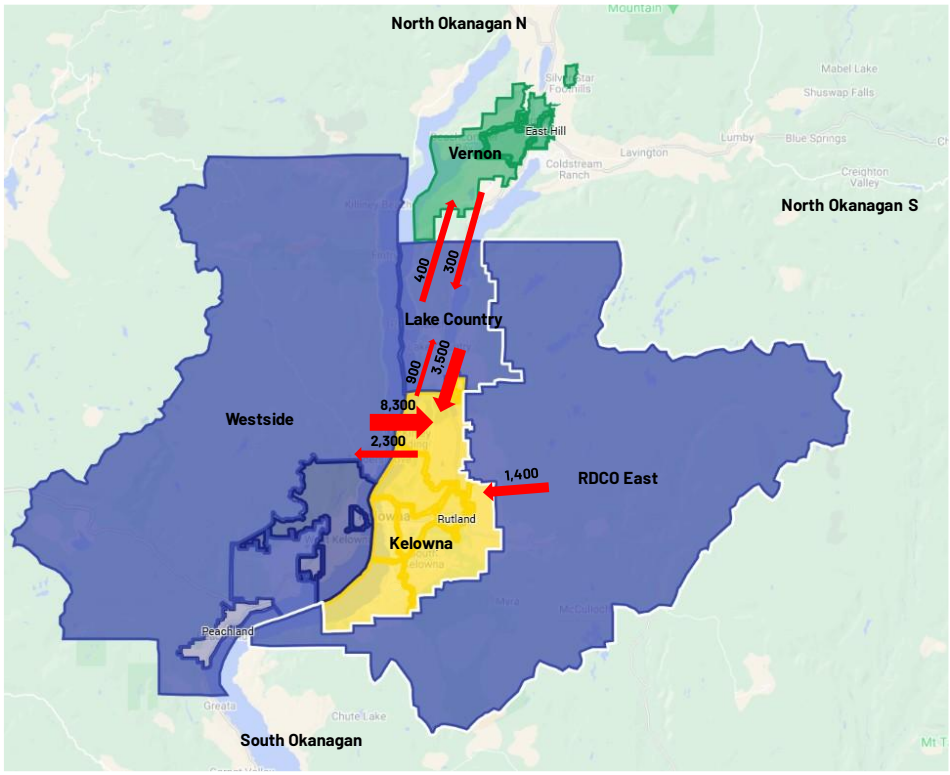
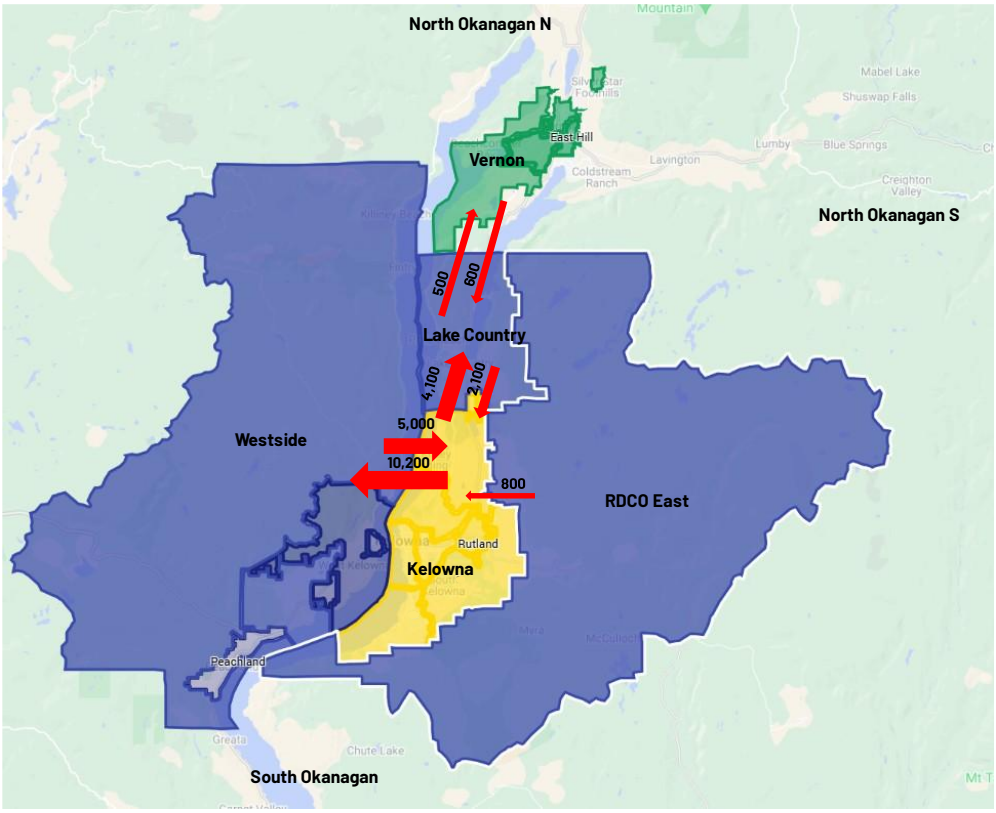


Exhibit – Figure 69. PM Peak Inter-Regional Flows (Expanded), 2024



The Other Central Okanagan sub-area is comprised of a number of communities that are geographically spread out throughout the study area. These communities can be organized into three geographies considering the geographic separations between them: Westside, comprised of all of the adjacent communities to the west of Okanagan Lake (City of West Kelowna, Westbank First Nation, Peachland, and RDCO West); Lake Country to the east of the lake, between Vernon and Kelowna; and RDCO East, to the east of Kelowna. **Table 32** presents the flows between these regions. Detailed flows between individual districts can be found in the Origin-Destination matrices in **Section 5.13**. A reminder that all figures are estimates based on survey data.

Exhibit - Table 32. Other Central Okanagan – Flows between Westside, Lake Country and RDCO East (Expanded), 2024

	24-Hour Total	AM Peak 6AM-8:59AM (3 hours)	PM Peak 2PM-5:59PM (4 hours)	Off-Peak (all other times of day)
Total Trips to from or within Other Central Okanagan	174,200	39,000	64,300	71,000
Westside internal	76,000	15,900	29,800	30,300
Lake Country internal	15,300	3,400	5,900	6,000
RDCO East internal	800	300	400	200
Inter-regional and between three areas within Other Central Okanagan	82,100	19,400	28,200	34,600
Trip Flows				
Westside → Kelowna	22,200	8,300	5,000	9,000
Kelowna → Westside	22,400	2,300	10,200	10,000
Westside → Vernon	500	100	70	300
Vernon →Westside	400	0	200	300
Westside → Lake Country	600	100	200	300
Lake Country → Westside	500	200	200	100
Westside → RDCO East	200	60	30	90
RDCO East → Westside	200	10	40	200
Westside → External	3,000	1,300	700	1000
External → Westside	3,100	100	1,600	1,500
Lake Country → Kelowna	8,600	3,500	2,100	3,000
Kelowna → Lake Country	8,900	900	4,100	3,900
Lake Country → Vernon	1,500	400	500	600
Vernon → Lake Country	1,400	300	600	500
Lake Country → RDCO East	100	0	30	30
RDCO East → Lake Country	50	40	0	10
Lake Country → External	400	100	80	200
External → Lake Country	400	20	200	100
RDCO East → Kelowna	3,700	1,400	800	1,500
Kelowna → RDCO East	3,900	100	1,700	2,000
RDCO East → Vernon	60	40	0	20

Vernon → RDCO East	40	0	40	0
RDCO East → External	100	0	0	100
External → RDCO East	70	0	70	0

Readers are also referred to the origin destination tables in **Section 5.13** of this report which detail the trip flows between districts, and the section on places of work (**Section 6.8.5**), which provides a more detailed breakdown on the locations of places of employment at businesses within Kelowna and Vernon.

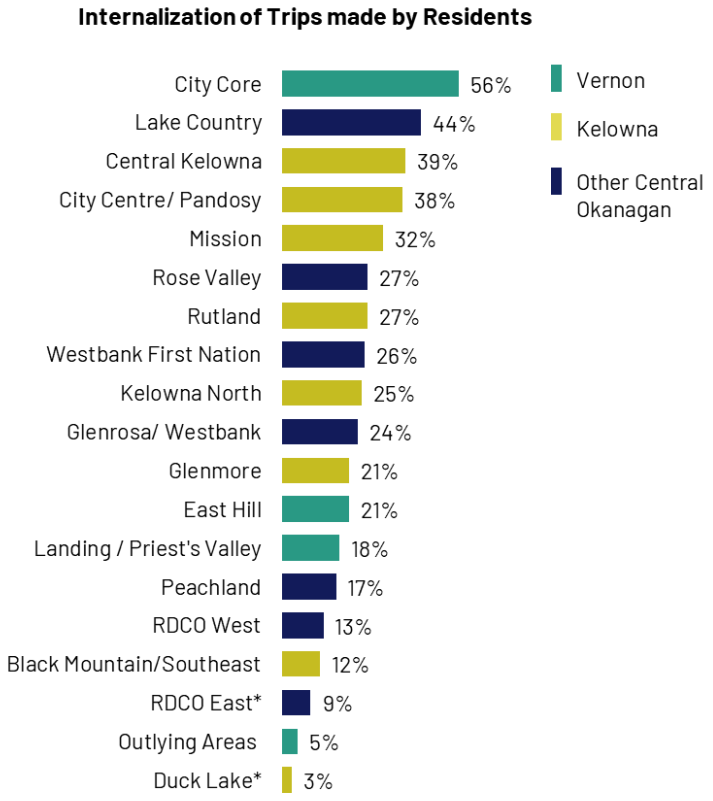
5.12 Internalization of Travel

Figure 70 presents the proportion of travel that is internal to each district by residents of that community. This perspective provides insight into how easily residents can access various destinations – such as workplaces, schools, shops and services – from their homes. When these everyday activities are situated closer to where people live, it can help promote more sustainable transportation choices. Specifically, shorter distances between home and common destinations tend to encourage alternatives to single-occupancy vehicle use, with walking and cycling becoming particularly attractive options.

Across the entire study area, 28% of residents' trips are made within the same district their home is located in. Readers are referred to **Figure 2** of this report for a map illustrating the district geographies.

As shown, the majority of Vernon's City Core residents (56%) make their trips within the neighbourhoods that comprise this district. This is followed by Lake Country at 44%, and several districts in Kelowna including Central Kelowna and City Centre/Pandosy at 39% and 38% respectively, and Mission at 32%.

Exhibit – Figure 70. Internalization of Trips by Home District



On the other end of the spectrum, lower levels of internal trips suggest geographies with less urban densification where there are fewer local workplaces, shops or services.

Table 33 presents the internalization of trips for the various home-based purposes including HBW, HBS and HBO for residents of each district. Shading highlights the areas with higher rates of internalization.

Overall, 1 in 5 (20%) HBW trips are internal to the district of the traveler's residence, 1 in 3 (34%) HBO trips are internalized, and a higher rate of HBS trips are internal (45%). Consistent with 2018, the city centres have the highest rates of internalization of HBW trips. Kelowna North and Landing/Priest's Valley have the highest HBS rate at 73%.

Exhibit - Table 33. Internalization of Trips by Home District for HBW, HBS and HBO Purposes, 2024

Total Trips Made	Total Trips Made by Residents of District		HBW Trips Made by Residents of District		HBS Trips Made by Residents of District		HBO Trips Made by Residents of District	
	Total Trips Made	% Internalized to Home District	HBW Trips	% Internalized to Home District	HBS Trips	% Internalized to Home District	HBO Trips	% Internalized to Home District
Total Daily Trips	608,298	28%	121,541	20%	69,243	45%	286,425	34%
(% of Total Daily Trips)	(100%)		(20%)		(11%)		(47%)	
City Core	25,046	56%	5,054	48%	1,572	54%	13,282	62%
East Hill	25,867	21%	5,471	22%	3,477	33%	11,292	26%
Landing / Priest's Valley	29,517	18%	6,105	6%	2,362	73%	15,083	19%
Outlying Areas	17,051	5%	1,988	14%	1,459	0%	9,180	5%
Lake Country	69,077	44%	16,582	12%	6,434	67%	32,819	61%
City Centre / Pandosy	47,862	38%	10,048	46%	4,096	49%	23,996	39%
Central Kelowna	58,406	39%	10,083	36%	7,329	11%	28,283	49%
Glenmore	60,521	21%	14,042	8%	8,165	33%	24,227	27%
Rutland	48,242	27%	7,016	14%	8,365	43%	22,492	38%
Mission	33,977	32%	6,823	14%	4,443	72%	16,672	34%
Black Mountain / Southeast	17,460	12%	3,317	5%	2,684	32%	7,045	14%
Kelowna North	3,496	25%	0,836	19%	310	73%	1,504	22%
Duck Lake*	34,198	3%	6,959	1%	4,268	27%	15,706	1%
Glenrosa / Westbank	48,356	24%	10,053	14%	6,033	36%	22,315	31%
Rose Valley / Lakeview	33,381	27%	6,803	13%	4,367	69%	14,659	29%
WFN	27,090	26%	5,200	22%	1,659	5%	14,215	35%
Peachland	13,579	17%	1,665	12%	1,045	27%	7,075	24%
RDCO West	6,000	13%	1,132	4%	186	0%	2,880	26%
RDCO East*	9,172	9%	2,365	0%	988	37%	3,700	11%

5.13 Origin-Destination Matrices

The tables on the following pages provide origin-destination matrices for the 19 districts in the study area and the external geographies. Sub-totals are provided for each of the three sub-areas and for all external geographies combined, as well as a total across all trips reported.

Origin-destination matrices have been provided for four time periods:

- 24-hour daily total
- AM Peak: trips with departure times between 6 AM and 8:59 AM (3-hour period)
- PM Peak: trips with departure times between 2 PM and 5:59 PM (4-hour period)
- Off Peak: all other times outside the peak periods, including the inter-peak period, evening, and overnight.

While 6 AM has a generally low volume of trips, it has been included in the AM Peak period to remain consistent with previous analysis and as most trips during this hour are commute trips. Inclusion in the AM Peak provides us with a more comprehensive picture of commute flows in the region.

The expanded survey counts are based on a random sample of the population and should be understood to be estimates.

Exhibit – Table 34. Origin – Destination Matrix by District (24-Hour Trips, Expanded)

24-Hour Total

Origin \ Destination	City Core	East Hill	Landing /Priests Valley	Outlying Areas	City Centre/ Pandosy	Central Kelowna	Glenmore	Rutland	Mission	Black Mountain	Kelowna North	Duck Lake	Lake Country	Glenrosa /Westbank	Rose Valley	WFN	Peachland	RDCO West	RDCO East	Ext - Boundary	Ext - North Ok	Ext - North Ok S	Ext - South Ok	Outside Study Area	Westside	Vernon	Kelowna	Other Central Ok	Ext	Total Study Area	Total Survey
City Core	20,107	6,813	7,397	3,363	279	247	45	88	106	84	445	27	620	0	34	0	0	218	39	0	1,684	982	0	229	252	37,681	1,321	912	2,894	39,914	42,808
East Hill	6,977	5,690	1,797	821	269	176	33	0	46	0	437	41	436	43	28	19	0	34	0	0	1,036	889	27	182	124	15,285	1,004	560	2,135	16,848	18,983
Landing / Priests Valley	6,778	1,984	5,258	1,537	179	251	0	125	0	0	175	15	211	0	0	0	0	16	0	0	987	367	22	58	16	15,558	745	227	1,435	16,530	17,964
Outlying Areas	3,481	941	1,337	835	114	37	0	94	0	0	379	0	172	31	0	0	0	0	0	0	586	382	45	0	31	6,594	624	204	1,013	7,422	8,435
City Centre/Pandosy	229	312	215	55	32,794	19,395	7,789	4,941	7,262	2,992	3,286	41	1,674	2,630	3,211	2,066	299	389	627	0	0	88	246	0	8,595	811	78,500	10,896	334	90,208	90,541
Central Kelowna	323	148	143	37	18,400	37,478	10,188	10,280	6,732	4,568	4,450	236	2,236	2,473	2,304	1,889	558	281	1,018	24	57	110	144	179	7,505	651	92,332	10,758	513	103,741	104,254
Glenmore	45	33	0	0	7,950	9,731	13,026	1,480	994	836	4,375	97	512	338	485	254	44	70	185	0	34	15	138	105	1,191	78	38,489	1,888	292	40,455	40,747
Rutland	150	0	125	75	4,888	10,264	1,624	17,384	1,338	4,246	3,410	235	839	378	660	360	78	67	1,001	14	17	0	158	86	1,542	350	43,388	3,382	274	47,121	47,395
Mission	47	46	0	0	7,227	6,567	872	1,217	15,942	1,004	1,229	0	226	363	293	244	30	9	220	0	0	0	105	113	939	94	34,058	1,385	218	35,536	35,755
Black Mountain	38	46	0	0	2,878	4,729	691	4,466	886	4,220	1,113	0	262	76	309	43	0	7	174	32	0	0	53	118	435	84	18,985	871	204	19,939	20,143
Kelowna North	521	354	136	447	3,585	5,068	4,442	3,221	1,195	1,033	5,476	183	2,493	730	864	355	208	24	627	0	0	0	78	145	2,182	1,458	24,203	5,301	222	30,963	31,185
Duck Lake	27	41	15	0	69	170	81	261	10	0	168	104	631	17	0	0	0	0	0	0	0	0	0	0	17	83	862	648	0	1,593	1,593
Lake Country	835	398	109	149	1,673	1,735	471	981	223	305	2,576	615	15,291	137	274	55	0	21	61	0	111	106	62	125	488	1,490	8,579	15,840	404	25,909	26,313
Glenrosa / Westbank	0	0	43	31	2,948	2,089	266	348	213	77	845	17	111	11,850	6,154	5,955	1,343	174	83	15	12	37	621	603	25,476	74	6,803	25,670	1,289	32,546	33,835
Rose Valley	34	28	0	0	3,554	2,449	530	656	391	278	798	0	355	5,422	9,860	5,187	468	233	30	26	0	0	110	239	21,170	62	8,657	21,555	375	30,274	30,649
WFN	0	19	0	0	1,960	1,678	268	298	195	97	253	0	37	6,291	5,039	8,948	1,339	268	33	0	0	21	140	288	21,886	19	4,749	21,955	450	26,724	27,174
Peachland	0	0	0	0	322	595	14	96	93	0	176	0	31	1,351	618	953	2,541	189	0	0	0	0	500	148	5,652	0	1,297	5,683	648	6,980	7,628
RDCO West	178	85	44	0	258	248	28	45	69	0	59	0	21	286	256	242	184	821	26	0	47	42	64	28	1,789	307	708	1,837	181	2,851	3,032
RDCO East	55	0	0	0	611	855	195	1,012	172	279	615	0	46	124	41	33	0	26	806	48	17	0	0	30	224	55	3,739	1,076	96	4,869	4,965
Ext - Boundary	0	0	0	0	0	40	0	0	0	32	0	0	0	15	26	0	0	0	48	0	0	0	0	0	42	0	72	90	0	162	162
Ext - North Ok	1,736	1,056	823	630	37	20	34	0	0	0	0	0	74	26	0	0	0	47	17	0	246	37	0	32	74	4,245	91	165	315	4,502	4,817
Ext - North Ok S	1,083	891	433	328	113	35	0	0	15	20	0	0	153	61	0	21	0	13	0	0	0	154	0	0	95	2,734	183	249	154	3,166	3,320
Ext - South Ok	0	27	22	0	184	117	130	190	74	21	93	0	62	676	110	216	457	83	0	0	0	0	1,044	0	1,541	50	809	1,604	1,044	2,462	3,507
Outside Study Area	188	202	41	72	36	221	23	111	140	87	340	8	84	671	119	402	132	59	0	0	31	23	0	46	1,383	503	966	1,467	100	2,936	3,036
Westside	212	132	87	31	9,043	7,059	1,106	1,442	962	452	2,132	17	556	25,199	21,928	21,284	5,876	1,686	171	42	59	101	1,435	1,307	75,973	462	22,212	76,700	2,944	99,374	102,317
Vernon	37,344	15,429	15,789	6,556	842	710	78	307	152	84	1,437	83	1,440	74	62	19	0	268	39	0	4,293	2,621	95	469	423	75,118	3,694	1,902	7,477	80,714	88,191
Kelowna	1,379	981	634	614	77,791	93,402	38,712	43,251	34,360	18,899	23,507	895	8,873	7,003	8,127	5,212	1,217	847	3,851	70	108	213	922	745	22,406	3,609	330,817	35,130	2,058	369,555	371,613
Other Central Okanagan	1,101	529	196	180	11,326	9,648	1,771	3,436	1,357	1,036	5,324	632	15,893	25,460	22,244	21,372	5,876	1,733	1,038	90	188	207	1,497	1,461	76,684	2,007	34,530	93,615	3,443	130,152	133,596
External	3,007	2,176	1,320	1,030	370	432	187	301	229	161	433	8	374	1,449	255	640	589	202	66	0	277	214	1,044	78	3,135	7,532	2,121	3,575	1,614	13,228	14,842
Total Study Area	39,825	16,939	16,619	7,351	89,959	103,760	40,562	46,994	35,869	20,019	30,267	1,609	26,205	32,537	30,432	26,603	7,093	2,848	4,929	160	4,588	3,040	2,514	2,676	99,513	80,734	369,041	130,647	12,978	580,421	593,400
Total Survey	42,831	19,115	17,939	8,381	90,329	104,193	40,749	47,295	36,098	20,180	30,700	1,618	26,579	33,987	30,687	27,243	7,682	3,050	4,994	160	4,866	3,254	3,558	2,754	102,648	88,266	371,161	134,222	14,592	593,649	608,241

Exhibit – Table 35. Origin – Destination Matrix by District (AM Peak, Expanded)

AM Peak
(6AM-8:59AM)

AM Peak Origin \ Destination	City Core	East Hill	Landing / Priests Valley	Outlying Areas	City Centre/ Pandosy	Central Kelowna	Glenmore	Rutland	Mission	Black Mountain	Kelowna North	Duck Lake	Lake Country	Glenrosa / Westbank	Rose Valley	WFN	Peachland	RDCO West	RDCO East	Ext - Boundary	Ext - North Ok	Ext - North Ok S	Ext - South Ok	Outside Study Area	Westside	Vernon	Kelowna	Other Central Ok	Ext	Total Study Area	Total Survey
City Core	2,719	731	460	160	47	26	24	0	0	0	228	13	134	0	0	0	0	0	0	0	408	390	0	19	0	4,070	338	134	816	4,543	5,360
East Hill	2,289	1,746	222	37	215	76	0	0	28	0	216	0	156	0	0	0	0	0	0	0	399	279	27	91	0	4,293	535	156	796	4,984	5,780
Landing / Priests Valley	1,992	648	1,418	179	61	14	0	42	0	0	69	15	53	0	0	0	0	0	0	0	515	115	0	0	0	4,237	201	53	630	4,490	5,120
Outlying Areas	898	427	306	115	0	0	0	16	0	0	138	0	0	0	0	0	0	0	0	0	187	25	0	0	0	1,745	154	0	212	1,899	2,112
City Centre/Pandosy	41	0	0	0	6,208	3,449	935	324	686	251	1,487	0	102	218	263	301	38	0	17	0	0	88	149	0	820	41	13,339	939	237	14,319	14,556
Central Kelowna	0	0	0	0	2,773	3,791	1,680	622	502	195	836	0	123	75	182	49	13	0	20	0	57	35	42	19	319	0	10,399	462	154	10,861	11,015
Glenmore	21	33	0	0	3,557	2,005	3,168	456	121	94	1,882	0	101	34	264	57	14	0	16	0	34	0	44	0	368	54	11,282	485	77	11,821	11,899
Rutland	46	0	22	0	2,015	2,743	378	4,576	275	740	1,456	90	190	108	192	18	0	22	49	0	17	0	49	67	340	67	12,273	579	132	12,919	13,051
Mission	47	18	0	0	2,214	1,958	83	169	5,366	120	497	0	0	35	40	51	0	0	0	0	0	0	31	21	126	65	10,408	126	52	10,600	10,652
Black Mountain	20	46	0	0	1,093	1,545	163	1,303	288	1,450	566	0	38	52	119	18	0	0	0	0	0	0	21	0	189	66	6,408	227	21	6,701	6,721
Kelowna North	100	15	0	24	594	673	606	359	82	118	1,258	0	156	63	33	0	0	0	0	0	0	0	67	19	96	139	3,690	252	86	4,081	4,167
Duck Lake	7	41	0	0	38	39	60	58	10	0	79	49	180	0	0	0	0	0	0	0	0	0	0	0	0	48	332	180	0	560	560
Lake Country	225	97	23	32	953	556	71	397	89	88	1,261	74	3,428	0	187	0	0	0	0	0	17	59	0	48	187	377	3,489	3,615	123	7,481	7,604
Glenrosa / Westbank	0	0	0	16	1,408	814	62	159	72	0	490	17	43	3,113	2,671	733	56	111	24	0	0	0	373	191	6,684	16	3,022	6,752	565	9,789	10,354
Rose Valley	0	0	0	0	1,524	547	116	219	152	34	474	0	65	708	3,404	722	12	0	0	26	0	0	89	56	4,846	0	3,066	4,911	171	7,977	8,148
WFN	0	19	0	0	730	434	34	63	19	56	148	0	19	479	1,239	971	178	0	33	0	0	21	105	32	2,865	19	1,485	2,917	159	4,421	4,580
Peachland	0	0	0	0	98	110	0	25	63	0	133	0	0	345	260	134	383	0	0	0	0	0	256	85	1,121	0	429	1,121	342	1,550	1,891
RDCO West	50	10	10	0	128	105	28	14	0	0	14	0	0	114	178	38	0	61	0	0	0	42	32	17	391	71	288	391	92	750	842
RDCO East	39	0	0	0	373	278	45	371	0	105	260	0	35	0	12	0	0	0	284	0	0	0	0	0	12	39	1,431	331	0	1,802	1,802
Ext - Boundary	0	0	0	0	0	0	0	0	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	0	0	32	32
Ext - North Ok	95	98	0	37	0	0	0	0	0	0	0	0	23	0	0	0	0	0	0	0	44	0	0	0	0	231	0	23	44	254	298
Ext - North Ok S	61	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0	0	0	84	0	0	20	84	103
Ext - South Ok	0	0	0	0	67	0	0	0	0	0	0	0	0	0	0	0	0	20	0	0	0	0	97	0	20	0	67	20	97	88	185
Outside Study Area	31	16	0	46	0	0	23	0	0	0	60	0	0	63	0	43	12	0	0	0	0	23	0	0	118	94	83	118	23	294	317
Westside	50	29	10	16	3,889	2,009	241	480	305	90	1,258	17	127	4,758	7,752	2,598	629	172	57	26	0	63	856	382	15,909	106	8,289	16,093	1,328	24,488	25,816
Vernon	7,897	3,551	2,406	491	323	116	24	58	28	0	651	28	343	0	0	0	0	0	0	0	1,509	809	27	110	0	14,345	1,228	343	2,455	15,916	18,371
Kelowna	281	154	22	24	18,492	16,202	7,072	7,867	7,329	2,969	8,061	139	890	585	1,093	495	65	22	102	0	108	123	402	126	2,259	480	68,131	3,250	759	71,862	72,620
Other Central Okanagan	314	126	34	48	5,214	2,843	357	1,248	394	283	2,779	91	3,590	4,758	7,950	2,598	629	172	341	26	17	122	856	430	16,107	523	13,209	20,038	1,451	33,771	35,221
External	188	137	0	83	67	0	23	0	0	32	60	0	23	63	0	43	12	20	0	0	44	43	97	0	138	408	182	161	184	752	935
Total Study Area	8,493	3,831	2,461	563	24,029	19,162	7,453	9,173	7,752	3,252	11,491	258	4,823	5,343	9,043	3,092	694	194	443	26	1,633	1,054	1,285	666	18,366	15,348	82,569	23,632	4,664	121,549	126,213
Total Survey	8,680	3,968	2,461	647	24,096	19,162	7,476	9,173	7,752	3,285	11,550	258	4,846	5,406	9,043	3,135	706	214	443	26	1,676	1,097	1,382	666	18,504	15,756	82,751	23,793	4,848	122,300	127,148

Exhibit – Table 36. Origin – Destination Matrix by District (PM Peak, Expanded)

PM Peak
(2PM-5:59PM)

PM Peak Origin \ Destination	City Core	East Hill	Landing / Priests Valley	Outlying Areas	City Centre/Pandosy	Central Kelowna	Glenmore	Rutland	Mission	Black Mountain	Kelowna North	Duck Lake	Lake Country	Glenrosa / Westbank	Rose Valley	WFN	Peachland	RDCO West	RDCO East	Ext - Boundary	Ext - North Ok	Ext - North Ok S	Ext - South Ok	Outside Study Area	Westside	Vernon	Kelowna	Other Central Ok	Ext	Total Study Area	Total Survey
City Core	7,116	3,200	3,114	1,398	101	54	21	88	47	20	93	14	270	0	34	0	0	61	39	0	494	367	0	90	95	14,828	438	404	951	15,670	16,621
East Hill	1,998	2,215	697	468	0	0	33	0	0	0	10	0	119	0	0	19	0	18	0	0	284	284	0	47	37	5,378	43	157	614	5,578	6,192
Landing / Priests Valley	1,602	652	2,022	780	25	108	0	61	0	0	11	0	133	0	0	0	0	0	0	0	175	108	0	0	0	5,056	205	133	283	5,395	5,677
Outlying Areas	542	160	518	346	32	0	0	37	0	0	95	0	60	31	0	0	0	0	0	0	183	172	0	0	31	1,565	164	92	355	1,821	2,176
City Centre/Pandosy	117	195	78	23	12,632	6,479	3,788	2,632	3,342	1,403	629	18	750	1,226	1,578	1,006	114	178	398	0	0	0	49	0	4,102	412	30,923	5,249	49	36,585	36,634
Central Kelowna	118	41	73	0	6,874	12,918	3,982	4,778	3,265	1,936	1,151	84	1,086	1,144	1,051	765	347	143	434	24	0	75	25	124	3,451	232	34,988	4,971	248	40,192	40,440
Glenmore	24	0	0	0	2,099	3,638	5,940	623	360	518	737	76	164	165	183	130	0	44	55	0	0	0	25	17	522	24	13,991	741	42	14,756	14,798
Rutland	62	0	42	16	1,190	2,771	763	6,940	361	1,393	511	54	413	153	315	161	25	14	335	0	0	0	59	0	667	120	13,983	1,416	59	15,519	15,578
Mission	0	28	0	0	1,952	1,874	208	494	6,675	474	198	0	157	63	103	38	30	9	91	0	0	0	0	58	243	28	11,875	490	58	12,394	12,452
Black Mountain	0	0	0	0	643	1,037	212	1,416	207	1,769	109	0	57	24	0	25	0	0	119	0	0	0	0	40	49	0	5,393	225	40	5,618	5,658
Kelowna North	122	315	58	185	1,929	2,152	2,672	1,901	578	570	2,001	97	1,286	466	403	138	123	24	266	0	0	0	0	67	1,154	679	11,900	2,706	67	15,285	15,352
Duck Lake	13	0	15	0	0	59	0	155	0	0	29	48	206	17	0	0	0	0	0	0	0	0	0	0	17	28	292	223	0	542	542
Lake Country	355	129	0	52	376	335	253	269	73	64	418	274	5,897	69	37	35	0	21	31	0	0	48	0	36	163	537	2,062	6,091	84	8,690	8,773
Glenrosa / Westbank	0	0	0	0	422	435	60	87	46	24	98	0	0	4,877	1,853	2,138	587	31	14	0	0	23	44	306	9,486	0	1,172	9,500	373	10,672	11,045
Rose Valley	0	28	0	0	803	910	250	177	163	183	71	0	156	2,952	4,433	2,308	208	160	12	0	0	0	0	99	10,061	28	2,558	10,229	99	12,815	12,913
WFN	0	0	0	0	413	264	85	56	128	7	0	0	0	2,334	1,537	3,299	561	121	0	0	0	0	10	74	7,851	0	953	7,851	84	8,804	8,888
Peachland	0	0	0	0	57	128	14	21	0	0	0	0	0	249	132	335	1,023	110	0	0	0	0	69	8	1,850	0	220	1,850	76	2,069	2,146
RDCO West	16	0	34	0	34	0	0	0	22	0	35	0	0	64	0	31	146	293	0	0	17	0	0	0	534	50	91	534	17	674	691
RDCO East	0	0	0	0	93	207	53	170	119	51	114	0	0	14	29	0	0	0	358	0	0	0	0	0	43	0	808	401	0	1,209	1,209
Ext - Boundary	0	0	0	0	0	0	0	0	0	0	0	0	0	15	26	0	0	0	48	0	0	0	0	0	42	0	0	90	0	90	90
Ext - North Ok	1,127	659	499	242	37	0	34	0	0	0	0	0	17	26	0	0	0	0	17	0	93	37	0	0	26	2,527	71	61	130	2,658	2,788
Ext - North Ok S	556	249	164	109	113	35	0	0	0	20	0	0	90	14	0	21	0	0	0	0	0	79	0	0	35	1,078	168	125	79	1,372	1,451
Ext - South Ok	0	27	0	0	40	51	34	67	47	21	67	0	47	449	40	127	247	23	0	0	0	0	290	0	887	27	327	934	290	1,288	1,578
Outside Study Area	19	141	18	0	0	64	0	42	21	41	74	0	48	251	56	168	12	42	0	0	0	0	0	0	529	178	242	577	0	996	996
Westside	16	28	34	0	1,729	1,737	410	341	358	214	204	0	156	10,476	7,955	8,111	2,525	714	26	0	17	23	122	487	29,781	77	4,993	29,963	650	35,034	35,683
Vernon	11,258	6,226	6,351	2,992	159	162	54	186	47	20	209	14	583	31	34	19	0	78	39	0	1,136	931	0	137	163	26,828	850	786	2,204	28,463	30,667
Kelowna	455	579	266	224	27,319	30,929	17,565	18,939	14,789	8,064	5,364	377	4,118	3,257	3,633	2,262	639	412	1,698	24	0	75	159	305	10,205	1,524	123,345	16,021	563	140,890	141,453
Other Central Okanagan	371	157	34	52	2,198	2,279	716	780	550	329	737	274	6,053	10,559	8,021	8,146	2,525	736	415	0	17	71	122	523	29,987	614	7,863	36,455	733	44,932	45,666
External	1,702	1,076	680	351	190	150	68	108	69	82	141	0	202	756	122	316	260	65	66	0	93	116	290	0	1,519	3,809	808	1,786	499	6,403	6,902
Total Study Area	12,085	6,962	6,650	3,268	29,676	33,369	18,335	19,906	15,386	8,413	6,310	665	10,754	13,847	11,689	10,428	3,165	1,226	2,153	24	1,153	1,077	281	964	40,355	28,966	132,059	53,261	3,500	214,286	217,786
Total Survey	13,787	8,039	7,330	3,619	29,866	33,519	18,403	20,014	15,455	8,495	6,451	665	10,955	14,603	11,812	10,744	3,424	1,291	2,218	24	1,247	1,193	571	964	41,874	32,775	132,867	55,047	3,999	220,689	224,689

Exhibit – Table 37. Origin – Destination Matrix by District (Off Peak, Expanded)

Off Peak

Off Peak Origin \ Destination	City Core	East Hill	Landing / Priests Valley	Outlying Areas	City Centre/Pandosy	Central Kelowna	Glenmore	Rutland	Mission	Black Mountain	Kelowna North	Duck Lake	Lake Country	Glenrosa / Westbank	Rose Valley	WFN	Peachland	RDCO West	RDCO East	Ext - Boundary	Ext - North Ok	Ext - North Ok S	Ext - South Ok	Outside Study Area	Westside	Vernon	Kelowna	Other Central Ok	Ext	Total Study Area	Total Survey
City Core	10,272	2,883	3,823	1,804	131	167	0	0	59	64	125	0	216	0	0	0	0	157	0	0	782	224	0	120	157	18,782	545	374	1,127	19,701	20,828
East Hill	2,691	1,729	879	317	55	100	0	0	18	0	212	41	161	43	28	0	0	16	0	0	353	327	0	44	86	5,615	426	247	724	6,287	7,011
Landing / Priests Valley	3,184	685	1,818	578	93	129	0	22	0	0	96	0	25	0	0	0	0	16	0	0	298	145	22	58	16	6,264	339	41	522	6,645	7,167
Outlying Areas	2,042	354	513	374	82	37	0	41	0	0	145	0	112	0	0	0	0	0	0	0	215	185	45	0	0	3,284	306	112	446	3,702	4,147
City Centre/Pandosy	71	118	137	32	13,955	9,467	3,066	1,986	3,234	1,338	1,170	22	822	1,186	1,371	759	147	211	212	0	0	0	48	0	3,673	358	34,239	4,707	48	39,304	39,351
Central Kelowna	205	107	70	37	8,753	20,769	4,527	4,880	2,965	2,436	2,463	152	1,026	1,254	1,070	1,075	198	138	564	0	0	0	77	36	3,735	418	46,944	5,325	112	52,688	52,800
Glenmore	0	0	0	0	2,293	4,088	3,918	401	513	224	1,756	21	247	139	38	68	30	26	114	0	0	15	69	88	301	0	13,215	662	172	13,877	14,050
Rutland	43	0	61	59	1,683	4,749	483	5,868	703	2,113	1,443	91	236	117	153	180	53	31	616	14	0	0	50	19	535	163	17,132	1,388	83	18,683	18,765
Mission	0	0	0	0	3,061	2,735	581	554	3,901	409	533	0	69	265	150	155	0	0	130	0	0	0	74	34	570	0	11,774	768	108	12,543	12,651
Black Mountain	18	0	0	0	1,142	2,148	316	1,747	391	1,001	438	0	167	0	191	0	0	7	55	32	0	0	32	79	197	18	7,183	419	144	7,620	7,764
Kelowna North	299	24	78	238	1,062	2,243	1,164	961	535	345	2,218	86	1,051	201	428	218	85	0	361	0	0	0	11	59	931	639	8,614	2,343	70	11,597	11,667
Duck Lake	7	0	0	0	30	72	21	48	0	0	60	7	246	0	0	0	0	0	0	0	0	0	0	0	0	7	238	246	0	492	492
Lake Country	254	171	86	64	344	844	147	315	61	153	897	267	5,966	68	51	19	0	0	30	0	95	0	62	41	138	576	3,028	6,134	198	9,739	9,936
Glenrosa / Westbank	0	0	43	15	1,117	840	143	103	96	53	257	0	68	3,860	1,630	3,084	699	33	44	15	12	14	204	106	9,306	58	2,608	9,418	351	12,085	12,436
Rose Valley	34	0	0	0	1,228	992	164	259	77	61	253	0	135	1,762	2,022	2,157	247	74	17	0	0	0	21	85	6,262	34	3,033	6,415	105	9,482	9,587
WFN	0	0	0	0	817	980	148	178	49	34	105	0	18	3,479	2,264	4,678	601	147	0	0	0	0	26	181	11,169	0	2,311	11,187	207	13,498	13,706
Peachland	0	0	0	0	166	357	0	51	30	0	44	0	31	757	226	485	1,135	78	0	0	0	0	175	55	2,682	0	648	2,712	230	3,360	3,590
RDCO West	111	75	0	0	96	144	0	31	47	0	10	0	21	107	79	172	39	467	26	0	30	0	32	11	864	186	329	912	72	1,427	1,499
RDCO East	15	0	0	0	145	370	97	472	53	122	242	0	11	110	0	33	0	26	164	48	17	0	0	30	169	15	1,500	344	96	1,859	1,954
Ext - Boundary	0	0	0	0	0	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	0	0	40	40
Ext - North Ok	514	298	325	351	0	20	0	0	0	0	0	0	34	0	0	0	0	47	0	0	109	0	0	32	47	1,488	20	81	141	1,590	1,731
Ext - North Ok S	465	620	270	218	0	0	0	0	15	0	0	0	64	47	0	0	0	13	0	0	0	55	0	0	60	1,573	15	123	55	1,711	1,766
Ext - South Ok	0	0	22	0	77	66	96	123	27	0	26	0	15	227	69	89	209	40	0	0	0	0	657	0	634	22	415	650	657	1,087	1,744
Outside Study Area	138	44	24	26	36	157	0	69	119	46	207	8	36	357	63	192	107	17	0	0	31	0	0	46	737	232	642	773	77	1,646	1,724
Westside	146	75	43	15	3,425	3,312	455	622	298	148	670	0	273	9,965	6,221	10,576	2,721	800	88	15	42	14	457	438	30,283	279	8,930	30,644	966	39,852	40,818
Vernon	18,189	5,651	7,033	3,073	361	433	0	63	77	64	577	41	514	43	28	0	0	189	0	0	1,648	881	68	222	260	33,945	1,615	774	2,819	36,334	39,153
Kelowna	643	249	346	366	31,980	46,271	14,076	16,445	12,242	7,866	10,082	379	3,865	3,162	3,401	2,454	513	413	2,051	46	0	15	361	314	9,943	1,604	139,340	15,859	736	156,803	157,539
Other Central Okanagan	415	246	129	80	3,914	4,526	699	1,408	412	423	1,808	267	6,250	10,143	6,272	10,628	2,721	826	282	64	154	14	519	509	30,590	870	13,457	37,122	1,259	51,449	52,709
External	1,117	962	640	595	113	282	96	193	161	46	233	8	149	631	132	281	317	118	0	0	141	55	657	78	1,478	3,315	1,131	1,628	931	6,073	7,004
Total Study Area	19,247	6,146	7,508	3,519	36,254	51,230	14,774	17,916	12,731	8,354	12,467	686	10,629	13,347	9,700	13,083	3,234	1,428	2,333	109	1,802	910	948	1,045	40,792	36,420	154,413	53,754	4,814	244,587	249,401
Total Survey	20,364	7,108	8,148	4,114	36,367	51,512	14,870	18,109	12,892	8,400	12,699	694	10,778	13,978	9,833	13,363	3,551	1,545	2,333	109	1,943	964	1,605	1,123	42,270	39,735	155,544	55,382	5,745	250,660	256,405

6. Detailed Household, Vehicle and Demographic Characteristics

This section provides a closer analysis of the households and populations in the study area, including trends in the growth of households, population, vehicles, bicycles and other micromobility devices from the baseline survey in 2007 to the 2013, 2018 and 2024 survey cycles.

Household characteristics and population demographics are also profiled, along with tracking of selected trends for these demographics. This demographic profile will serve as context for travel patterns and trends analyzed earlier in this report.

6.1 Household Characteristics

6.1.1 Dwelling Type

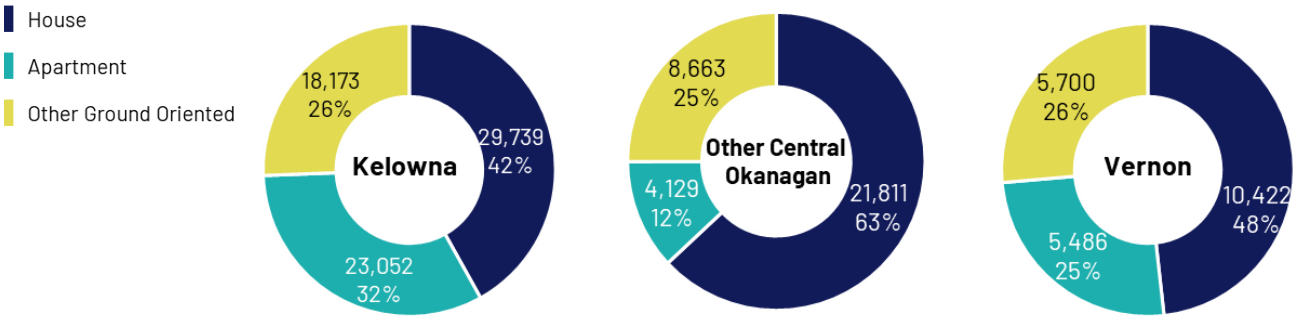
Dwelling type often has a strong relationship to household income, vehicle availability, proximity to transit, and the closeness of services. Household dwelling types for Kelowna, the rest of Central Okanagan and Vernon are compared in **Figure 71**.

In Kelowna, 42% of households live in single-detached dwellings, with another one-third living in other ground-oriented dwellings (row or town house, semi-detached or mobile home), and one-quarter living in apartments or condos. At a district level, more than half of the households in City Centre/Pandosy and Central Kelowna are living in apartments.

In the rest of the Central Okanagan, just over 60% of households live in single family dwellings.

In Vernon, approximately 50% of households live in single-family dwellings, while apartments and other ground-oriented dwelling types account for about one-quarter of households each. Within the City of Vernon, the City Core district has the highest concentration of apartments, with 48% of households living in apartments.

Exhibit – Figure 71. Households by Dwelling Type, 2024



6.1.2 Household Size

The distribution of households by number of household members is illustrated in the charts below.

Kelowna and Vernon generally have more single-person households than geographies in other areas of the Central Okanagan. Just one-quarter of those in other areas of the Central Okanagan are single-person households compared with more than 30% of households in Kelowna and Vernon (31% and 34%, respectively). This appears to be driven largely by the higher-population districts which have a larger proportion of apartments or condos – City Core in Vernon and City Centre/Pandosy and Central Kelowna in Kelowna.

Comparison to the survey results in 2018 suggest a slight decline in 4 person households across the study area.

Exhibit – Figure 72. Household Size by Sub-Area, 2024

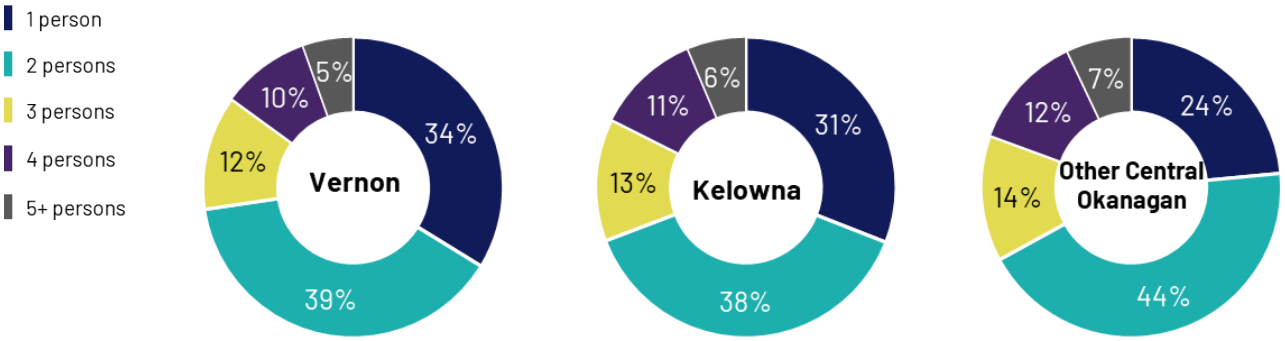


Exhibit – Table 38. Average Household Size by Sub-Area, 2024

	Avg. Persons per Household
Vernon	2.14
Kelowna	2.24
Other Central Okanagan	2.35

6.1.3 Household Income

Income is an important consideration for transportation as it is often correlated to transportation behaviours. The household income profile of each of the geographic areas is presented in **Figure 73.**

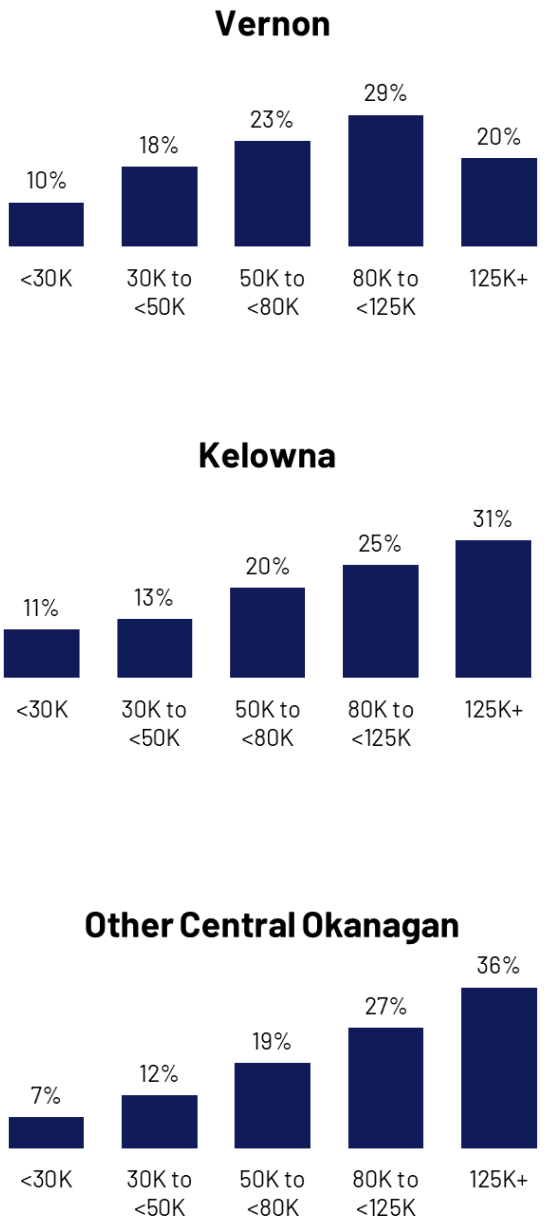
Consistent with 2018, the Other Central Okanagan area generally appears more affluent than other study areas, with 36% of households having incomes of $125,000 or more per year. This is compared with 31% of households in Kelowna and 20% in Vernon.

Kelowna follows a similar income distribution to Other Central Okanagan, though with a higher proportion of households bringing in less than $30,000 per year (11% and 7% respectively), and a lower proportion of households earning at least $125,000 (31% vs. 36% in other parts of the Central Okanagan).

Vernon appears to be less affluent as a whole, with nearly 3 in 10 (28%) households having incomes of less than $50,000 per year, compared with 24% in Kelowna and 19% in other parts of the Central Okanagan.

It is important to note that 15% of households surveyed either did not know their household income range or declined to provide it. As such, survey results by household income do not reflect the total number of households in the region and should be interpreted with some degree of caution.

Exhibit – Figure 73. Household Income (% of Households that Provided Response), 2024



6.2 Household Vehicles

6.2.1. Household Vehicles, 2007 to 2024

The expanded survey results indicate there are approximately 222,200 insured household vehicles (including cars, light trucks, vans and motorcycles and including vehicles provided by employers that household members use for commuting or personal business). This is an increase from the expanded survey counts of 186,800 in 2018, 184,400 in 2013 and 160,700 in 2007 for a 38% increase over 17 years. In the 17 years since the 2007 baseline survey, the 38% increase in vehicles falls slightly short of population growth (44% across this period).

The growth in number of household vehicles by study area is depicted below. Vernon is the only area where the increase in the number of vehicles outpaced population growth (20% increase in vehicles vs. 15% for population). The increase in vehicles (22%) versus population (21%) is generally comparable in Other Central Okanagan, while Kelowna's population growth outpaced the number of vehicles (22% vs. 17% for vehicles).

Exhibit – Figure 74. Total Household Vehicles (Expanded), 2007-2024

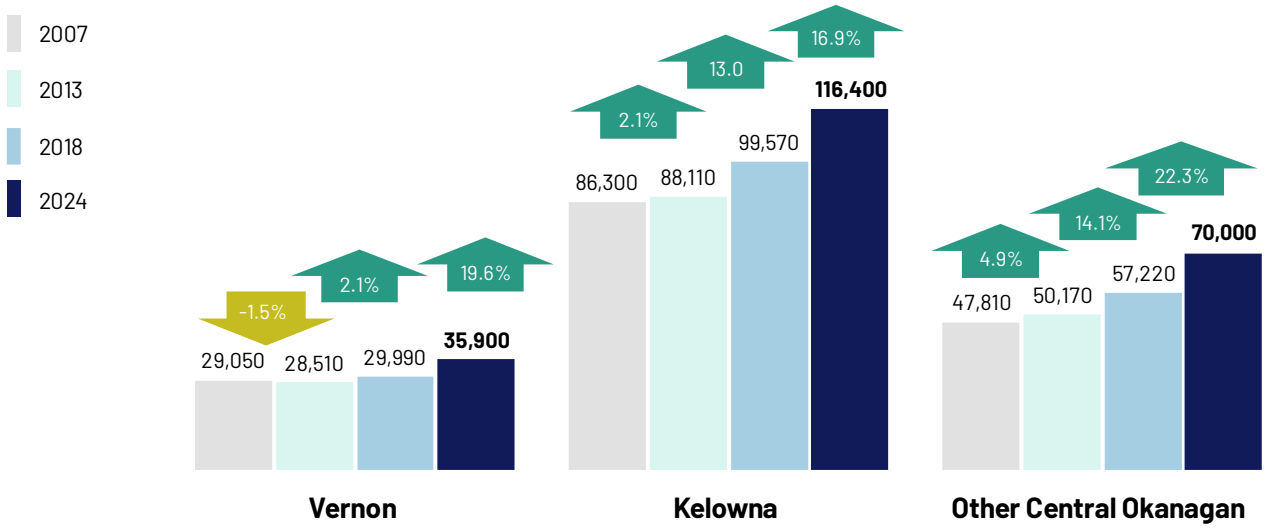


Figure 75 below illustrates trends in vehicle ownership. The average number of vehicles per household has increased dramatically in Vernon, rebounding to levels seen in the 2007 baseline study. Other Central Okanagan has also seen an increase in the average number of vehicles per households since 2018 though to a lesser extent, while Kelowna has seen a slight softening.

The percentage of households with at least one vehicle follows a similar trend, with a slight increase to 96% of households in Vernon and a slight decline in Kelowna (from 95% in 2018 to 93% in 2024). Virtually all households in Other Central Okanagan have a vehicle (99%).

Exhibit – Figure 75. Trends in Vehicle Ownership, 2007-2024

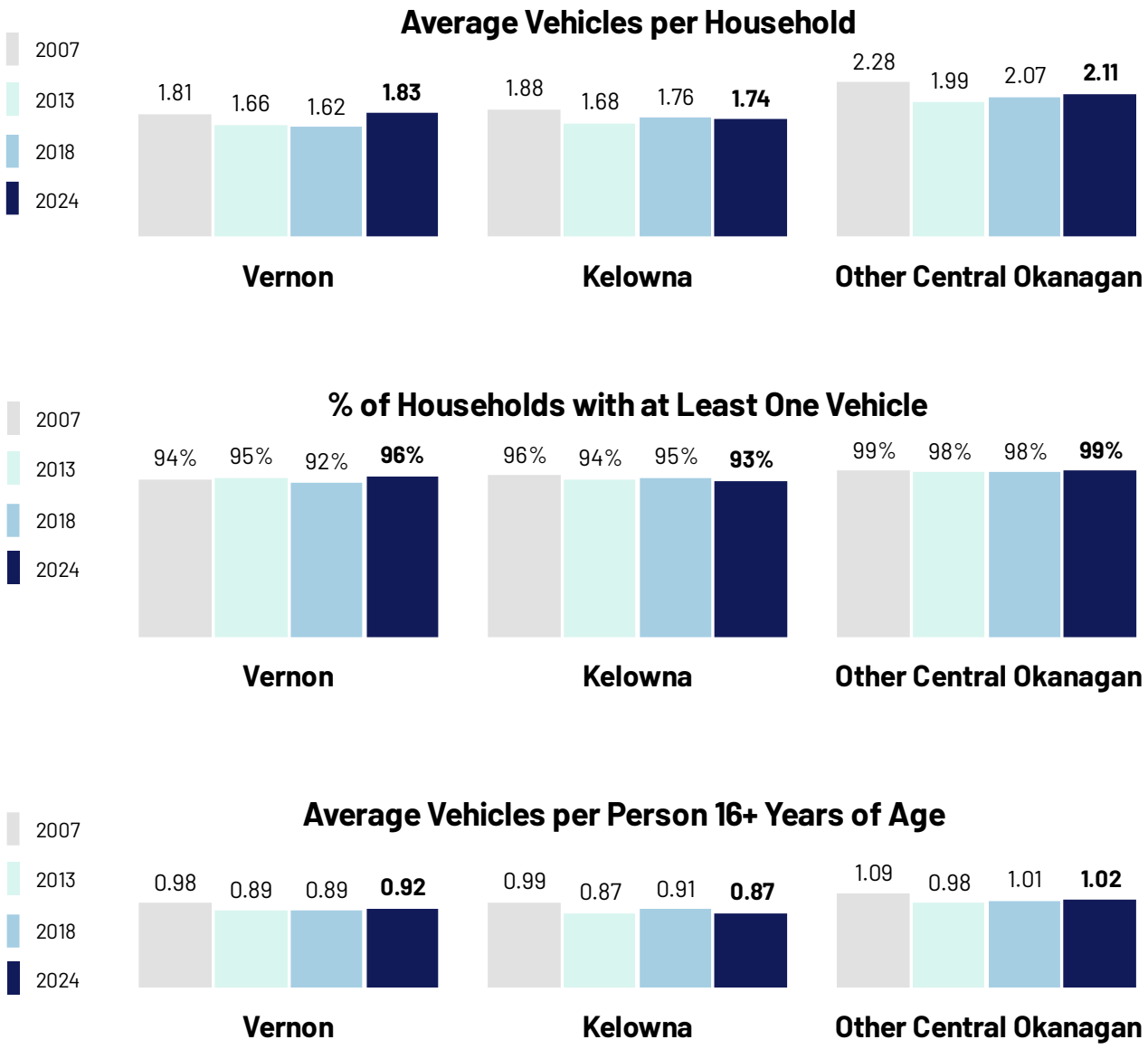
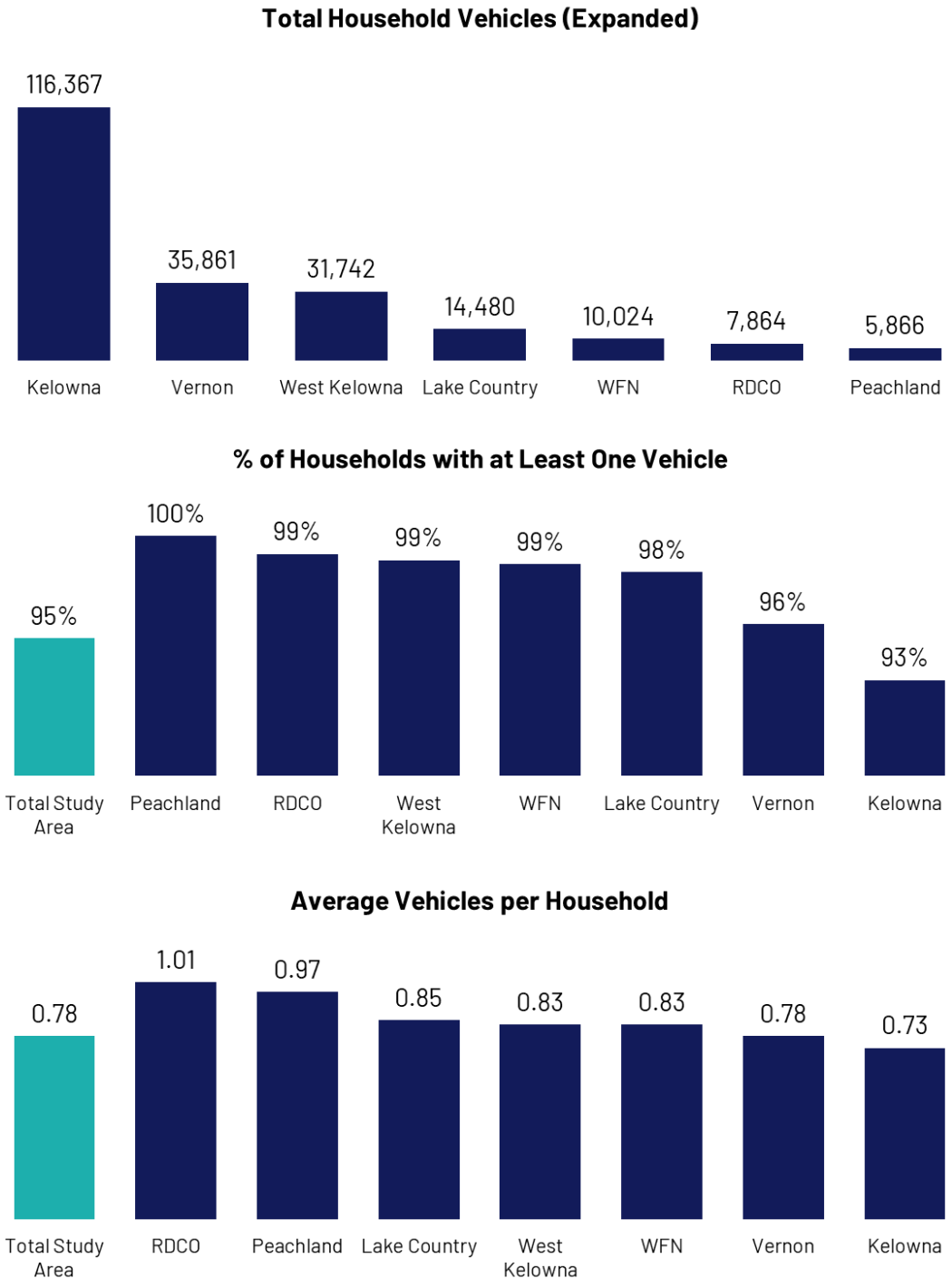


Figure 76 on the following page illustrates differences in vehicle ownership by municipality. All households in Peachland have at least one vehicle, with nearly universal vehicle ownership in RDCO, West Kelowna, Westbank First Nation and Lake Country. RDCO and Peachland have the highest proportion of vehicles per household with approximately 1 vehicle per household on average (1.01 and 0.97, respectively). In contrast, Kelowna has the fewest average vehicles per household (0.73).

Exhibit – Figure 76. Vehicle Ownership by Municipality, 2024



6.2.2 Vehicle Type

The distributions of household vehicles by type and fuel types are presented in **Figure 77** and **Figure 78** below. Similar to 2018, Other Central Okanagan has a greater proportion of pickup trucks and vans compared with Vernon and Kelowna. Looking at fuel types, uptake of hybrid and electric vehicles has increased across all areas since 2018, though Kelowna has slightly more electric vehicles than other sub-areas (3.1% vs. 2.5% in Other Central Okanagan and Vernon).

Exhibit – Figure 77. Vehicle Type (Expanded) by Sub-Area, 2024

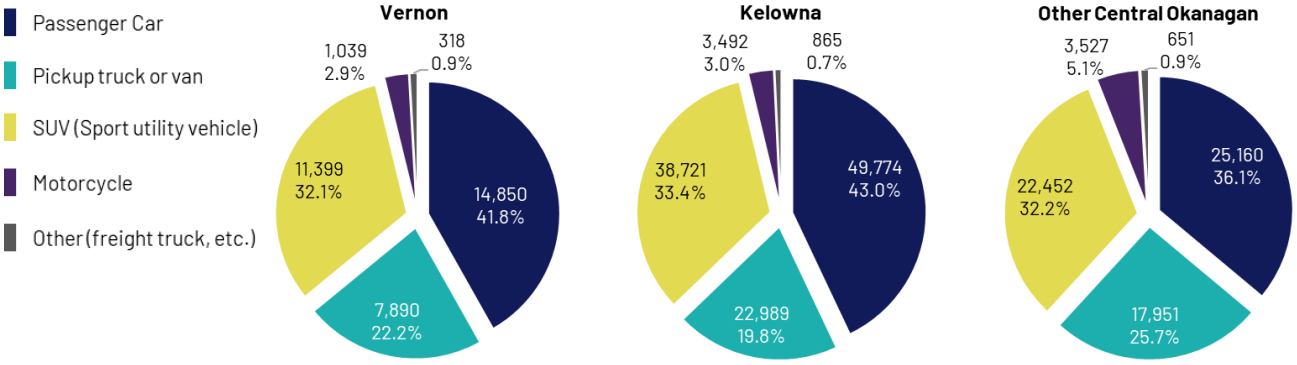
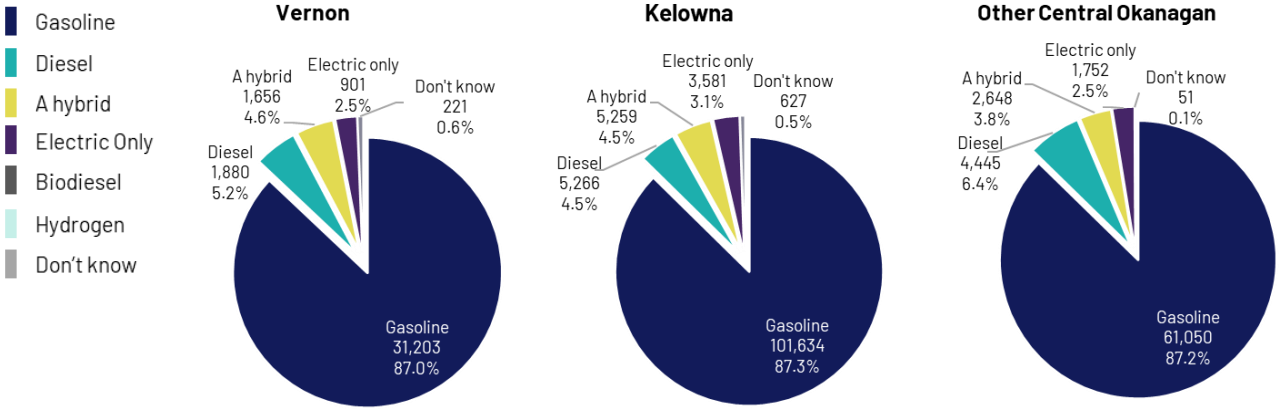


Exhibit – Figure 78. Vehicle Fuel Type (Expanded) by Sub-Area, 2024



6.3.3 Relationship between household characteristics and vehicle availability

Figure 79 illustrates the relationship between household size and availability of household vehicles across the study area. Similar to 2018, single-person households are somewhat less likely to have vehicles, whereas nearly all households with two or more people are likely to have at least one vehicle. As household size increases, so too does the number of vehicles per household. As household size increases, there is a corresponding decline in the number of vehicles per household member over the age of 16 years age.

Exhibit – Figure 79. Relationship of Household Size to Vehicle Access – Study Area, 2024

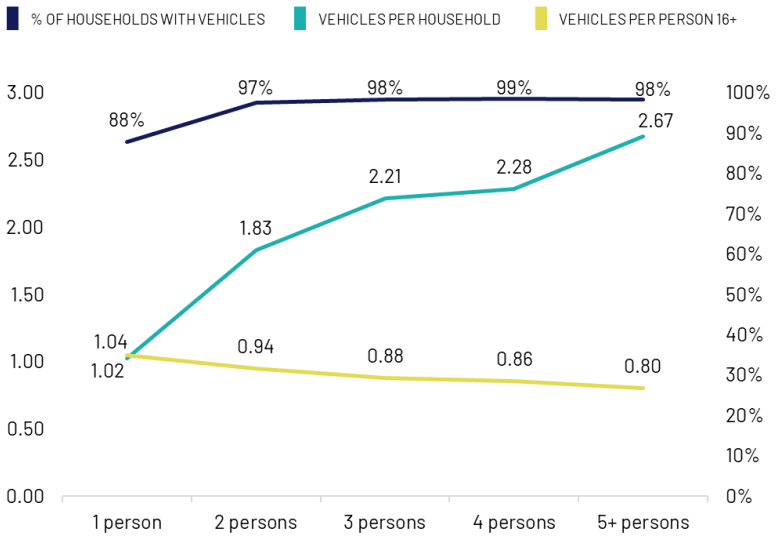
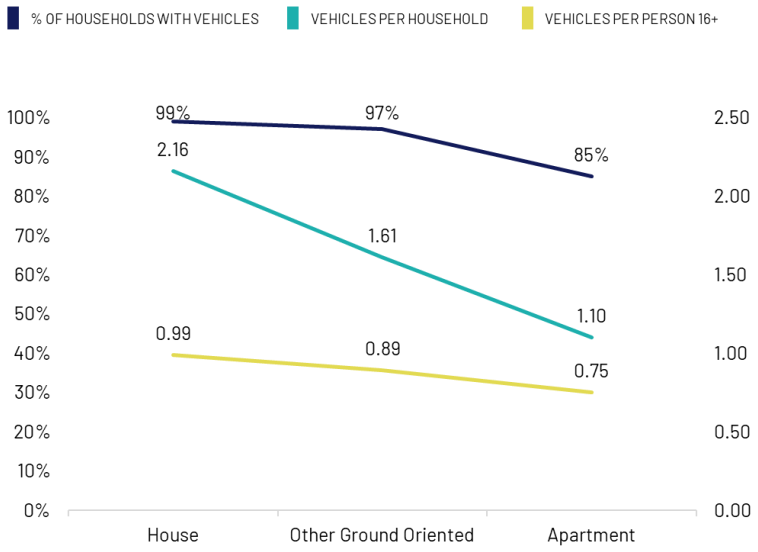


Figure 80 depicts the relationship of dwelling type to vehicle availability. The average number of vehicles per single-detached house is 2.16, dropping to 1.61 vehicles per households for other ground-oriented dwellings (townhouses, duplexes, etc.) and 1.10 for apartments. This is a similar trend to observations in 2018, though with a slightly lower average number of vehicles across the board in 2024.

Exhibit – Figure 80. Relationship of Dwelling Type to Vehicle Access – Study Area, 2024



The survey results by geographic sub-area are detailed in **Table 39**. The overall trends observed across the study area are largely mirrored within each geographic area, with the exception of generally higher levels of vehicle ownership in Other Central Okanagan. This can likely be explained by geographical factors, including more dispersed suburban and urban areas with less local accessibility to jobs, retailers or local services for personal business resulting in greater reliance on household vehicles to get around.

Exhibit – Table 39. Vehicles per Household by Household Size

Geography	Household Characteristic	Households	% of Households with Vehicles	Vehicles	Vehicles per Household	Persons 16+	Vehicles per Persons 16+
Kelowna	Total	70,964	95%	116,367	1.74	134,363	0.87
Rest of Central Okanagan	Total	34,604	98%	69,977	2.11	68,662	1.02
Vernon	Total	21,609	92%	35,861	1.83	38,883	0.92
Household Size							
Kelowna	1 Person 2 Persons 3 Persons 4 Persons 5+ Persons	21,959 27,166 9,361 7,962 4,516	83% 96% 98% 98% 98%	20,916 46,951 19,736 17,535 11,229	0.95 1.73 2.11 2.20 2.49	21,772 52,889 23,366 20,721 15,614	0.96 0.89 0.84 0.85 0.72
Rest of Central Okanagan	1 Person 2 Persons 3 Persons 4 Persons 5+ Persons	8,134 15,057 4,696 4,285 2,433	97% 99% 100% 100% 98%	9,816 30,503 11,606 10,524 7,528	1.21 2.03 2.47 2.46 3.09	7,946 28,992 12,165 11,626 7,933	1.24 1.05 0.95 0.91 0.95
Vernon	1 Person 2 Persons 3 Persons 4 Persons 5+ Persons	7,299 8,403 2,666 2,062 1,179	91% 98% 97% 97% 98%	7,539 15,057 5,677 4,618 2,970	1.03 1.79 2.13 2.24 2.52	6,909 16,044 6,559 5,830 3,541	1.09 0.94 0.87 0.79 0.84
Dwelling Type							
Kelowna	House Other Ground Oriented Apartment	29,739 18,173 23,052	99% 96% 83%	63,319 28,510 24,538	2.13 1.56 1.06	66,606 32,975 34,781	0.95 0.83 0.71
Rest of Central Okanagan	House Other Ground Oriented Apartment	21,811 8,663 4,129	99% 98% 97%	50,118 14,559 5,300	2.30 1.42 1.28	47,120 15,559 5,983	1.06 0.81 0.89
Vernon	House Other Ground Oriented Apartment	10,422 5,700 5,486	99% 96% 88%	20,576 9,173 6,112	1.97 1.73 1.11	21,293 10,254 7,336	0.97 0.88 0.83

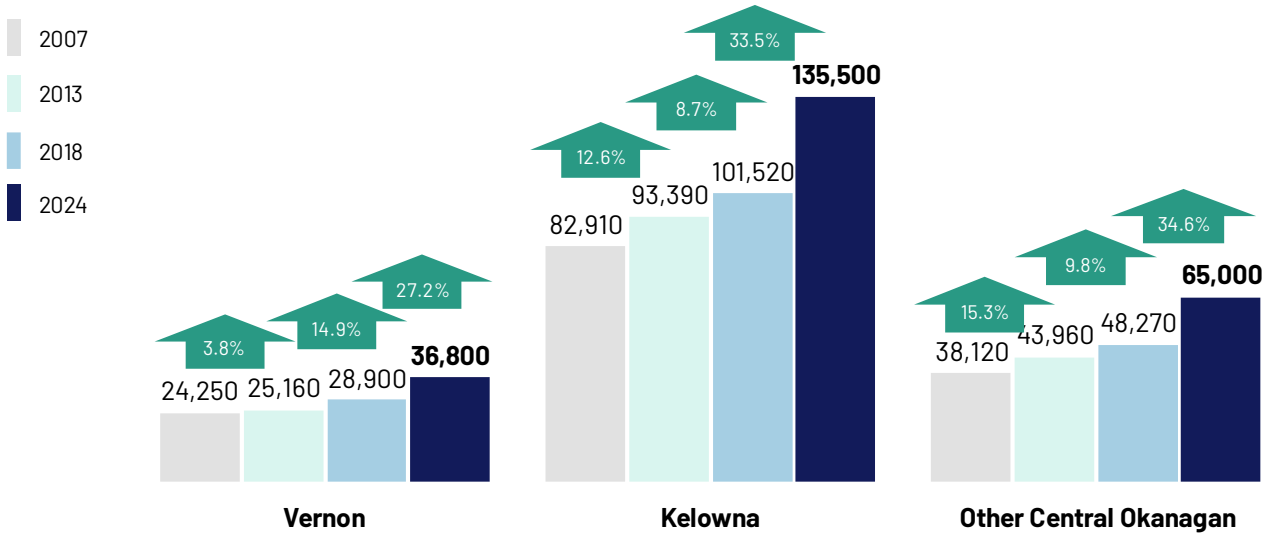
6.3 Household Bicycles and Micromobility Devices

6.3.1 Household Bicycles, 2007 to 2024

The 2018 survey asked respondents to report all working adult bicycles and e-bikes and all working children's bicycles that have been used in the last year. New in 2024 was the addition of micromobility devices with e-assist (e.g., e-scooters segways, hoverboards) as a micromobility category.

The survey results indicate a sharp increase in the number of bicycles to a total of 237,220 bicycles across the study area (inclusive of adult bicycles and e-bicycles and children's bicycles). This is up from 178,700 in 2018, 162,500 in 2013 and 145,300 in the 2007 baseline study, representing a 63% increase across 17 years (compared to the 44% increase in population during the same period). **Figure 81** below depicts the increase in bicycles by sub-area.

Exhibit – Figure 81. Household Bicycles (Expanded), 2007-2024



Trends in bicycle ownership are illustrated in **Figure 82** below. The percentage of households with at least one bicycle has seen the highest increase in Other Central Okanagan at 68% of households, up from 63% in 2018, with softer increases observed in Kelowna and Vernon.

Despite the decline in average household size, the average number of bicycles per household has increased since 2018, ranging from 1.90 in Vernon and 1.92 in Other Central Okanagan to 2.02 in Kelowna. A similar trend is observed for the average number of bicycles per person. This is likely a reflection of the increased demand for bicycles during the COVID-19 pandemic when outdoor activities were encouraged as an alternative to indoor gyms or use of public transit[5].

[5] CBC, Great COVID-19 bicycle boom expected to keep bike industry on its toes for years to come (Mar 21, 2021).

Exhibit – Figure 82. Trends in Bicycle Ownership by Sub-Area, 2007-2024

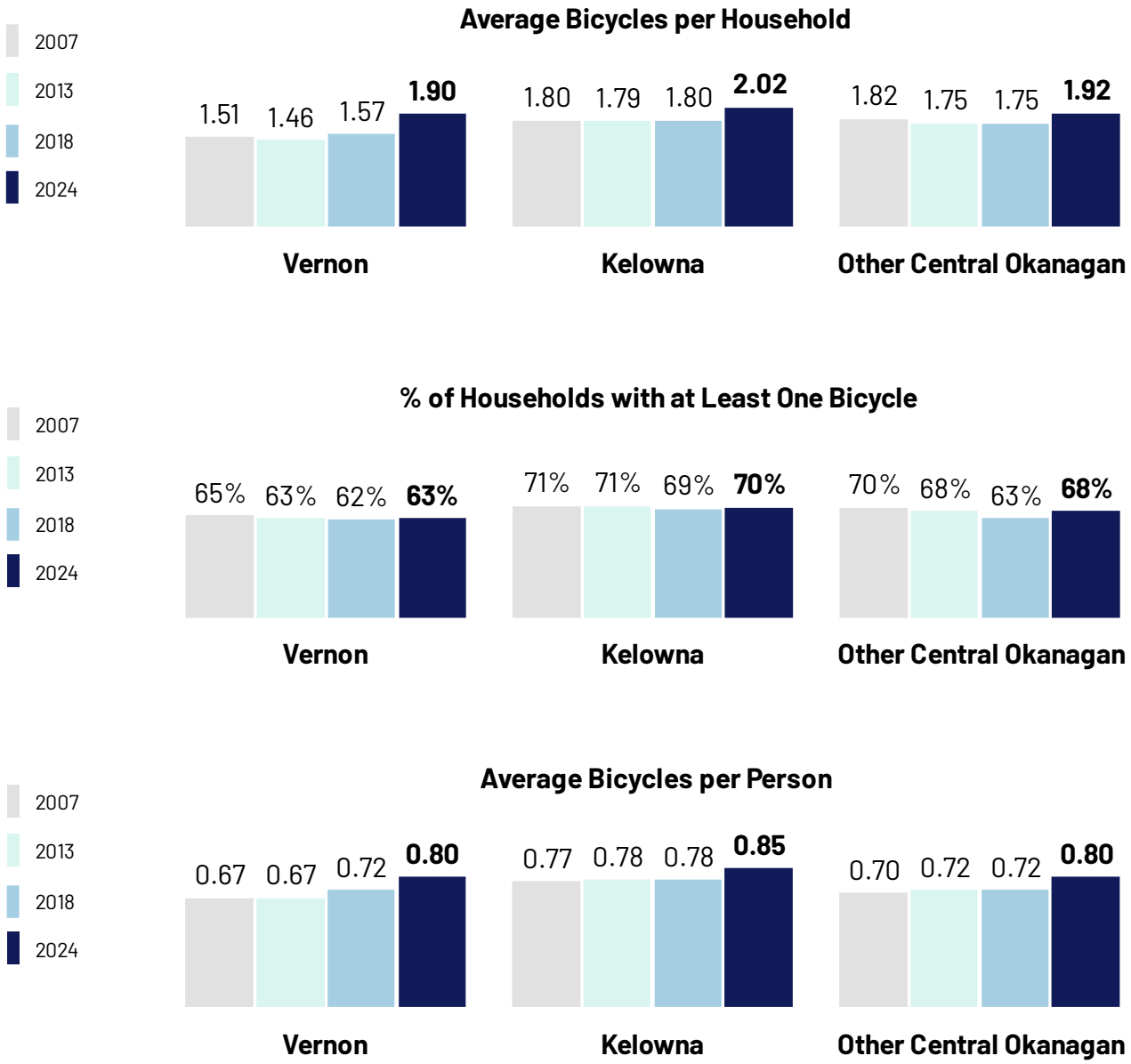
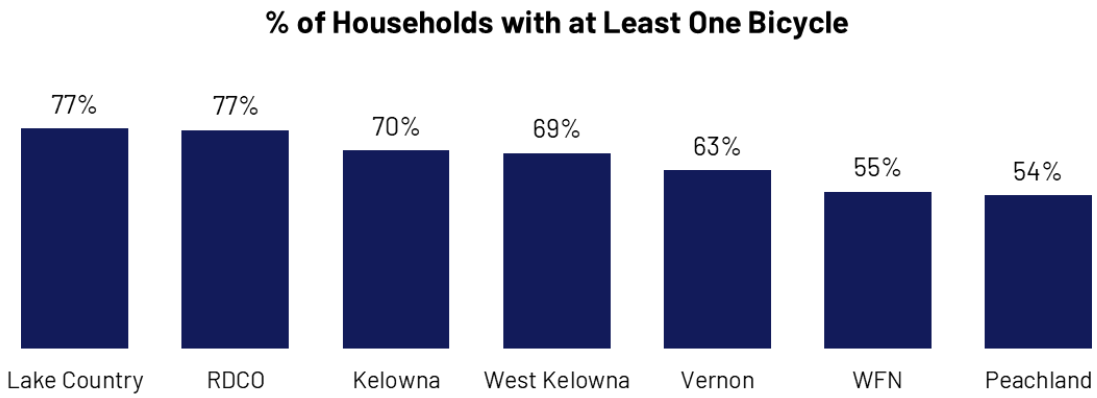


Figure 83 on the following page illustrates the level of bicycle ownership by municipality. In general, the majority of households have at least one bicycle, though there is some variation by city sector. As shown, bicycle ownership is highest in Lake Country and RDCO, with more than three-quarters of households having at least one bicycle. In contrast, fewer households in Westbank First Nation and Peachland own a bicycle (55% and 54%, respectively).

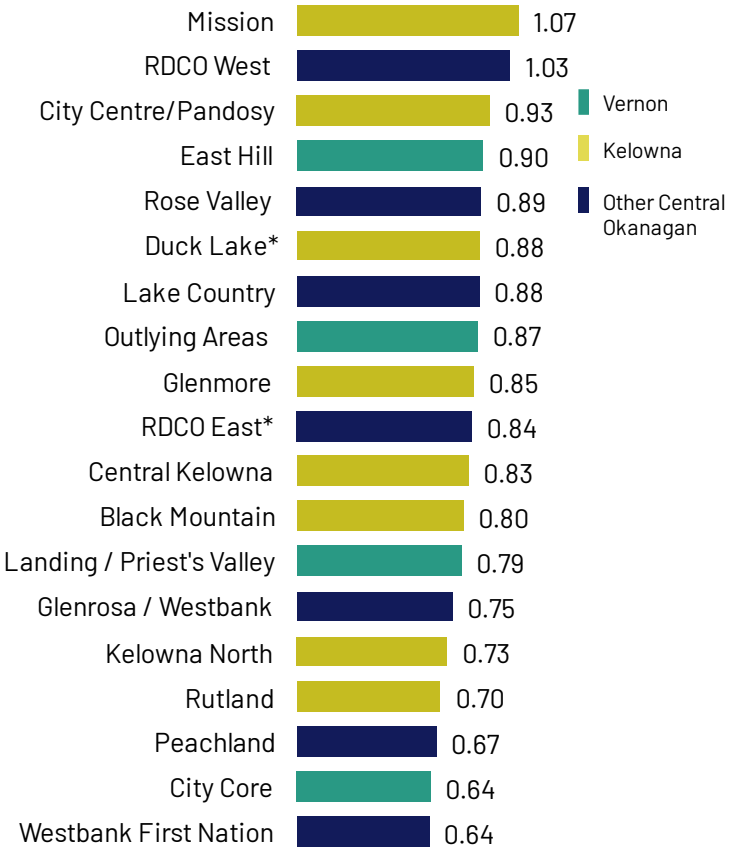
Exhibit – Figure 83. Bicycle Ownership by Municipality, 2024



6.3.2 Levels of Bicycle Ownership by District

Figure 84 illustrates the level of bicycle ownership per capita by district. The variation is likely due to a number of geographical or demographic factors. For example, larger households (suggesting the presence of children) or more affluent households and those living in single-detached homes appear more likely to own at least one bicycle. Age distribution, proximity to jobs and services, and the safety and condition of local roads may also play a role in the variation by district.

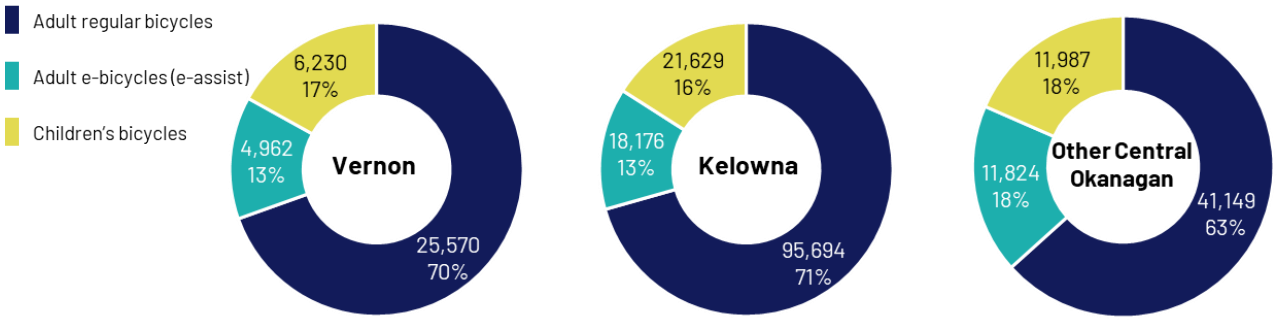
Exhibit – Figure 84. Bicycles per Person by District, 2024



6.3.3 Bicycle Type

Figure 85 breaks out the distribution of types of bicycles in each sub-area, including adult bicycles, adult e-bikes (electric assist bicycles with an integrated electric motor), and working children's bicycles.

Exhibit – Figure 85. Types of Bicycles by Sub-Area, 2024



In each sub-area, at least 80% of bicycles are adult bicycles, whether regular bicycles or e-bikes. Further, adoption of e-bikes has increased dramatically since 2018, now comprising 13% the total pool of bikes in Kelowna and Vernon, up from 1% and 3% respectively, and 18% in Other Central Okanagan (vs. 3% in 2018).

Additionally, there are several districts with above-average proportions of e-bike ownership:

Kelowna

- Kelowna North (22%)
- Duck Lake (23%)*

Other Central Okanagan

- Rose Valley (20%)
- Westbank First Nation (22%)
- RDCO East (20%)*

Vernon

- Outlying areas (e-bikes represent 25% of all household bicycles)

With the exception of Kelowna North, these are generally districts with older residents on average, which could suggest greater appeal of e-bikes among seniors as a lower-impact alternative to a traditional bicycle.

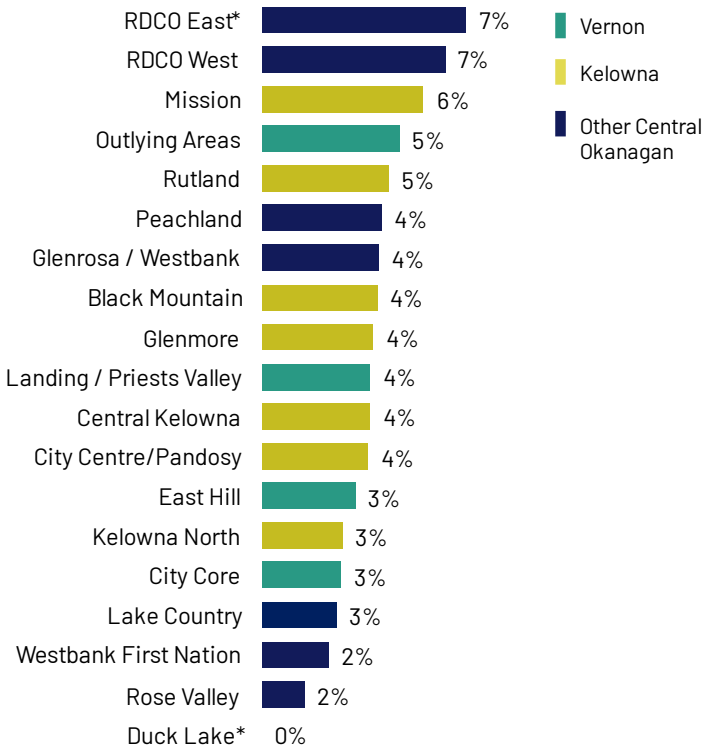
It is important to note that districts with an asterisk (*) have smaller sample sizes and results should be interpreted with some degree of caution.

6.3.4 Micromobility Devices with E-Assist

Figure 86 breaks out the proportion of households who own at least one micromobility device with e-assist (such as an e-scooter, segway or hoverboard) by district. Across the survey area, 3.9% of households have a micromobility device with e-assist, driven largely by the Kelowna sub-area (4.2%). 3.7% of households in Vernon and 3.5% in Other Central Okanagan currently own at least one of these devices.

The results of this survey should provide a useful baseline against which to track the growth in adoption of micromobility devices with e-assist.

Exhibit – Figure 86. Micromobility Device with E-Assist Ownership, 2024



6.4 Age Distribution

The age profile of each survey sub-area is presented in **Figure 87** on the following page, based on Census 2016 and 2021 distributions and demographic projections from BC Stats scaled up to estimate 2024 levels. The green sections of the bars show the increase in population in the given age range in the six years since 2018. The red dotted lines show population loss in the given age range. Increases or decreases in population can be attributed to births, populations aging out of one range and into another and migration.

Across the study area, there appears to be a shift towards a younger population. In Vernon, Kelowna and other areas of the Central Okanagan, there have been substantial gains for relatively younger populations in the age ranges between 25 and 44 since 2018. All sub-areas also show a corresponding decrease among 45 to 54 year olds, and more modest decreases among 55 to 64 year olds and those 85+ years of age. This trend may be the result of an influx of younger households moving into the region, particularly during the pandemic when demand for single-detached homes spiked due to households spending more time at home as a result of lockdowns, coupled with lower inflation rates.

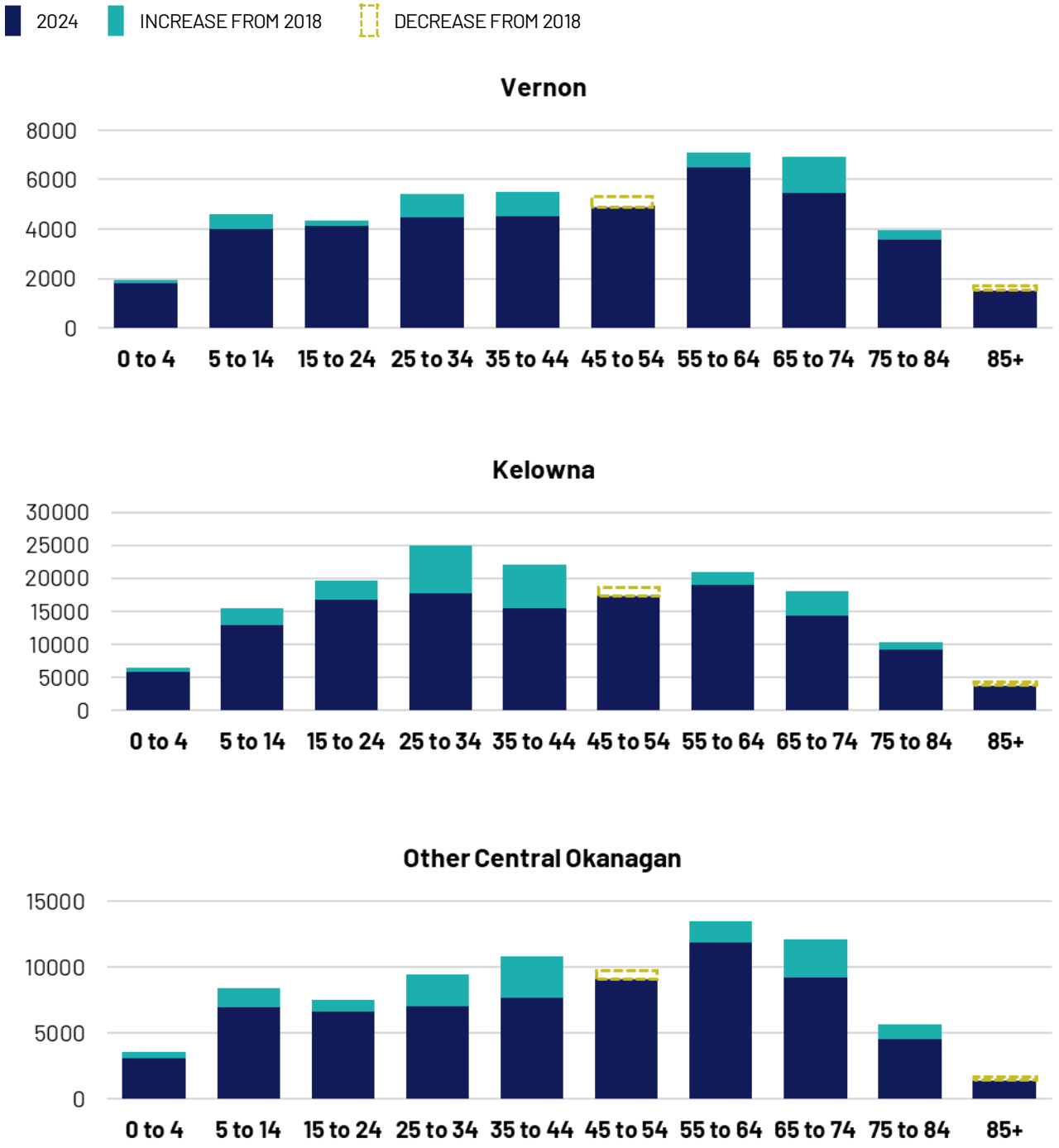
That said, the 65 to 74 year age group has seen a notable gain since 2018, especially in Vernon and Other Central Okanagan which may be the result of populations aging out of the 55 to 64 age group.

The table below summarizes the percentage distributions aggregated to 10-year groups, with the exception of 0 to 4 years, and the changes in proportions since 2018. Green highlighting indicates an increase in the proportion in the given age group, while orange indicates a decrease.

Exhibit - Table 40. Population by Age Group, 2024, with Change in Proportions since 2018

	Vernon				Kelowna				Other Central Okanagan			
	Pop.	% of Total	%-Pt Δ vs. 2018	% Female	Pop.	% of Total	%-Pt Δ vs. 2018	% Female	Pop.	% of Total	%-Pt Δ vs. 2018	% Female
Total	46,210	-		52.3%	158,560	-		51.2%	81,390	-		50.6%
0-4	1,940	4.2%	-0.2%	48.6%	6,360	4.0%	-0.3%	48.3%	3,540	4.3%	-0.3%	48.6%
5-14	4,600	10.0%	0.4%	49.3%	15,440	9.7%	0.1%	49.7%	8,370	10.3%	0.2%	47.8%
15-24	4,340	9.4%	-0.5%	48.4%	19,580	12.3%	-0.2%	48.5%	7,500	9.2%	0.2%	48.0%
25-34	5,400	11.7%	0.9%	48.8%	24,970	15.7%	2.5%	49.6%	9,470	11.6%	1.3%	50.7%
35-44	5,500	11.9%	1.0%	51.9%	22,000	13.9%	2.4%	50.9%	10,770	13.2%	2.0%	50.5%
45-54	4,930	10.7%	-2.2%	52.1%	17,380	11.0%	-2.7%	51.4%	9,080	11.2%	-3.1%	51.1%
55-64	7,080	15.3%	-0.3%	54.6%	20,840	13.1%	-1.1%	53.1%	13,430	16.5%	-0.8%	53.1%
65-74	6,920	15.0%	1.8%	55.4%	18,020	11.4%	0.7%	53.5%	12,120	14.9%	1.4%	51.5%
75-84	3,970	8.6%	0.0%	56.5%	10,280	6.5%	-0.4%	53.7%	5,690	7.0%	0.3%	51.4%
85+	1,530	3.3%	-0.8%	57.5%	3,690	2.3%	-1.0%	57.5%	1,420	1.7%	-0.6%	50.8%

Exhibit – Figure 87. 2024 Population by Age, with Gains or Losses since 2018 (Based on Census)



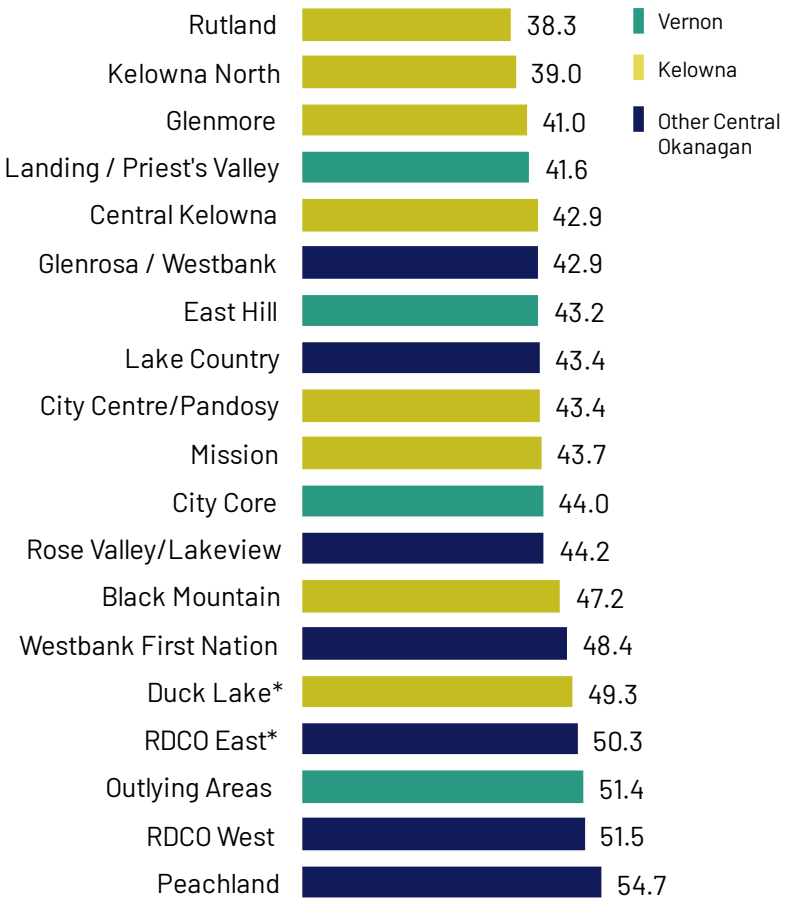
6.4.1 Average Age by District

Figure 88 profiles the average age of the population in each district as reflected in the survey results, which illustrates which districts are generally younger versus older.

Most districts within Kelowna appear to lean younger relative to other parts of the region. Upon closer review of the survey results, lower average ages in central districts in Kelowna are due to a higher incidence of 25 to 44 year olds – at least one in three residents in City Centre/Pandosy, Central Kelowna and Rutland fall within this age range.

Districts with higher average ages are due to larger proportions of seniors (at least 30% of the population in each district is over the age of 65) compared to the study area average of 22%. This includes City Core and Outlying Areas in Vernon, as well as Duck Lake, Westbank First Nation and Peachland in the Central Okanagan.

Exhibit – Figure 88. Average Age by District, 2024

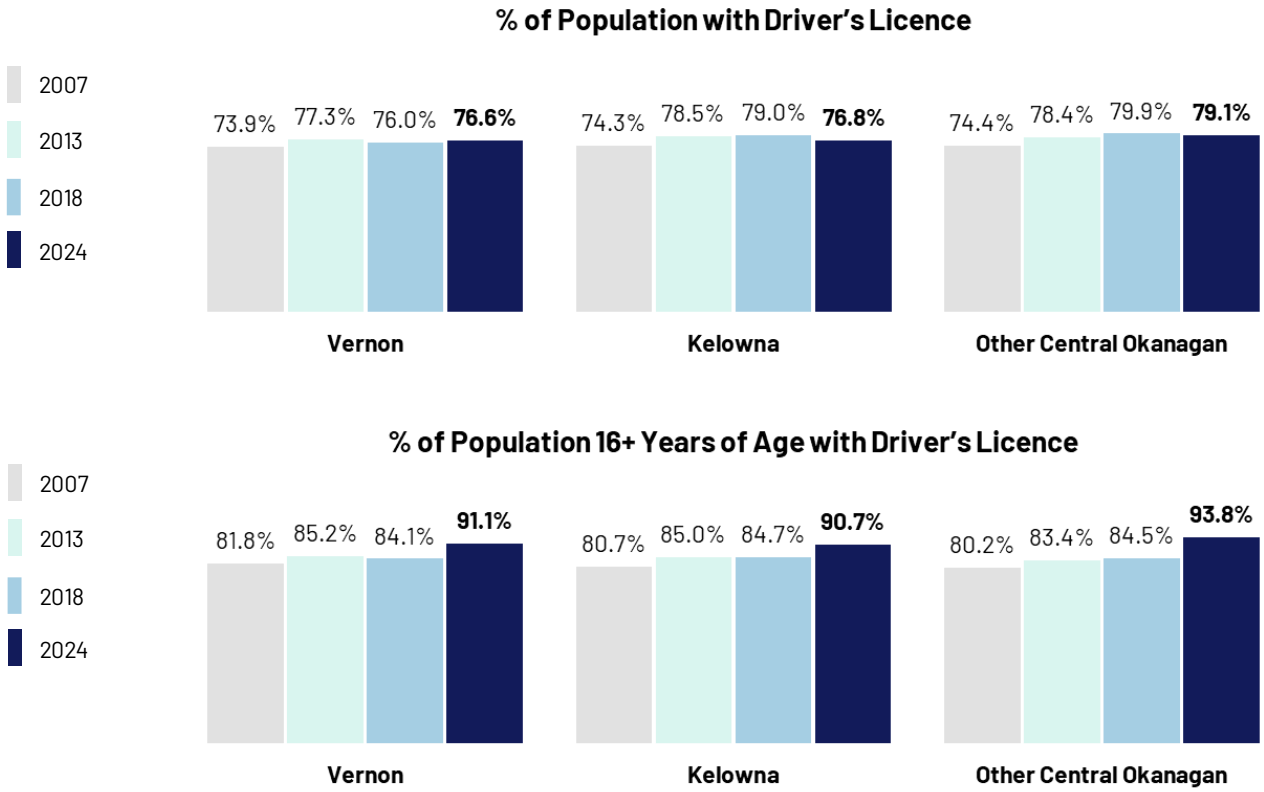


6.5 Licensed Drivers

Approximately 78% of the population in the study area has a driver's license, which is just a slight decline from 79% in 2018 and a return to levels seen in 2013. Looking at just the population eligible for a license (those ages 16 and above), the percentage has increased to above 90% for all sub-areas. Results by area are depicted below.

Overall, the survey results suggest that there are roughly 221,700 people with a driver's license in the region, with Kelowna accounting for about 121,900 of these, 64,400 in the rest of the Central Okanagan, and 35,400 in Vernon.

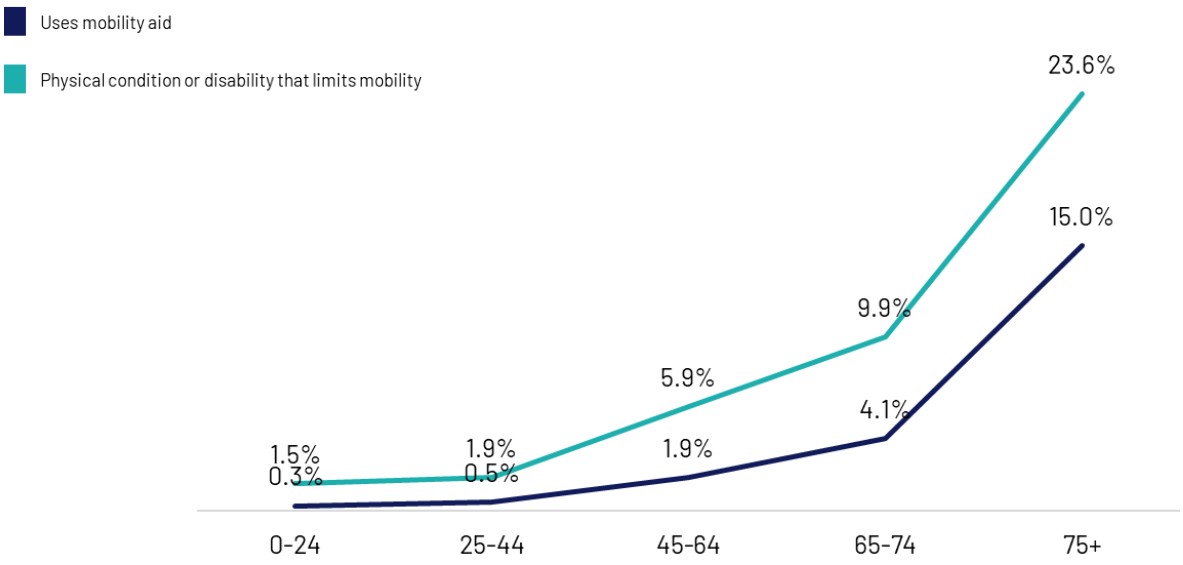
Exhibit – Figure 89. Possession of a Driver's Licence by Sub-Area, 2007-2024



6.6 Mobility Challenges

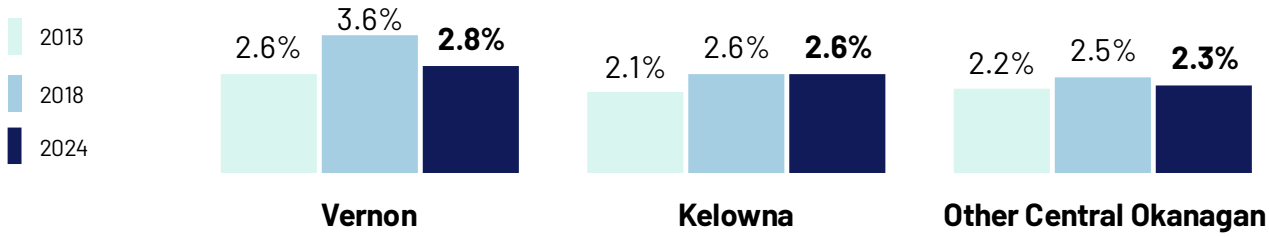
Across the study area, the proportion of residents who reported having a physical disability or condition that limits their mobility is 5.8%, down from 6.2% in 2018. By sub-area, this proportion is 7.5% in Vernon, 5.7% in Kelowna and 5.1% in other parts of Central Okanagan (compared with 8.5% in Vernon and 5.7% in Kelowna and Central Okanagan in 2018). The decline in mobility challenges may be the result of the shifting population towards younger demographics as reported in **Section 6.4. Figure 90** illustrates the relationship between age and mobility challenges.

Exhibit - Figure 90. Increase in Mobility Challenges with Age – Study Area, 2024



Less than half of those with a condition that limits their mobility use a mobility aid. Across the study area, 2.6% of the population reported using a mobility aid, slightly down from 2.7% in 2018. The proportion is highest in Vernon at 2.8%, though this is also a decline from 3.6% in 2018 (See **Figure 91** below). Kelowna held stable at 2.6% while the proportion in the rest of the Central Okanagan area softened to 2.3%.

Exhibit - Figure 91. Percent of Population Using a Mobility Aid, 2007-2024



Canes and walkers are the most common mobility aid used (used by 1.1% and 1.0%, respectively), with wheelchairs, scooters and crutches reported by fewer respondents (see **Table 41** below). It is important to note that these results reflect only those living in private dwellings and do not include people living in collective dwellings such as care homes or group homes.

Exhibit – Table 41. Mobility Challenges and Mobility Aids, 2024

	Study Area	Vernon	Kelowna	Other Central Okanagan
Population (living in private dwellings)	286,227	46,212	158,624	81,391
No mobility challenges	93.2%	91.5%	93.1%	94.1%

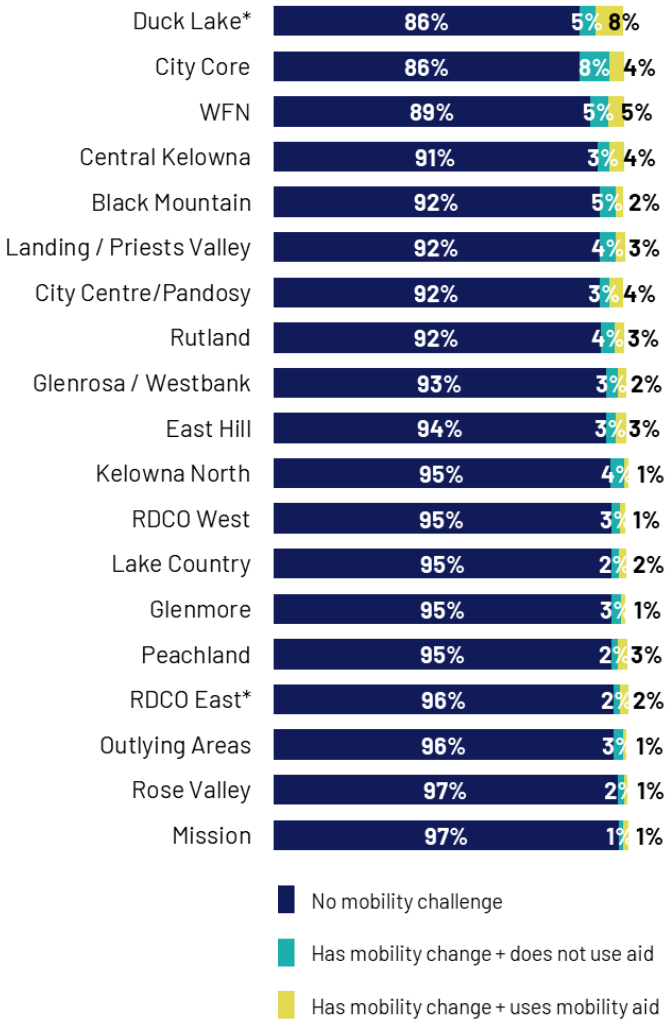
Has physical disability or condition that limits mobility	5.8%	7.5%	5.7%	5.1%
Has limits to mobility, but does not use an aid	3.2%	4.7%	3.0%	2.8%
Uses mobility aid	2.6%	2.8%	2.6%	2.3%
Type of Mobility Aid Used*				
Cane	1.1%	1.3%	1.0%	1.1%
Walker	1.0%	1.2%	1.0%	0.9%
Wheelchair	0.3%	0.2%	0.3%	0.3%
Scooter	0.1%	0.1%	0.2%	0.1%
Crutch	0.0%	0.0%	0.0%	0.0%

6.6.1 Mobility Challenges by District

Figure 92 illustrates the incidence of physical disabilities or conditions that limit mobility and use of a mobility aid by district.

Results with smaller sample sizes are noted with an asterisk (*) and should be interpreted with caution.

Exhibit – Figure 92. Mobility Challenges by District, 2024



6.7 K-12 and Post Secondary School Enrolments

Similar to 2018, the student population in the study area comprises about one-fifth of the total population, or about 53,950 students. Across the study area, more than two-thirds of students (36,890) are in the K-12 (Kindergarten to Grade 12) system. **Table 42** below summarizes the number of students by school type for the study area and each sub-region. It is important to note that all reported numbers are based on a survey sample expanded to represent the population and should be interpreted as approximate figures.

Exhibit – Table 42. Students by Type by Sub-Area of Residence (Expanded), 2024

	Study Area	Vernon	Kelowna	Other Central Okanagan
Total Population	286,227	46,212	158,624	81,391
Total Students	53,953	7,596	32,386	13,971
% of Population	18.8%	16.4%	20.4%	17.2%
K-12 students	36,876	5,908	20,407	10,561
Full-Time PSE/other	14,127	1,313	9,953	2,862
Part-Time PSE/other	2,950	375	2,026	549
PSE/Other – Breakdown:				
College or university – FT	13,052	1,166	9,471	2,414
College or university – PT	1,968	241	1,380	348
Alternate, adult basic education, or other*	596	59	277	260
Online / distance learning – FT**	710	122	359	230
Online / distance learning – PT**	752	100	493	159

PSE = Post-Secondary Education | K-12 = Kindergarten to Grade 12

*Includes mix of full-time and part-time

**Includes some middle or high school students taking online/distance learning

Changes in the size of the K-12 and post-secondary student populations over time are examined below. **Table 43** illustrates the number of K-12 students in 2024 compared to previous survey cycles, with the exception of the 2007 baseline survey as school type was not collected as part of that study. The 2024 results suggest that the number of K-12 students has increased across the study area, and particularly in Kelowna which has increased by 25% since 2018. The 2024 survey results have not been validated against school enrolment. However, as the data was weighted by age range, and nearly all survey respondents in the 5 to 18 year range indicated they were attending K-12 school, the figures should be generally reliable.

Exhibit – Table 43. K-12 Students by Place of Residence (Expanded), 2018-2024

	Study Area	Vernon	Kelowna	Other Central Okanagan
2013	29,420	5,370	14,960	9,090
2018	29,940	4,920	16,350	8,680
2024	36,876	5,908	20,407	10,561
% change 2018-2024	23.2%	20.1%	24.8%	21.7%

The main public post-secondary campuses in the region are: UBC Okanagan Campus (UBCO), Okanagan College Kelowna campus, and Okanagan College Vernon campus. **Table 44** outlines the increase in enrolments since 2018 (using enrolment figures put out by the institutions), as well as the expanded 2018 survey counts. The survey represents most but not all enrolments at UBC Okanagan, but underrepresents enrolment at Okanagan College. This is to be expected to some degree as some students would be in living arrangements outside the survey scope such as living in residence, outside the study area or in informal basement or secondary suites.

Readers are reminded that figures are based on survey data, not actual school enrolment figures. Figures are counts of students living in each sub-area (place of residence). The location of the school enrolled will usually but not always been in the same community.

Exhibit – Table 44. Post-Secondary School Enrolments, 2018-2024

	2013 Enrolment	2018 Enrolment	2024 Enrolment	% Change Since 2018	2024 Expanded Results
UBC Okanagan Campus (UBCO)	**8,388**	**9,973**	**11,913**	**+19.5%**	**9,366**
Okanagan College – Total:	**4,907**	**7,214**	**7,988**	**+10.7%**	**3,695**
Okanagan College - Kelowna	4,193	6,126	-	-	3,306
Okanagan College - Vernon	714	1,088	-	-	389
Total	13,295	17,187	19,901	+15.8%	13,061

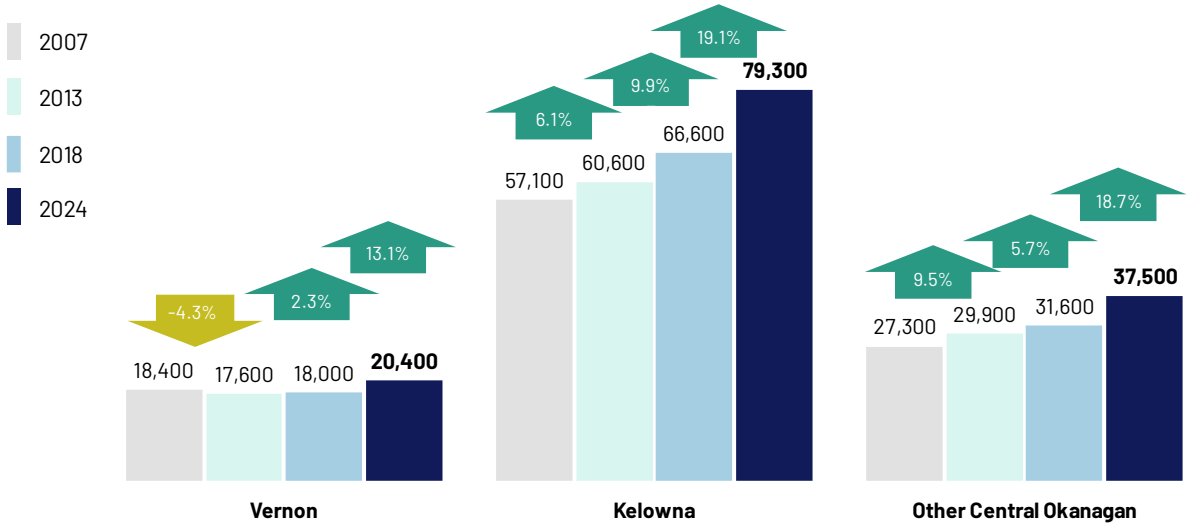
6.8 Employed Labour Force

6.8.1 Total Workers, 2007-2024

Based on the survey results, the total employed labour force in the study area in 2024 is estimated to be 137,200 up from 116,200 in 2024, 108,100 in 2013 and 102,900 in 2007. Growth rates have been dramatic since 2018, at 18.1% over the past six years, compared to 7.5% over the previous five years from 2013 to 2018. Growth since 2018 is generally in line with the 21% increase in population during this same time period.

As illustrated in **Figure 93** below, the growth has been strongest in Kelowna, which in the past five years has experienced 19.1% growth in working population, and other parts of the Central Okanagan (18.7% growth). This corresponds with the increased population of working-age adults (25 to 44 years old) in these areas since 2018 (see **Section 6.4**). The size of the employed labour force in Vernon has also seen a notable increase since 2018, though to a lesser extent.

Exhibit – Figure 93. Employed Labour Force (Expanded), 2007-2024



6.8.2 Detailed Occupation Status

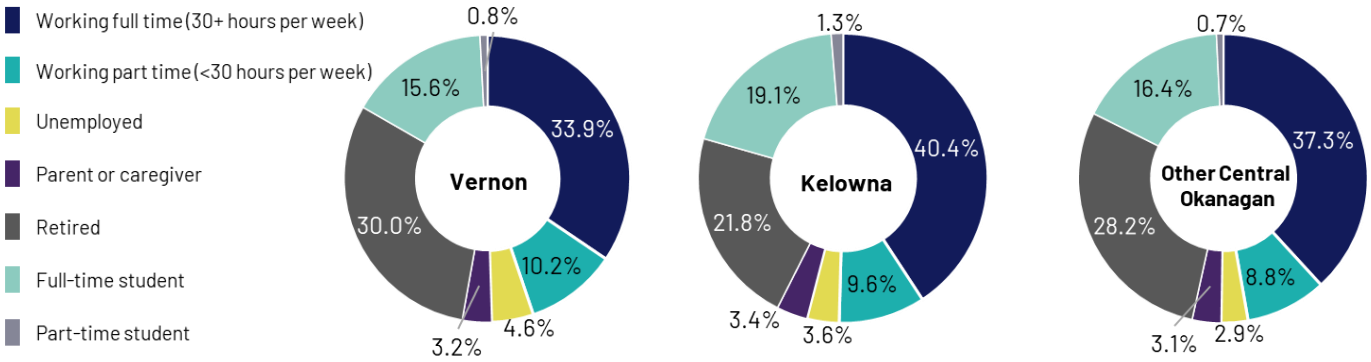
The table below breaks down occupation status across the entire study area population, combining the survey responses on questions about employment, student status, or other status. The survey results estimate that 49% of the population is employed (39% full-time and 10% part-time), and 19% are students of all levels (K-12 and PSE). The pie charts that follow (**Figure 94**) summarize the distributions for the sub-areas. As indicated, Kelowna has the largest proportion of population being full-time employed (40%), as compared to the rest of the Central Okanagan (37%), and in Vernon (34%).

Exhibit – Table 45. Occupation Status (Expanded), 2024

	Expanded Survey Counts				% of Total Population				% of Population 15+ Years of Age (eligible for labour force)			
	Study Area	Vernon	Kelowna	Central Okanagan Subtotal	Study Area	Vernon	Kelowna	Central Okanagan Subtotal	Study Area	Vernon	Kelowna	Central Okanagan Subtotal
Total Population	286,227	46,212	158,624	81,391	100%	100%	100%	100%	-	-	-	-
Population 15+ years of age	244,669	39,286	136,320	69,062	85.5%	85.0%	85.9%	84.9%	100%	100%	100%	100%
Work FT	110,090	15,657	64,111	30,321	38.5%	33.9%	40.4%	37.3%	45.0%	39.9%	47.0%	37.3%
Work PT	27,107	4,701	15,215	7,191	9.5%	10.2%	9.6%	8.8%	11.1%	12.0%	11.2%	8.8%
Unemployed	10,170	2,146	5,649	2,374	3.6%	4.6%	3.6%	2.9%	4.2%	5.5%	4.1%	2.9%
Other	6,838	1,153	3,848	1,837	2.4%	2.5%	2.4%	2.3%	2.8%	2.9%	2.8%	2.3%
Retired	71,348	13,847	34,516	22,985	24.9%	30.0%	21.8%	28.2%	29.2%	35.2%	25.3%	28.2%

Student	53,953	7,596	32,386	13,971	18.8%	16.4%	20.4%	17.2%	22.1%	19.3%	23.8%	17.2%
High School Student 15+ Yrs	9,183	1,418	5,352	2,412	3.2%	3.1%	3.4%	3.0%	3.8%	3.6%	3.9%	3.0%
5-14 Years of Age (student)	25,778	4,133	13,835	7,810	9.0%	8.9%	8.7%	9.6%	-	-	-	-
0-4 Years of Age	11,985	2,159	6,361	3,466	4.2%	4.7%	4.0%	4.3%	-	-	-	-
Work FT + Student FT or PT	1,155	184	811	159	0.4%	0.4%	0.5%	0.2%	0.5%	0.5%	0.6%	0.2%
Work PT + Student FT or PT	4,083	492	2,714	877	1.4%	1.1%	1.7%	1.1%	1.7%	1.3%	2.0%	1.3%
Work PT + High School Student 15+ Years	861	23	570	268	0.3%	0.1%	0.4%	0.3%	0.4%	0.1%	0.4%	0.4%

Exhibit – Figure 94. Occupational Status (% of Population) by Sub-Area, 2024



6.8.3 Type of Occupation

As in previous survey cycles, the 2024 survey asked respondents about their type of occupation, using major occupational groups from the National Occupational Classification (NOC) system, with further breakdowns of categories of interest.

Table 46 below summarizes the distribution of workers by occupational group in 2018 and 2024. However, results should be interpreted with some degree of caution as respondents were asked to self-identify their occupational group and Occupation was not used as a data weighting control in preparation of the final weighted and expanded survey data.

Exhibit – Table 46. Occupational Type (Employed Persons – Expanded), 2018 -2024

Occupation Type	Vernon		Kelowna		Other Central Okanagan	
	2018	2024	2018	2024	2018	2024
Total workers living in area	**18,000**	**20,359**	**66,600**	**79,326**	**31,600**	**37,512**
Management Occupations	9%	11%	10%	11%	12%	13%
Business, Finance and Admin Occupations	12%	14%	15%	15%	15%	17%

Natural and Applied Science Occupations	5%	2%	6%	4%	5%	3%
Health Services Occupations	12%	16%	11%	17%	10%	14%
Post-Secondary Education, Law and Social, Community and Government Services	5%	6%	7%	8%	5%	6%
Secondary and Elementary School Teachers	4%	5%	5%	5%	3%	4%
Performing and Facilitating Art, Culture, Recreation, and Sports	2%	3%	3%	2%	3%	2%
Sales & Service Provision	22%	13%	23%	13%	22%	13%
Trades, Transport & Equipment Operators	15%	13%	13%	11%	16%	17%
Commercial Driver	2%	1%	1%	1%	1%	1%
Natural Resources, Agriculture and Related Production	3%	3%	2%	1%	3%	2%
Manufacturing & Utilities	5%	4%	2%	3%	2%	2%
Other	-	19%	-	17%	-	15%

6.8.4 Place of Work

About three-quarters of workers in the study area work at a usual place of work outside their home, while 14% have no fixed workplace address (e.g., plumber, travelling salesperson, commercial driver, etc.). The proportion of workers who now work from home has seen a sharp increase since 2018, with more than 1 in 5 (22%) now working from home up from 12% in 2018. Vernon has slightly lower levels of working from home than the Central Okanagan but has still observed an increase since 2018 (10% in 2018 vs. 19% in 2024). This statistic reflects the enduring impact that the COVID-19 pandemic has had on flexible working arrangements and is likely a strong factor in explaining the declining trip rates in 2024 (see **Section 5**).

Exhibit - Table 47. Workplace Type (Expanded), 2024

	Study Area	Vernon	Kelowna	Other Central Okanagan
Total workers living in area	**137,197**	**20,359**	**79,326**	**37,512**
Usual place of work outside the home	64%	67%	64%	61%
No fixed workplace address	14%	14%	13%	16%
Work from home	22%	19%	22%	22%

6.8.5 Place of Work by District

The charts below summarize the distribution of workers by place of residence vs. places of work. For consistency with previous results, respondents with no fixed workplace have been coded to their home district, although it is possible that their work cover many districts. In reviewing the results, it is important to note that the distribution of places of work does not include jobs held by residents who live outside the study area (for example, a resident of Coldstream who works in Vernon). Nevertheless, the

survey likely captures the great majority of employment located in the surveyed communities and provides useful information in understanding the concentrations of jobs and where workers live.

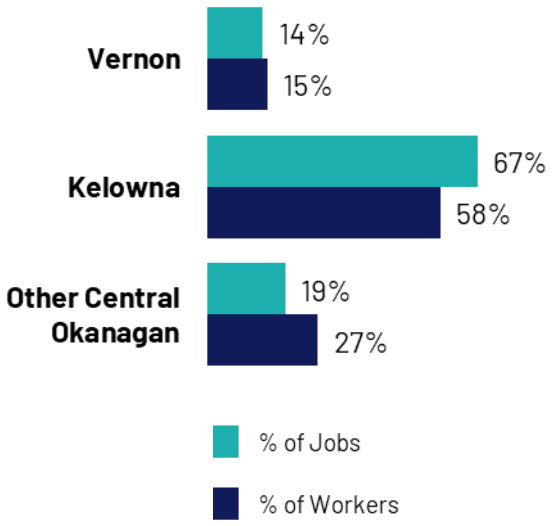
The survey results suggest that Kelowna is a net attractor of workers from the study area, with about 89,200 jobs relative to the 79,300 workers who live in Kelowna.

- In particular, nearly one-quarter (23%) of all jobs in the study area are located the Kelowna City Centre/Pandosy district, with another 16% in Central Kelowna.
- Other areas which are net attractors of work commutes are Kelowna North (8% of places to work), Rutland (7%) and Vernon's City Core (6%).

Districts which are net generators of commutes from home with low ratios of jobs to workers (of about 0.5 or below) are:

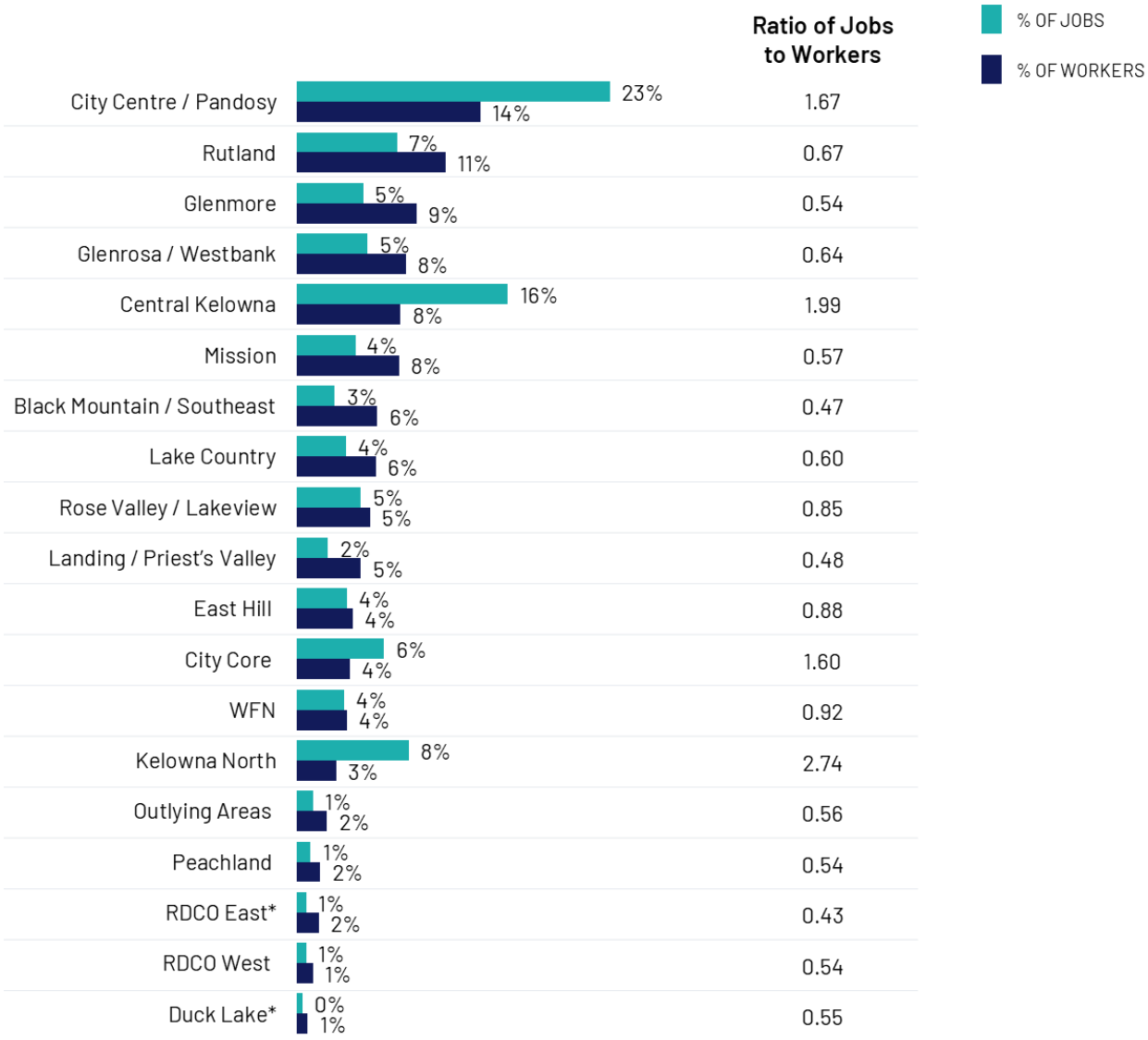
- in Vernon: Landing / Priest's Valley;
- in Kelowna: Black Mountain / Southeast; and
- in the rest of the Central Okanagan: RDCO East.

Exhibit – Figure 95. Distribution of Workers' Places of Residence and Places of Work by Sub-Area, 2024



Of note, the West Kelowna total (two districts combined) reveals that this city represents 13% of all workers and 10% of all places of work (with many workers living in West Kelowna commuting outside the City boundaries for work). See **Table 49** in the Appendix for more details.

Exhibit – Figure 96. Distribution of Workers' Places of Residence and Places of Work by District



6.9 Retirement

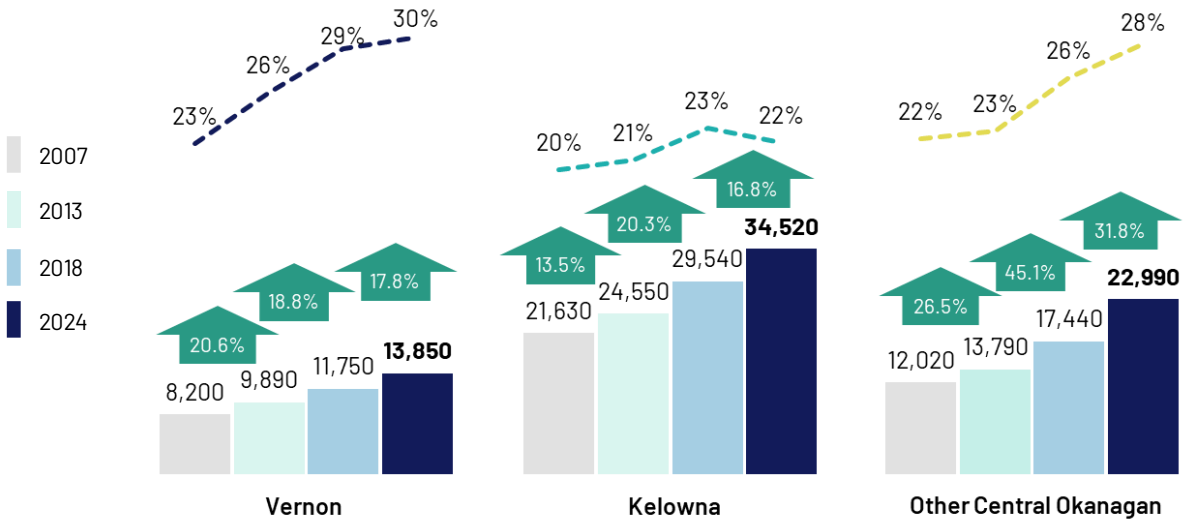
In previous survey cycles, we have seen that retired residents generally exhibit different travel patterns and have different transportation needs. The survey estimates suggest that across the entire study area, there are about 71,350 retirees, up from 58,700 in 2018, 48,200 in 2013 and 41,860 in 2007. This is an increase of 21.6% over the last 6 years and amounts to a 70% increase over the 17 years since the baseline survey compared with 44% increase in total population over the same period (19%).

While the overall number of retirees in the region continues to grow, the growth rate of this demographic group has slowed compared to previous survey cycles, especially in the Central Okanagan region (Kelowna and Other Central Okanagan). This is consistent with the shifting age demographics

observed in **Section 6.4** as the region's younger population is growing at a faster rate, likely driven by the growing number of residents relocating to the Okanagan from other parts of Canada in recent years.

The chart below (**Figure 97**) presents the results for the three sub-areas.

Exhibit - Figure 97. Total Retirees (Expanded) and Retirees as a % of Population, 2007-2024



7. Appendix: Additional Tables

Exhibit – Table 48. Households and Populations, 2007-2024 – Study Area

Survey Year	Study Area	Central Okanagan Subtotal	Kelowna	Other Central Okanagan	Vernon	Study Area	Central Okanagan Subtotal	Kelowna	Other Central Okanagan	Vernon
Households						**% Change Between Survey Year**				
2007	83,000	66,930	45,970	20,960	16,070	n/a	n/a	n/a	n/a	n/a
2013	94,650	77,460	52,310	25,150	17,190	14.0%	15.7%	13.8%	20.0%	7.0%
2018	102,590	84,140	56,530	27,600	18,460	8.4%	8.6%	8.1%	9.7%	7.4%
2024	127,177	105,568	70,964	34,604	21,609	24.0%	25.5%	25.5%	25.4%	17.1%
Population Living in Private Dwellings*						**% Change Between Survey Year**				
2007	198,870	162,690	108,140	54,560	36,180	n/a	n/a	n/a	n/a	n/a
2013	220,470	182,350	120,340	62,010	38,110	10.9%	12.1%	11.3%	13.7%	5.3%
2018	237,250	197,030	129,860	67,180	40,220	7.6%	8.1%	7.9%	8.3%	5.5%
2024	286,227	240,015	158,624	81,391	46,212	20.6%	21.8%	22.1%	21.2%	14.9%
Average Household Size						**% Change Between Survey Year**				
2007	2.40	2.43	2.35	2.60	2.25	n/a	n/a	n/a	n/a	n/a
2013	2.33	2.35	2.30	2.47	2.22	-2.8%	-3.2%	-2.2%	-5.3%	-1.5%
2018	2.31	2.34	2.30	2.43	2.18	-0.7%	-0.5%	-0.1%	-1.3%	-1.7%
2024	2.24	2.29	2.24	2.35	2.14	-2.9%	-2.0%	-2.8%	-3.2%	-1.9%

*Note: These figures do not include those living in collective dwellings (dwellings of a commercial, institutional or communal nature) or those without a fixed address.

Exhibit - Table 49. Distribution of Workers' Places of Residence and Places of Work by District

Geography	District	Workers (by place of residence)	% of Workers	Jobs (workers by place of work)	% of Jobs	Ratio of Jobs to Workers
Study Area		137,197	100.0%	133,292	100.0%	0.97
Sub-Areas:						
Vernon		20,359	14.8%	18,301	13.7%	0.90
Kelowna		79,326	57.8%	89,208	66.9%	1.12
Other Central Okanagan		37,512	27.3%	25,782	19.3%	0.69
Districts:						
City Core	1001	5,378	3.9%	8,603	6.4%	1.60
East Hill	1002	5,563	4.1%	4,909	3.7%	0.88
Landing / Priest's Valley	1003	6,455	4.7%	3,120	2.3%	0.48
Outlying Areas	1004	2,963	2.2%	1,670	1.2%	0.56
Lake Country	2000	7,942	5.8%	4,779	3.6%	0.60
City Centre / Pandosy	3001	18,457	13.5%	30,814	23.0%	1.67

Central Kelowna	3002	10,443	7.6%	20,772	15.5%	1.99
Glenmore	3003	12,141	8.8%	6,554	4.9%	0.54
Rutland	3004	14,894	10.9%	9,907	7.4%	0.67
Mission	3005	10,241	7.5%	5,817	4.3%	0.57
Black Mountain / Southeast	3006	8,096	5.9%	3,766	2.8%	0.47
Kelowna North	3007	4,017	2.9%	11,003	8.2%	2.74
Duck Lake*	3008	1,037	0.8%	575	0.4%	0.55
Glenrosa / Westbank	4001	10,943	8.0%	6,978	5.2%	0.64
Rose Valley / Lakeview	4002	7,362	5.4%	6,286	4.7%	0.85
West Kelowna Subtotal		*18,304*	*13.3%*	*13,264*	*9.9%*	*0.72*
Westbank First Nation	5001	5,055	3.7%	4,632	3.5%	0.92
Peachland	6000	2,392	1.7%	1,293	1.0%	0.54
RDCO West	7000	1,639	1.2%	882	0.7%	0.54
RDCO East*	8000	2,179	1.6%	932	0.7%	0.43

Exhibit – Table 50. Estimated Total Daily Trips by Primary Mode of Travel - Study Area, 2024

Mode	Expanded Trips	Mode Share (%)
Auto Driver	408,854	67.2%
Auto Passenger	102,095	16.8%
Public Transit	23,190	3.8%
Bicycle	16,369	2.7%
Walked or rolled	44,365	7.3%
School Bus	11,388	1.9%
Other	2,037	0.3%

Exhibit - Table 51. Total Trips by Mode, Mode Shares (Expanded) – Study Area, 2007-2024

	Trips				% Change in Number of Trips			
Primary Mode	2007	2013	2018	2024	'07-'13 6-Year Δ	'13-'18 5-Year Δ	'18-'24 6-Year Δ	'07-'24 17-Year Δ
Total Trips	**634,200**	**675,900**	**684,800**	**608,298**	**6.6%**	**1.3%**	**-11.2%**	**-4.1%**
Auto Driver	446,700	460,500	464,300	408,854	3.1%	0.8%	-11.9%	-8.5%
Auto Passenger	111,800	109,200	123,300	102,095	-2.3%	12.9%	-17.2%	-8.7%
Transit Bus	9,000	22,500*	19,100	23,190	+150.0%	-14.9%	21.4%	157.7%
School Bus	14,200	9,900	10,700	11,388	-30.7%	8.2%	6.4%	-19.8%
Walked the entire way	34,800	52,500	53,100	44,365	50.9%	1.1%	-16.5%	27.5%
Bicycle	11,800	17,100	11,000	16,369	45.5%	-36.1%	48.8%	38.7%
Other	5,800	4,200	3,300	2,037	-28.0%	-21.0%	-38.3%	-64.9%

Exhibit – Table 52. Total Trips by Mode, Mode Shares (Expanded) – Study Area, 2007-2024

	Mode Share				% Point Change			
Primary Mode	2007	2013	2018	2024	'07-'13 6-Year Δ	'13-'18 5-Year Δ	'18-'24 6-Year Δ	'07-'24 17-Year Δ
Total Trips	**100.00%**	**100.00%**	**100.00%**	**100.00%**				
Auto Driver	70.40%	68.10%	67.80%	67.2%	-2.3%	-0.3%	-0.6%	-3.2%
Auto Passenger	17.60%	16.20%	18.00%	16.8%	-1.5%	1.9%	-1.2%	-0.8%
Transit Bus	1.40%	3.3%*	2.80%	3.8%	+1.9%	-0.5%	1.0%	2.4%
School Bus	2.20%	1.50%	1.60%	1.9%	-0.8%	0.1%	0.3%	-0.3%
Walked the entire way	5.50%	7.80%	7.80%	7.3%	2.3%	0.00%	-0.5%	1.8%
Bicycle	1.90%	2.50%	1.60%	2.7%	0.7%	-0.9%	1.1%	0.8%
Other	0.90%	0.60%	0.50%	0.3%	-0.3%	-0.1%	-0.2%	-0.6%

Exhibit - Table 53. Total Trips by Mode, Mode Shares (Expanded) – by Sub-Area, 2007-2024

	Trips				% Change in # of Trips			
Primary Mode	2007	2013	2018	2024	'07-'13 6-Year Δ	'13-'18 5-Year Δ	'18-'24 6-Year Δ	'07-'24 17-Year Δ
Vernon								
Total Trips	119,000	127,300	118,100	97,480	7.0%	-7.2%	-17.5%	-18.2%
Auto Driver	83,500	86,400	79,200	65,494	3.4%	-8.3%	-17.3%	-21.6%
Auto Passenger	21,100	22,600	21,700	16,392	7.1%	-4.1%	-24.5%	-22.3%
Transit Bus	1,200	1,600	2,500	2,516	26.8%	63.6%	0.6%	109.7%
School Bus	2,800	1,600	700	1,402	-42.6%	-55.1%	100.3%	-49.9%
Walked the entire way	8,300	12,600	11,600	8,882	52.0%	-7.3%	-23.4%	7.0%
Bicycle	1,100	1,800	1,600	2,420	67.6%	-9.5%	51.2%	120.0%
Other	1,000	800	600	375	-23.5%	-15.5%	-37.5%	-62.5%
Kelowna								
Total Trips	353,500	367,300	389,000	339,041	3.9%	5.9%	-12.8%	-4.1%
Auto Driver	245,300	243,900	256,200	220,690	-0.6%	5.1%	-13.9%	-10.0%
Auto Passenger	61,800	54,600	70,300	54,165	-11.7%	28.6%	-23.0%	-12.4%
Transit Bus	6,200	16,000	13,300	16,421	157.9%	-16.9%	23.5%	164.9%
School Bus	5,800	4,300	6,000	5,689	-25.5%	39.1%	-5.2%	-1.9%
Walked the entire way	21,400	32,300	32,500	28,749	50.8%	0.8%	-11.5%	34.3%
Bicycle	9,600	13,700	8,600	12,182	42.6%	-37.2%	41.7%	26.9%
Other	3,300	2,500	2,100	1,145	-24.6%	-15.3%	-45.5%	-65.3%

Other Central Kelowna								
Total Trips	161,700	181,400	177,700	171,777	12.2%	-2.1%	-3.3%	6.2%
Auto Driver	117,900	130,300	128,900	122,670	10.6%	-1.1%	-4.8%	4.1%
Auto Passenger	28,800	32,000	31,400	31,537	10.9%	-1.9%	0.4%	9.5%
Transit Bus	1,500	4,900	3,200	4,254	215.9%	-33.6%	32.9%	183.6%
School Bus	5,700	4,000	4,000	4,297	-30.3%	0.2%	7.4%	-24.6%
Walked the entire way	5,100	7,600	8,900	6,734	49.3%	16.7%	-24.3%	32.0%
Bicycle	1,100	1,700	700	1,767	48.7%	-55.5%	152.5%	60.7%
Other	1,500	900	600	517	-38.4%	-40.9%	-13.9%	-65.6%

Exhibit - Table 54. Total Trips by Mode, Mode Shares – by Sub-Area, 2007-2024

	Mode Share				% Point Change			
Primary Mode	2007	2013	2018	2024	'07-'13 6-Year Δ	'13-'18 5-Year Δ	'18-'24 6-Year Δ	'07-'24 17-Year Δ
Vernon								
Total Trips	100.00%	100.00%	100.00%	100.00%				
Auto Driver	70.20%	67.90%	67.10%	67.19%	-2.3%	-0.8%	+0.1%	-3.0%
Auto Passenger	17.80%	17.80%	18.40%	16.82%	0.0%	+0.6%	-1.6%	-1.0%
Transit Bus	1.00%	1.20%	2.20%	2.58%	+0.2%	+0.9%	+0.4%	+1.6%
School Bus	2.30%	1.30%	0.60%	1.44%	-1.1%	-0.6%	+0.8%	-0.9%
Walked the entire way	6.90%	9.90%	9.90%	9.11%	+2.9%	0.0%	-0.8%	+2.2%
Bicycle	0.90%	1.40%	1.40%	2.48%	+0.5%	0.0%	+1.1%	+1.6%
Other	0.80%	0.60%	0.50%	0.38%	-0.2%	-0.1%	-0.1%	-0.4%
Kelowna								
Total Trips	100.00%	100.00%	100.00%	100.00%				
Auto Driver	69.40%	66.40%	65.90%	65.09%	-3.0%	-0.5%	-0.8%	-4.3%
Auto Passenger	17.50%	14.90%	18.10%	15.98%	-2.6%	+3.2%	-2.1%	-1.5%
Transit Bus	1.80%	4.40%	3.40%	4.84%	+2.6%	-0.9%	+1.4%	+3.0%
School Bus	1.60%	1.20%	1.50%	1.68%	-0.5%	+0.4%	+0.2%	+0.1%
Walked the entire way	6.10%	8.80%	8.40%	8.48%	+2.7%	-0.4%	+0.1%	+2.4%
Bicycle	2.70%	3.70%	2.20%	3.59%	+1.0%	-1.5%	+1.4%	+0.9%
Other	0.90%	0.70%	0.50%	0.34%	-0.3%	-0.1%	-0.2%	-0.6%
Other Central Kelowna								
Total Trips	100.00%	100.00%	100.00%	100.00%				
Auto Driver	72.90%	71.80%	72.50%	71.41%	-1.1%	+0.7%	-1.1%	-1.5%
Auto Passenger	17.80%	17.60%	17.70%	18.36%	-0.2%	0.0%	+0.7%	+0.6%

Transit Bus	1.00%	2.70%	1.80%	2.48%	+1.7%	-0.9%	+0.7%	+1.5%
School Bus	3.50%	2.20%	2.20%	2.50%	-1.3%	+0.1%	+0.3%	-1.0%
Walked the entire way	3.20%	4.20%	5.00%	3.92%	+1.0%	+0.8%	-1.1%	+0.7%
Bicycle	0.70%	0.90%	0.40%	1.03%	+0.2%	-0.5%	+0.6%	+0.3%
Other	0.90%	0.50%	0.30%	0.30%	-0.4%	-0.2%	0.0%	-0.6%

Exhibit - Table 55. Mode Shares by Age Group – Study Area, 2024

Age	Total Trips	Auto Driver	Auto Passenger	Transit Bus	School Bus	Walked	Bicycle	Other
Survey Total	608,298	67.2%	16.8%	3.8%	1.9%	7.3%	2.7%	0.3%
5 to 9 years	32,224	0.0%	71.4%	0.6%	8.5%	16.6%	2.1%	0.7%
10 to 15 years	44,460	0.0%	56.3%	10.1%	15.0%	15.4%	3.1%	0.1%
16 to 17 years	14,331	24.4%	34.5%	14.8%	12.9%	10.2%	3.2%	0.0%
18 to 24 years	40,025	61.9%	11.7%	17.0%	0.2%	7.5%	1.6%	0.0%
25 to 34 years	87,385	75.0%	8.6%	4.6%	0.0%	7.5%	4.1%	0.3%
35 to 44 years	107,021	82.6%	5.7%	2.0%	0.0%	6.4%	3.0%	0.2%
45 to 54 years	75,073	84.2%	8.5%	1.5%	0.0%	3.2%	2.3%	0.2%
55 to 64 years	87,902	81.4%	9.7%	0.8%	0.0%	5.0%	2.8%	0.2%
65 to 74 years	77,120	79.1%	11.3%	0.9%	0.0%	6.1%	1.8%	0.8%
75+ years	42,758	72.4%	16.7%	1.8%	0.0%	6.3%	1.9%	0.9%

Exhibit - Table 56. Workers with at Least One Work Trip, 2007-2024

	# of Workers				% Change			
	2007	2013	2018	2024	2007-2013 6-Yr Δ	2013-2018 5-Yr Δ	2018-2024 6-Yr Δ	2007-2024 11-Yr Δ
Total Number of Workers								
Full-Time	78,200	81,600	89,100	110,090	+4%	+9%	+24%	+41%
Part-Time	24,000	25,500	27,500	27,107	+6%	+8%	-1%	+13%
Total	102,200	107,000	116,700	137,197	+5%	+9%	+18%	+34%
Workers With At Least 1 Work Trip								
Full-Time	61,200	62,200	69,500	53,427	+2%	+12%	-23%	-13%
Part-Time	11,900	10,000	12,400	6,981	-15%	+24%	-44%	-41%
Total	73,100	72,300	81,900	60,408	-1%	+13%	-26%	-17%

Exhibit - Table 57. Share of Workers with at Least One Work Trip, 2007-2024

	# of Workers				%-Pt Change			
	2007	2013	2018	2024	2007-2013 6-Yr Δ	2013-2018 5-Yr Δ	2018-2024 6-Yr Δ	2007-2024 11-Yr Δ
Workers With At Least 1 Work Trip								
Full-Time	78%	76%	78%	49%	-2%	+2%	-29%	-29%
Part-Time	50%	39%	44%	26%	-10%	+6%	-18%	-24%
Total	71%	68%	70%	44%	-4%	+3%	-26%	-27%

Exhibit – Table 58. Transit Access Modes, 2024

	Survey Total	Vernon Residents	Kelowna Residents	Other Central Okanagan Residents
Transit Trips	**23,190**	**2,516**	**16,421**	**4,254**
Transit Access (% of trips):				
Walk Access Transit (WAT)	93.8%	85.7%	95.3%	92.6%
Drive Access Transit (DAT)	2.4%	8.0%	1.6%	2.1%
Drive Access Transit-Passenger (DATP)	3.0%	4.0%	2.2%	5.2%
Bicycle Access Transit (BAT)	0.6%	0.0%	0.8%	0.0%
Taxi Access Transit (TAT)	0.2%	2.3%	0.0%	0.0%

Exhibit - Table 59. Inter-Regional Flows (Expanded), 2024

Measure	24-Hour Total	AM Peak 6AM-8:59AM (3 hours)	PM Peak 2PM-5:59PM (4 hours)	Off-Peak (all other times of day)
Total Trips	608,200	127,100	224,700	256,400
Vernon internal	75,100	14,300	26,800	34,000
Kelowna internal	330,800	68,100	123,300	139,300
Other Central Okanagan internal	93,600	20,000	36,500	37,100
Entirely external	1,600	300	5,700	6,700
Inter-Regional Flows	107,100	24,500	37,600	45,100
Inter-Regional Flows				
Other Central Okanagan → Kelowna	34,500	13,200	7,900	13,500
Kelowna → Other Central Okanagan	35,100	3,300	16,00	15,900
Other Central Okanagan → Vernon	2,000	500	60	900
Vernon → Other Central Okanagan	1,900	300	800	800
Other Central Okanagan → External	3,400	1,500	700	1,300
External → Other Central Okanagan	3,600	200	1,800	1,600
Vernon → Kelowna	3,700	1,200	900	1,600
Kelowna → Vernon	3,600	500	1,500	1,600
Vernon → External	7,500	2,500	2,200	2,800
External → Vernon	7,500	400	3,800	3,300
Kelowna → External	2,100	800	600	700
External → Kelowna	2,100	200	800	1,100