THE UNIVERSITY OF BRITISH COLUMBIA
Campus + Community Planning

Transportation Status Report

Fall 2024

Executive Summary

UBC has set a number of transportation targets to reduce greenhouse gas emissions from commuting in support of our ambitious climate action plan targets and land use plan goals. To meet these targets, UBC encourages and supports more sustainable modes of transportation including transit, biking, walking and carpooling, through land-use and transportation planning, alongside an integrated transportation demand management strategy.

Every fall since 1997, UBC has monitored travel patterns to and from campus to evaluate progress towards its transportation targets. These targets and the corresponding results from the 2024 data collection effort are summarized below.

TARGET 1: By 2040 at least two-thirds of all trips to and from UBC will be made by walking, cycling or transit and maintain at least 50% of all trips to and from the campus on public transit.

× In 2024, 54% of all trips were made by transit, walking and cycling.

✓ In 2024, 52% of all trips to and from the campus were made by transit.

TARGET 2: Reduce Single Occupant Vehicle (SOV) trips to and from UBC by 20% from 1997 levels and reduce single occupancy vehicle trips per person to and from UBC by 30% from 1997 levels.

× In 2024, there were 48,700 SOV vehicle trips, which is a 6% increase from 1997 levels.

✓ In 2024, there were 0.76 SOV trips per person, which is a 30% reduction from 1997 levels.

TARGET 3: Maintain daily private automobile traffic at or less than 1997 levels. Private automobiles include single occupant vehicles and carpools / vanpools, but do not include buses, motorcycles and trucks.

✓ In 2024, there were 58,400 private vehicles per day, which is a 6% reduction from 1997 values.

The focus of the first transportation target is the mode of transportation used to travel to and from campus. Trips by mode from 1997 to 2024 are presented in *Figure A*. As shown, there have been substantial changes in the way people get to and from campus over the years. Up until 2020 there was an increase in the number of trips per day as a result of academic and neighbourhood growth on campus. From 2020 through 2023 the number of trips to and from campus was lower due than previous years due to the impacts of the pandemic, then in 2024 the number of daily trips exceeded 2019 levels. Compared to 1997, most of the increase in trips has been in trips by transit, which is credited to the introduction of the student U-Pass in 2003. In 2024, the sustainable mode share (walking + cycling + transit) was 54%, which is just under the high of 57% in 2013 and 2014.

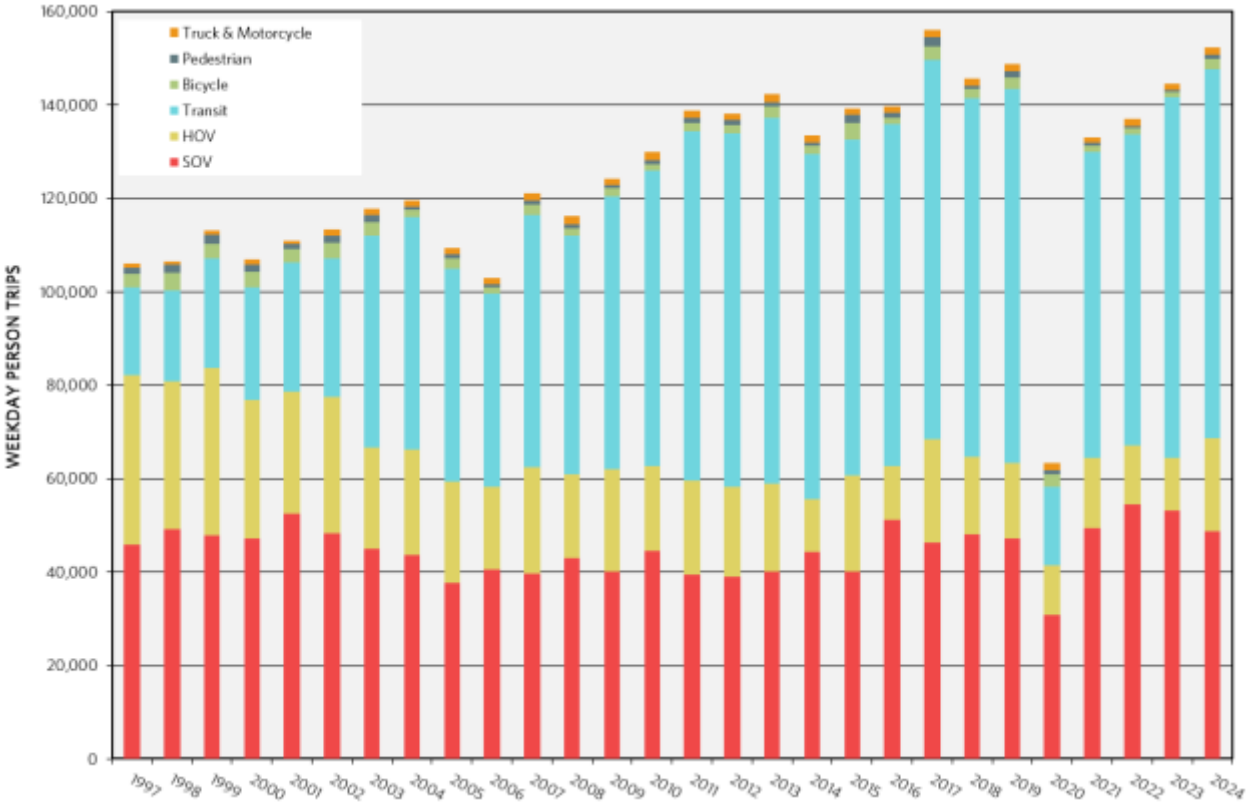

Figure A: Weekday Person Trips to / from UBC, 1997 - 2024

Bicycle and pedestrian mode share to and from UBC are very low in comparison to transit and SOV mode share, however, there are still an impressive number of people walking and biking to campus. In 2024 the number of people biking to and from campus nearly returned to 2019 levels with 2,200 bicycle trips per day. This is a doubling of what was observed in 2023 and may be from the introduction of a cross jurisdictional e-bike share program (with the City of Vancouver) in late 2023. It is anticipated that the number of pedestrian and bicycle trips will gradually increase, but the mode share for these two modes are not expected to increase significantly as a percentage of total trips to and from campus due to the longer commute distances from where a majority of the campus population lives and the uphill climb to get to campus.

The second transportation target is related to SOV trips compared to the baseline 1997 levels. In 2024, there was a 6% increase in SOV trips to and from campus compared to 1997. The number of SOV trips in 2024 are around 4,500 less than in 2023, which is a positive observation given the upward trend seen

over the last few years. The higher SOV trips may be attributed to ongoing avoidance of transit due to overcrowding as well as more people using ride-hail companies to commute to campus. In order for UBC to achieve its SOV targets in future years, the number of SOV trips to and from campus will need to decrease and trips made by transit, biking and carpooling will need to increase. This can be accomplished through ongoing efforts to encourage and support sustainable mode choices in addition to continued support for remote work, where possible.

Target 3 focuses on reducing overall automobile traffic, which includes SOV and HOV trips. *Figure B* captures the trend in automobile traffic to and from UBC since 1997. Included in the chart is a representation of the three-year rolling average, to soften fluctuations in data year to year, measured against campus population growth. In 2021, a new methodology was used to estimate the average daytime population on campus using Full Time Equivalent (FTE) numbers of staff, students and faculty, directly provided by UBC's Planning and Institutional Research (PAIR) department. This new methodology was retroactively applied back to 2000, which explains the drop in population between 1999 and 2000.

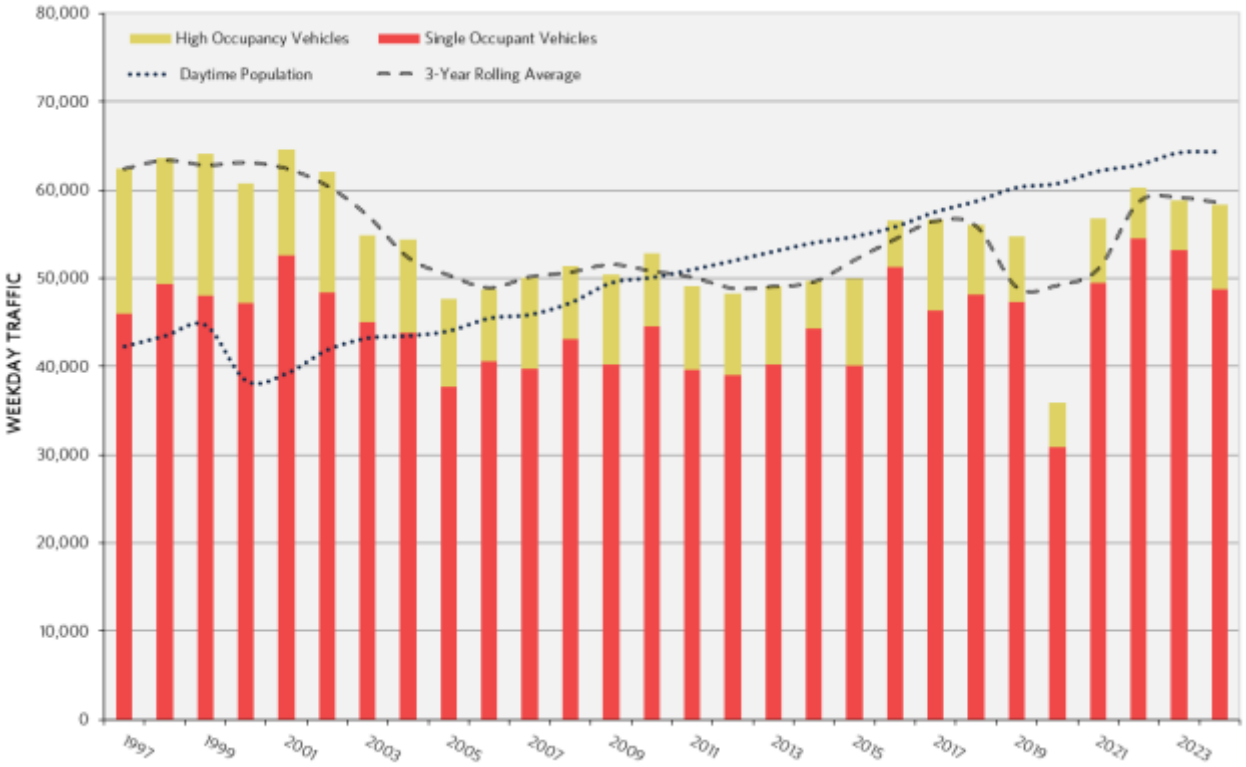

Figure B: Average Weekday Automobile Traffic to / from UBC, 1997 – 2024

Automobile traffic declined in 2003, which is when the U-Pass was introduced, and it remained relatively steady until 2016 at which point vehicle trips began to rise again (with the exception of 2020). Despite this, since 2003 overall vehicle volumes have remained below 1997 levels, which allows UBC to consistently achieve Target 3. Of note in 2024 is the nearly doubling of HOV trips compared to 2023, which may be attributed to the growing popularity of ride-hailing as a viable commute option.

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1 INTRODUCTION

Since 1997, UBC has collected data each fall to monitor travel patterns to and from the Vancouver Campus. This UBC Transportation Status Report Fall 2024 provides a snapshot of overall travel trends, and details of travel patterns for each mode of transportation to and from UBC, as well as an overview of transportation trend lines since 1997 at UBC.

Data was collected over one week in the fall of 2024. From 2020 through to 2023 the number of trips to and from campus were less than 2019 levels, likely as a result of the impacts of the pandemic and the rise in remote working and learning. However, in 2024 the number of trips to and from campus increased above 2019 values by nearly 4,000 trips.

1.1 Context

Transportation planning at UBC is undertaken within the direction and context provided by several plans and policies, including:

- **UBC Strategic Plan: Shaping UBC's Next Century** sets out UBC's collective vision and purpose, as well as goals and strategies for the years ahead. The Plan builds on the university's previous strategic plan, Place and Promise, and focuses on three themes that are believed to be critical to society today: Inclusion, Collaboration and Innovation. Shaping UBC's Next Century will guide decisions, actions and interactions into the future, and will create a framework for resource allocation across the University.

- Campus Vision 2050. In 2022, UBC launched Campus Vision 2050 – a comprehensive public planning process to create and update key land use policy documents, including the Vision and an amended Land Use Plan. The Vision is anchored around six big ideas, including a "Connected Campus", which prioritizes sustainable modes of transportation, including walking, rolling, cycling and micromobility, and transit. Campus Vision 2050 was approved by UBC's Board of Governors in December 2023.

- The UBC Land Use Plan. In June 2010, the Minister of Community and Rural Development enacted legislation that realigned the responsibility for this plan, previously known as the Official Community Plan. The University is responsible for the Land Use Plan with direct oversight by the Minister of Municipal Affairs. The Land Use Plan includes a number of transportation policies aimed at increasing walking, cycling and transit in preference to trips by single-occupant vehicles. The Land Use Plan also includes policies to support the development of complete and compact communities, helping reduce commuter trips to/from the campus. The Land Use Plan was last updated in December 2023 as an outcome of Campus Vision 2050, and was adopted by the BC Minister of Municipal Affairs in July 2024.

- The Vancouver Campus Plan. In 2010, UBC adopted a new Vancouver Campus Plan, which covers the academic lands of UBC's Vancouver Campus. This plan informs institutional development, including facilities for teaching and research, student housing and campus and transportation infrastructure and services. The Vancouver Campus Plan is being updated in 2025 to align with Campus Vision 2050.

- Neighbourhood Plans. For each of the neighbourhoods on campus, there is a neighbourhood plan describing site-specific land uses, development controls, design guidelines, and servicing and transportation strategies and infrastructure consistent with UBC's Land Use Plan. Each neighbourhood is designed to support the University's academic mission, while providing the amenities and services required to achieve a compact, transit-oriented, pedestrian friendly community.

- UBC Climate Action Plan 2030. UBC's Climate Action Plan (CAP 2030), puts the university on an accelerated path to net zero emissions for buildings and energy supply and includes targets for extended impact emissions, which includes commuting. Commuting by students, faculty and staff to the Vancouver campus is the highest extended impact emissions category accounting for nearly the same GHG emissions of buildings and energy supply combined. The Plan includes a suite of actions to significantly reduce greenhouse gas emissions by commuting over the next 15 years that are in alignment with UBC's Transportation Plan targets.

- Neighbourhood Climate Action Plan (NCAP). The NCAP was approved by UBC's Board of Governors in July 2024 and sets an accelerated pathway to a net-zero and climate resilient community for the residential neighbourhoods on UBC's Vancouver campus. NCAP identifies immediate and long-term actions to significantly reduce greenhouse gas emissions in the neighbourhoods and to prepare and adapt for the impacts of a changing climate. An integral part of NCAP is land use planning to create a compact community, where people have local access to community services reducing the need for car travel.

- The UBC Transportation Plan. UBC has committed to implement a comprehensive and integrated transportation demand management strategy. The Transportation Plan is the result of that commitment, and was approved by UBC's Board of Governors in November 1999, renewed in 2014 and being updated in 2025. The Plan is action oriented and includes targets to ensure accountability, and inform demand management strategies. Transportation infrastructure planning and related modelling are included in the Vancouver Campus Plan and Neighbourhood Plans. The targets identified in The Plan include:

    - TARGET 1: By 2040 at least two-thirds of all trips to and from UBC will be made by walking, cycling or transit and maintain at least 50% of all trips to and from the campus on public transit.

    - TARGET 2: Reduce single occupant vehicle trips to and from UBC by 20% from 1997 levels and reduce single occupancy vehicle trips per person to and from UBC by 30% from 1997 levels.

    - TARGET 3: Maintain daily private automobile traffic at or less than 1997 levels.

1.2 Transportation Monitoring Program

Travel patterns to and from UBC are monitored on an on-going basis through a variety of different data collection methods. Data is collected each fall to enable consistent year to year comparisons of travel patterns, mode shares, and traffic volumes. Additional data collection activities may be undertaken at

other times of the year to obtain information regarding specific modes of travel, seasonal variations and localized traffic volumes, but are not documented in this report. The annual monitoring results are used to assess progress towards meeting UBC's transportation targets and also help guide future implementation priorities.

Data collection activities for 2024 are summarized in *Table 1.1*, and data collection locations are illustrated in *Figure 1.1*.

Table 1.1: Summary of Transportation Data Collection

Data Collection Activity	Locations	Description
Turning Movement Counts (TMC)	At intersections throughout campus	Manual observation for 8 hours (3hrs in AM, 2hrs in Midday, 3hrs in PM) for one day.
Automatic Traffic Recorder (ATR) Volume / Speed Counts	Roads throughout campus	Automatic tube counters on roads for 7 days (24 hours / day).
ATR Screenline Traffic Counts	Screenlines	Automatic tube counters on roads for 7 days (24 hours / day).
Transit Ridership	Screenlines	Manual observation for 22.5hrs (6:00AM to 4:30AM) over one day.
Vehicle Occupancy & Classification	Screenlines	Manual observation for 8 hours (3hrs in AM, 2hrs in Midday, 3hrs in PM) for one day.
Bicycle and Pedestrian Counts	Screenlines	Manual observation for 15 hours (6AM to 9PM) over one day.
Heavy Trucks	Screenlines	Manual observation for 13 hours (6AM to 7PM) for one day each quarter.
Licence Plate Surveys	South Campus / Wesbrook Place Neighbourhood	Licence plate surveys are conducted to understand travel patterns. Every other year.

1.3 Understanding the Data

The following terms and measures are used throughout this report to describe various characteristics of travel patterns and trends at UBC:

- A screenline is an imaginary line across which trips are recorded. At UBC, the screenline around the campus is illustrated by the dotted blue line in *Figure 1.1*. As shown, there are approximately five different entry and exit options, indicated by the screenline automated traffic recorder (ATR).
- Mode share (also called "mode split") refers to the relative proportions of trips by various travel modes during a particular time period. Mode shares are generally reported for single occupant vehicles (SOVs), carpool and vanpools (also called high occupancy vehicles or HOV's), transit, bicycle, pedestrians and other modes such as motorcycles and trucks.
- The data presented in the Transportation Status Report include traffic volumes and person trips. Traffic volumes are simply the number of vehicles passing a point, whereas person trips are the number of people passing a point by all modes of transportation. A person trip is a one-way trip

made by one person. For example, in one hour there might be 500 vehicles travelling along a section of road (traffic volumes generally reflect vehicles travelling in both directions). These 500 vehicles might include 450 automobiles with a total of 600 persons in them, 30 buses with a total of 1,000 persons in them, and 20 light and heavy trucks with 25 persons in them. The total number of person trips associated with these 500 vehicles is 1,625 person trips.

Throughout this report, unless otherwise stated all reported trips are in person trips.

- The population at UBC — students, staff, faculty and residents —has increased every year from 1997. This means that when comparing absolute numbers of person trips and traffic volumes, changes from one year to another reflect the effects of two different factors — changes in travel patterns and increases in population growth. To distinguish changes in travel patterns from changes due to population increase, a different measure is used — trips per person. This provides a consistent basis for monitoring travel trends regardless of how much or how little population growth occurs. Trips per person are calculated as the number of person trips divided by the average daytime population on campus. The methodology to calculate the average daytime population was revised in 2021 to incorporate Full Time Equivalent's (FTE) of staff, students and faculty as reported by UBC's Planning and Institutional Research department. Numbers of UBC neighbourhood residents are not included in the population count, in many cases it could be a double count as a result of many staff, faculty and students living in UBC neighbourhoods.
- Substantial effort and cost are required to collect travel data at UBC. Consequently, it is neither reasonable nor necessary to collect all data in all locations at all hours of the day and night. Instead, some data are collected during selected time periods only (*Table 1.1* indicates the time periods for each type of data collection activity). Traffic data on all routes leading to and from UBC are collected over a period of one week in the fall using automatic counters placed on the roadway. Vehicle occupancy and classification counts are done manually for a total of 8 hours from the morning peak through the afternoon peak periods. Daily totals are estimated by combining occupancy and classification data with the average daily traffic data.
- Rolling average. Much of the data presented in this report is from a single day to a week. Observed travel patterns fluctuate from year to year and are heavily influenced by weather. Consequently, the results for any particular year should not be considered in isolation. A more meaningful picture of travel patterns is obtained by considering trends over time. To better illustrate trends and minimize the apparent variability from year to year, charts illustrating trips by mode for each year since 1997 include a trend line based on a three-year rolling average. Rolling averages are calculated as the average of a particular year plus one year before and one year after. This means that for 2006, for example, the rolling average is calculated as the average number of trips in 2005, 2006 and 2007.

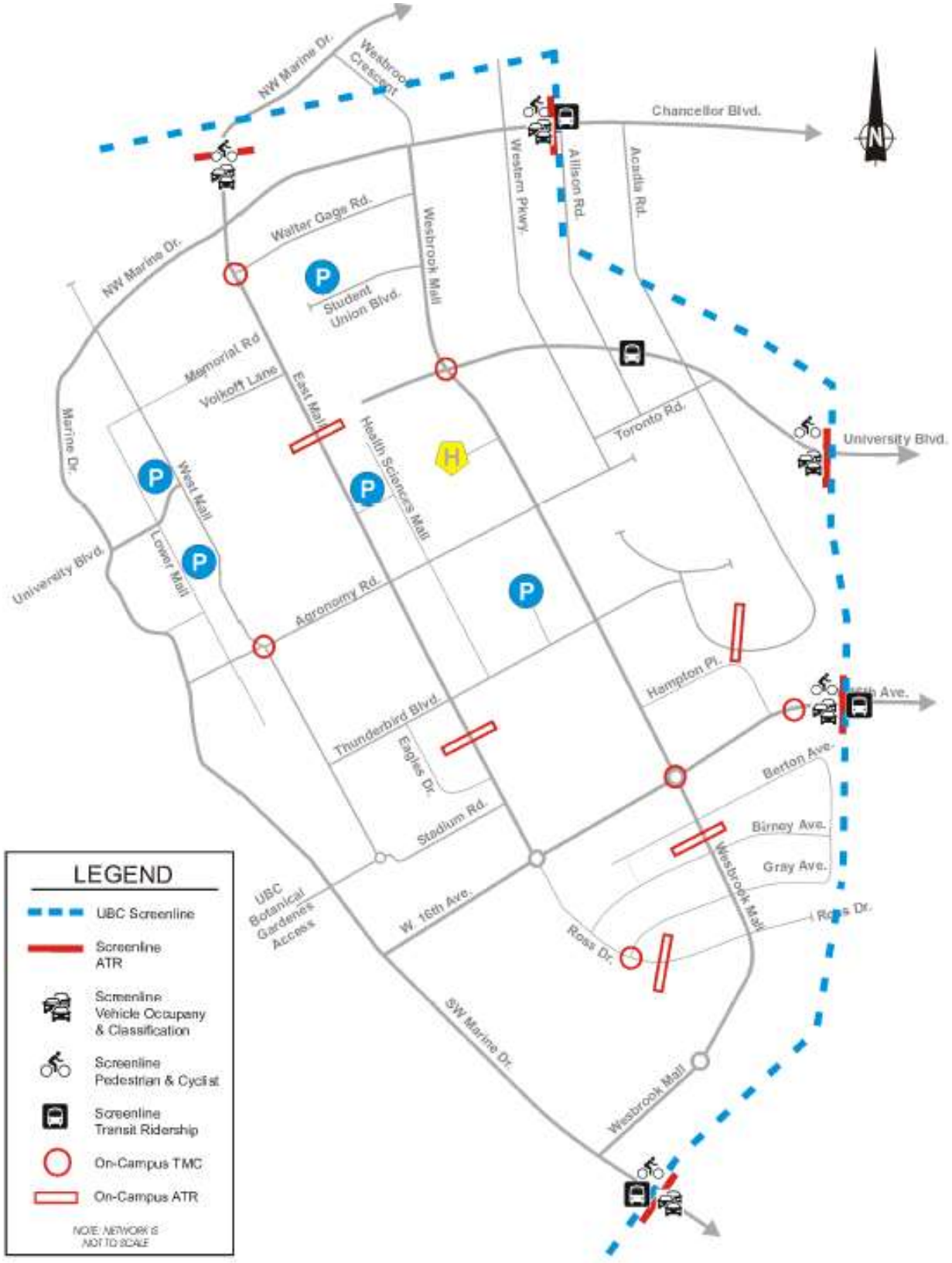

Figure 1.1: Data Collection Locations

1.4 Changes at UBC Affecting Travel Patterns

UBC is striving to reduce automobile trips to and from the UBC Vancouver Campus through land use planning and by encouraging the use of sustainable modes of transportation, including transit, carpooling, cycling and walking. UBC has implemented several initiatives in support of non-automobile modes of transportation, including a student U-Pass program, bicycle infrastructure, end-of-trip facilities, and a bicycle share program, carshare parking, a vanpool pilot program, a subsidized staff transit pass pilot program, and is exploring carpooling programs and incentives. In addition, TransLink, in collaboration with UBC, has made ongoing efforts to improve transit service and increase transit capacity to UBC.

Key changes at UBC that have affected travel patterns among students, staff, faculty and community members are as follows:

- Population. The daytime population at UBC has increased by 52% since 1997. This includes increased student enrolment and associated increases in faculty and staff. For the purposes of monitoring trends in travel to and from UBC, the average daytime population on campus, comprised of students (including those who live in student residence), staff and faculty, is used to calculate person trips. UBC neighbourhood residents are not included in the population estimate. In many cases it would result in a double-count since many staff, faculty and students live in UBC neighbourhoods. *Table 1.2* summarizes population figures for fall 1997 and fall 2024.

  It is important to note that the methodology for estimating the average daytime population changed in 2021 to better represent how many staff, students and faculty may be on campus each day. The average daytime population estimate is derived directly from the Planning and Institutional Research Department (PAIR) using Full Time Equivalent (FTE) numbers of staff, students and faculty.

  Table 1.2: Average Daytime Population at UBC, 2024 vs. 1997

Group	Fall 1997	Fall 2024	Increase (count / percentage)	
Students	33,200	48,950	+15,750	+47.4%
Staff	7,250	12,100	+4,850	+66.9
Faculty	1,850	3,300	+1,470	+80.3%
Totals	42,300	64,300	21,930	52.1%

  Source: UBC Planning and Institutional Research Department

- U-Pass Program. One of the most significant changes affecting travel patterns at UBC has been the student U-Pass, which was introduced in September 2003. The U-Pass is a universal transportation pass that is mandatory for all eligible students at a cost to students in 2024/2025 of $46 per month. The U-Pass offers students unlimited access to TransLink Bus, SkyTrain and SeaBus services (all zones), and discounted West Coast Express fares. The U-Pass program benefit is loaded onto the Compass Card, which came into effect in 2016, and enables more robust data collection on usage. Prior to this, the U-Pass program benefit was on a U-Pass card not capable of data collection.

- Increased transit service. In conjunction with introduction of the student U-Pass, TransLink has substantially increased the level of transit service to and from UBC and continues to make service improvements annually. The majority of the increase has been on the Route 99 B-Line. Other improvements since 1997 include a new Route 33 on 16th Avenue, and several express routes including the new R4 RapidBus Route launched in January 2020 that connects UBC to Joyce Station via 41st Avenue. TransLink ridership data indicates routes to UBC carry the highest passenger volumes in the region year over year. More effort is being made on transit priority in the region and at UBC with the provision of bus lanes on Wesbrook Mall between 16th Avenue and University Boulevard.

- Class start times were changed in September 2001. In an effort to spread the transit demand in the morning peak period, UBC adjusted morning class start times. Previously, the first classes in the morning all began at 8:30 a.m. This was changed so that some students begin classes at 8:00 a.m., some at 8:30 a.m., and others at 9:00 a.m. Subsequent analysis showed that the desired spreading of morning peak demands was achieved, and that as a result, 12% more transit trips per day were accommodated on the same number of buses. Although there are substantial limitations with further efforts to spread class start times, Campus Planning will continue to emphasize the importance with scheduling services to continue to spread the class start times out as class space permits.

- Parking supply and costs. UBC has eliminated approximately 3,500 commuter parking stalls on campus since 1997 — a reduction in the commuter parking supply of over 25%. At the same time, the price of parking on campus has increased (UBC does not provide any free parking spaces on campus for commuters). For example, the cost to park for the day for staff and faculty increased from $2 in 1997 to $14 in 2023, and prices for parking permits and visitor parking have also increased.

- Electric vehicle chargers. As a result of the growth in Electric Vehicle (EV) ownership across the region, UBC has been adding EV charging stations in the parkades across campus. Currently UBC Parking offers access to over 70 EV chargers (both Level 2 and fast chargers), which is the highest in the region per capita. UBC will continue to add more as capacity permits and has also started implementing strategies to increase turnover of the use of the stations.

- Bicycle facilities. Since 1997, new bicycle lanes have been implemented on several roadways on campus and to and from campus. Most notable was the conversion of University Boulevard west of Blanca, from two lanes in each direction to one travel lane and one bicycle lane in each direction. Bicycle lanes were also added on SW Marine Drive, Wesbrook Mall, East Mall, Thunderbird Boulevard and 16th Avenue. Similarly, the City of Vancouver has made significant progress on bike facilities that connect to the five key routes to and from UBC. All internal campus roads function as shared roadways that accommodate cyclists as well as automobiles. Bicycle racks are provided at every building on campus in addition to secure bike lockers, bike cages and numerous end-of-trip facilities. UBC also offers a bike share program on campus through HOPR with discounted rates for the campus community and in 2023 UBC partnered with MOBI to link the City of Vancouver's bike share program with UBC, allowing people to ride between the City of Vancouver and UBC.

- Alternative modes of travel. UBC has encouraged the use of non-single occupancy vehicle (SOV) modes of travel through a range of programs, including a comprehensive transportation demand management strategy that includes U-Pass, bike-share, carpooling, car sharing, cycling, a vanpool pilot, a discounted staff transit pass program pilot, an emergency ride home program, and other sustainable transportation programs.
- Campus development and land use. UBC has developed and is continuing to develop additional housing opportunities for students, staff, and faculty as a means of reducing the commuting population. At the same time, an increased number and range of commercial services and amenities are now available on campus and in the University Endowment Lands adjacent to campus to reduce the need to travel off campus.

1.5 More Information

The following resources provide additional information regarding travel patterns and trends at UBC, as well as transportation services and facilities. Most of this information can be found at UBC's Campus and Community Planning website:

- This UBC Transportation Status Report Fall 2024, along with previous Transportation Status Reports.
- The 2022 and 2017 Transportation Survey.
- 2014 UBC Transportation Plan.
- The 2005 Strategic Transportation Plan.
- A review of the first 18 months of the student U-Pass program and the results of the Community Transportation Pass (ComPASS) demonstration project.
- Information on other transportation facilities and services on campus.
- Information regarding campus plans and neighbourhood plans.

2 Summary of Transportation at UBC

This section presents a general summary of transportation to and from UBC including person trips, trips per person, mode share, and vehicle occupancy. Details for each different mode of transportation are presented in *Section 3*.

2.1 Person Trips

The average weekday person trips to and from UBC in fall 2024 was 152,400. A summary and comparison of daily person trips by mode for 1997, 2023 and 2024 are provided in *Table 2.1* and *Figure 2.1*.

Table 2.1: Weekday Person Trips to / from UBC Vancouver

Travel Mode Classification	Person Trips				
	Fall 1997	Fall 2023	Fall 2024	Change 1997-2024 (count / %)	
Single Occupant Vehicle (SOV)	46,000	53,200	48,700	+2,700	+5.9%
Carpool / Vanpool (HOV)	36,100	11,400	20,000	-16,100	-44.6%
Transit	19,000	77,100	79,000	+60,000	+315.8%
Bicycle	2,700	1,100	2,200	-500	-18.5%
Pedestrian	1,400	400	1,000	-400	-28.6%
Truck & Motorcycle	900	1,400	1,500	+600	+66.7%
Totals	106,100	144,600	152,400	+46,300	+43.6%

For the first time since the Pandemic, travel trends have returned to 2019 conditions. In 2024 there were 3,600 (2%) more trips compared to 2019.

Compared to 2023:

- Transit trips increased by approximately 1,900 (2.5%) trips per day.
- SOV trips decreased by approximately 4,500 (8.5%) trips per day.
- HOV trips increased by approximately 8,600 (75%) trips per day.
- Walking and biking trips increased by approximately 1,700 (113%) trips per day.

There is a lot of variability in trips by mode year over year. To help smooth the variability, a three-year rolling average is referenced throughout the report.

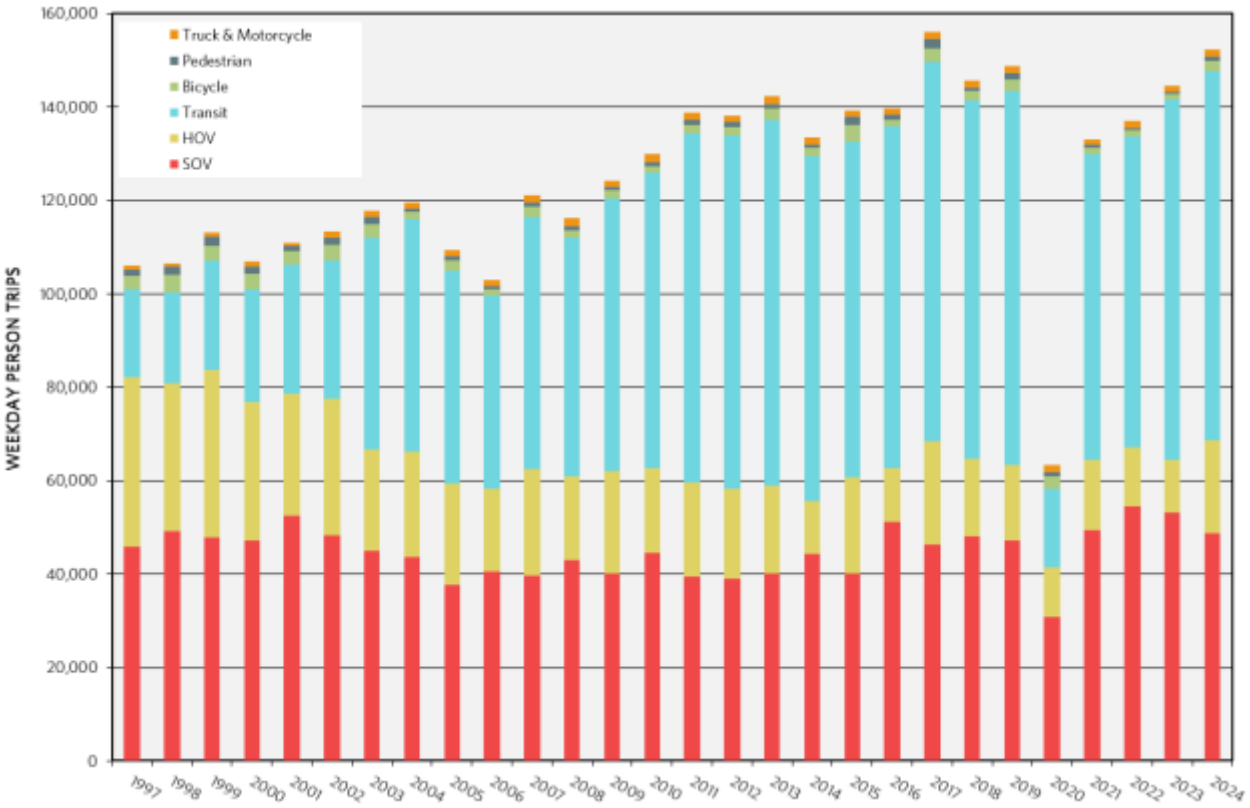

Figure 2.1: Weekday Person Trips to / from UBC, 1997 – 2024

To compare travel patterns from year to year on a consistent basis, it is important to negate the effects of population / enrolment growth. To compare the trips per person by mode, the average weekday person trips for each mode is divided by the average number of people on campus per day. The methodology used to determine the average weekday population on campus changed in 2021 and includes FTE for staff, students and faculty. The campus population and trips per person to and from UBC are presented in *Table 2.2*.

Table 2.2: Weekday Trips Per Person to / from UBC

Travel Mode Classification	Trips Per Person				
	Fall 1997	Fall 2023	Fall 2024	% Change 2023-2024	% Change 1997-2024
Single Occupant Vehicle	1.09	0.83	0.76	-8.6%	-30.4%
Carpool / Vanpool	0.86	0.18	0.31	+75.2%	-63.6%
Transit	0.45	1.20	1.23	+2.3%	+173.2%
Bicycle	0.06	0.02	0.03	+99.7%	-46.5%
Pedestrian	0.03	0.01	0.02	+149.6%	-53.1%
Truck & Motorcycle	0.02	0.02	0.02	+7.0%	+9.5%
Totals	2.51	2.25	2.37	+5.2%	-5.6%
AVG DAYTIME	*42,300*	64,200	64,300	+0.2%	+52%

**Avg. Daytime population numbers obtained from PAIR and include FTE of students, staff and faculty.*

In 2024 the total trips per person was 2.37, which is just under pre-pandemic levels (2.47). Transit trips per person continue to inch closer to pre-pandemic levels (1.33).

2.2 Mode Share Summary

The mode share comparison for 1997 and 2024 is shown in *Figure 2.2*. The most noticeable differences in 2024 compared to 1997 are the increased transit mode share, decreased HOV mode share, and decreased SOV and bicycle mode shares.

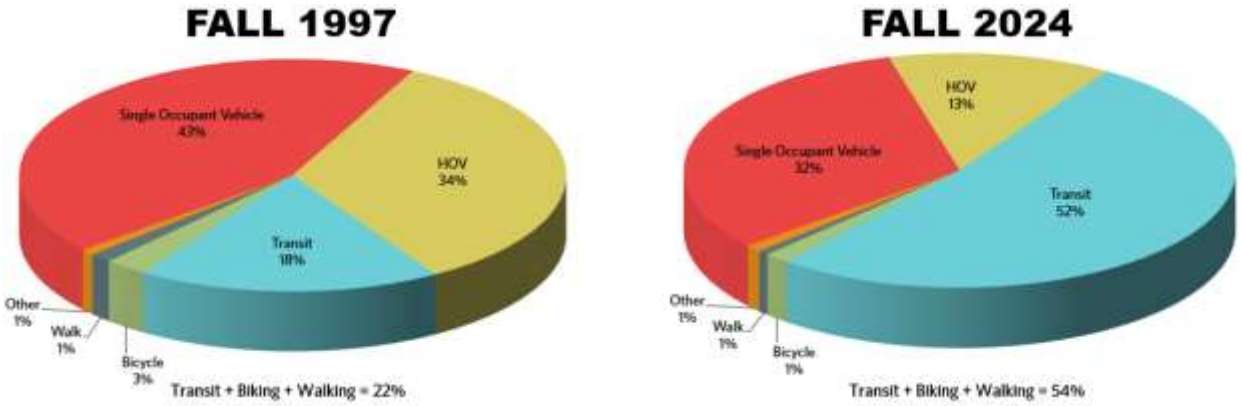

Figure 2.2: Average Weekday Trips by Mode to / From UBC, 1997 vs. 2024

TARGET 1: By 2040 at least two-thirds of all trips to and from UBC will be made by walking, cycling or transit and maintain at least 50% of all trips to and from the campus on public transit.

× In 2024, 54% of all trips were made by transit, walking and cycling.

✓ In 2024, 52% of all trips to and from the campus were made by transit.

The distribution of weekday person trips throughout the day is shown below in *Figure 2.3*. In 2024, the peak hour number of trips increased in the afternoon peak compared to 2023 with an even sharper peak distribution of trips, which is less desirable than spread-out peak periods. Rounded peaks reduce the strain on the transportation network and more importantly the public transportation system. Peak demands like what is shown below, translate to traffic congestion, overcrowding and a poor experience for transit riders, which can push people to less sustainable transportation alternatives.

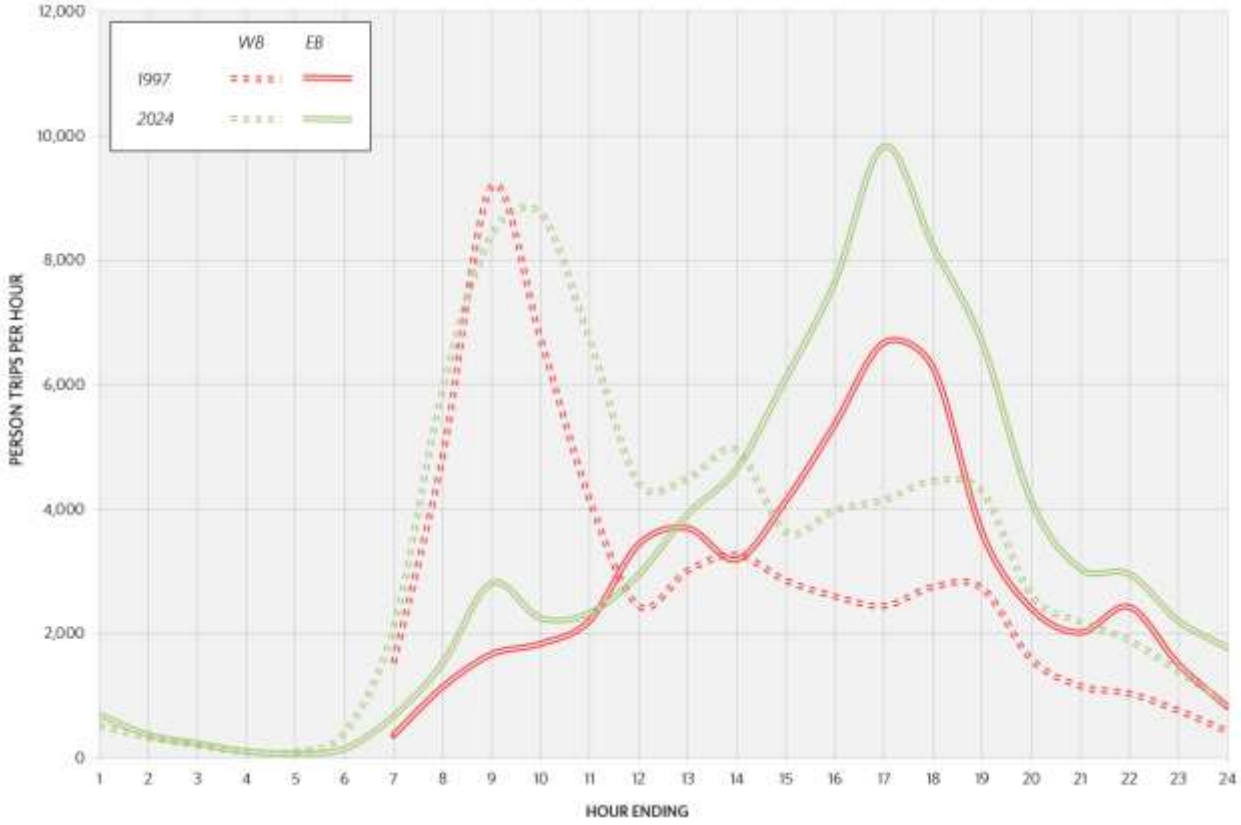

Figure 2.3: Hourly Distribution of Average Weekday Person Trips to / from UBC, 1997 vs. 2024

There is an increase in the number of trips in the off-peak direction compared to 1997. This is generated from the increased residential population on campus that travel outside of the UBC boundary daily for work or other needs.

The peak hour summary of trips by mode is summarized in *Table 2.3*. This information is useful to understand how many trips per hour are occurring and by what mode. In 2024, the morning peak hour to campus experienced lower volumes compared to the afternoon peak hour from campus, attributable to more people ending work and classes at the same time.

Table 2.3: Average Peak Hour Person Trips by Mode to/from UBC, 2024

Travel Mode Classification	AM Peak Hour (9am to 10am)		PM Peak Hour (4pm to 5pm)	
	Westbound	Eastbound	Westbound	Eastbound
Single Occupant Vehicle (SOV)	2,087	1,216	1,236	2,499
High Occupancy Vehicle	685	245	741	724
Transit	5,770	687	1,960	6,401
Bicycle	95	34	115	131
Pedestrian	38	22	81	25
Truck & Motorcycle	88	41	16	48
Totals	8,762	2,245	4,149	9,828

2.3 Automobile Traffic

Automobile traffic to and from UBC decreased substantially from 1997 values when the U-Pass was introduced in 2003, but began climbing again in 2016.

The second target in UBC's transportation plan is to reduce single occupant vehicle trips to and from UBC by 20% from 1997 levels. In 2024, this target was not met as shown *in Table 2.4*.

Table 2.4: Average Weekday SOV and HOV Traffic Volume to/from UBC, 1997 vs. 2024

Travel Mode Classification	Fall 1997	Fall 2024	Change (count / percentage)	
Single Occupant Vehicle (SOV)	46,000	48,700	+2,700	+6%
High Occupant Vehicle (HOV)	16,400	9,700	-6,700	-41%
Totals	62,400	58,400	-4,000	-6%

In 2024, the number of average weekday automobile trips is 6% below 1997 levels, which is attributed to a substantial decrease in HOV traffic. SOV traffic has been generally increasing since 2012, which will be discussed further in Section 3.3.

Table 2.5 summarizes the daily traffic volumes at each screenline location. It is important to note that these figures include trucks, buses and motorcycles, in addition to SOV's and HOV's so the numbers in this table do not match those presented in *Table 2.4*.

Table 2.5: Summary of Average Weekday Traffic Volumes at Screenlines

Screenline	Average Daily Traffic Volume			
	Fall 1997	Fall 2022	Fall 2023	Fall 2024 (%)
NW Marine Drive	2,040	1,625	1,220	980 (2%)
Chancellor Boulevard	11,660	8,370	8,670	9,380 (15%)
University Boulevard	14,610	11,600	10,970	9,700 (16%)
16th Avenue	12,880	15,165	17,480	19,090 (31%)
SW Marine Drive	23,410	27,700	23,990	22,430 (36%)
Totals	64,600	64,460	62,300	61,600

There was a slight decrease in overall traffic to and from campus in 2024 compared to 2023. The most notable difference in arrival patterns is more traffic arriving and departing campus via 16th Avenue, with an increase in over 1,600 vehicle trips per day. The traffic volumes on 16th Avenue have been steadily increasing above 2019 values of 16,720. This may be attributable to more growth in Wesbrook Place, but could be attributed to changes in travel patterns as a result of congestion on City of Vancouver routes.

Vehicle occupancy allows UBC to understand travel patterns of the community. Vehicle occupancy is a measure of the average number of people travelling per vehicle during a certain period of time and are presented in *Table 2.6* for the last few years. As shown, the average vehicle occupancy for all vehicle trips in 2024 is much higher than the last few years, which is from the increase in HOV trips in 2024. The number of people in carpool trips increased slightly in 2024 at 2.07 people per carpool vehicle.

Table 2.6: Average Daily Vehicle Occupancy to / from UBC

Travel Mode Classification	Fall 1997	Fall 2022	Fall 2023	Fall 2024
Vehicles (SOV's + HOV's)	1.32	1.11	1.10	1.18
HOV's (Carpools / Vanpools)	2.20	2.17	2.05	2.07

3 Transportation to and from UBC

This section of the Transportation Status Report describes travel patterns and trends for trips to and from the UBC Vancouver campus for each mode of travel. Information regarding transportation conditions on campus is presented in *Section 4*.

3.1 Transit

Generally, transit usage has been very high as a result of the student U-Pass program, continued improvements in transit service, a reduced supply of commuter parking, and higher parking costs on campus.

Table 3.1 provides a summary of transit trips and transit mode share from fall 1997 to fall 2024, highlighting the change from 2002 to 2003 when the student U-Pass was introduced. In 2024, there were 79,000 trips per day, which is up from 2023, and just below the number of transit trips in 2019.

Table 3.1: Summary of Average Weekday Transit Trips to / from UBC

Transit Trips	Before U-Pass		After U-Pass		Change 1997-2024 (count / percentage)	
	Fall 1997	Fall 2002	Fall 2003	Fall 2024		
Person Trips	19,000	29,700	45,400	79,000	+60,00	+316%
Trips Per Person	0.45	0.71	1.05	1.23	+0.78	+173
Transit Mode Share	18%	26%	39%	52%	+34%	+189

Table 3.2 provides a summary of transit trips by corridor while *Table 3.3* provides a summary of transit trips by route comparing the last three years. Similar to growth in vehicle traffic along 16th Avenue, a growth in trips by transit was also observed in 2024.

Table 3.2: Average Weekday Transit Trips to / from UBC by Corridor

Corridor	Fall 2019 (%)	Fall 2022 (%)	Fall 2023 (%)	Fall 2024 (%)
Chancellor Blvd.	11,120 (14%)	6,500 (10%)	9,100 (12%)	8,620 (11%)
University Blvd.	31,200 (39%)	26,720 (40%)	29,150 (38%)	26,070 (33%)
16th Avenue	10,230 (13%)	9,850 (15%)	8,650 (11%)	12,070 (15%)
SW Marine Drive	27,640 (34%)	23,530 (35%)	30,200 (39%)	32,235 (41%)
Totals	80,190	66,600	77,100	79,000

Table 3.3: Average Weekday Daily Transit Trips to / from UBC by Route

Route		Fall 2022 (%)	Fall 2023 (%)	Fall 2024 (%)
4	4th Avenue	3,440 (5%)	3,840 (5%)	3,395 (4%)
9	Broadway	1,270 (2%)	1,490 (2%)	1,085 (1.5%)
14/N17	Broadway	4,190 (6%)	4,300 (6%)	4,475 (6%)
25	King Edward	6,360 (10%)	5,440 (7%)	8,140 (10%)
33	16th Avenue	3,480 (5%)	3,150 (4%)	3,930 (5%)
44	4th Ave. Express	2,470 (4%)	4,340 (6%)	3,975 (5%)
49	49th Avenue	8,660 (13%)	12,680 (16%)	14,760 (19%)
84	4th Ave. Express	4,040 (6%)	4,750 (6%)	4,640 (6%)
99	Broadway B-Line	17,770 (27%)	18,690 (24%)	17,070 (22%)
R4	41st Ave RapidBus	14,760 (22%)	17,560 (23%)	17,160 (22%)
NIS*	Not In Service	160 (0.2%)	910 (1%)	377 (0.5%)
	Totals	66,600	77,100	77,100

**Not In Service buses are those labelled as Not In Service instead of a route number on their display either to or from campus.*

In January 2020, the new R4 RapidBus was launched, to replace the 43 and 41. It has proven to be a very popular service, exceeding the 99 a few times in the last few years including 2024 where it carried the highest volume of passengers to and from UBC. The introduction of the R4 also impacted the distribution of transit trips, as shown in *Table 3.2*, resulting in more transit trips along SW Marine Drive compared to the years before the R4 was launched.

Figure 3.1 illustrates transit ridership from year to year and includes the three-year rolling average to help soften variation year over year. A sharp increase was observed in 2003 when the U-Pass was introduced, which was followed by a steady increase until it leveled off in 2011. Transit ridership has been recovering since 2020 and is now almost at pre-pandemic 2019 levels.

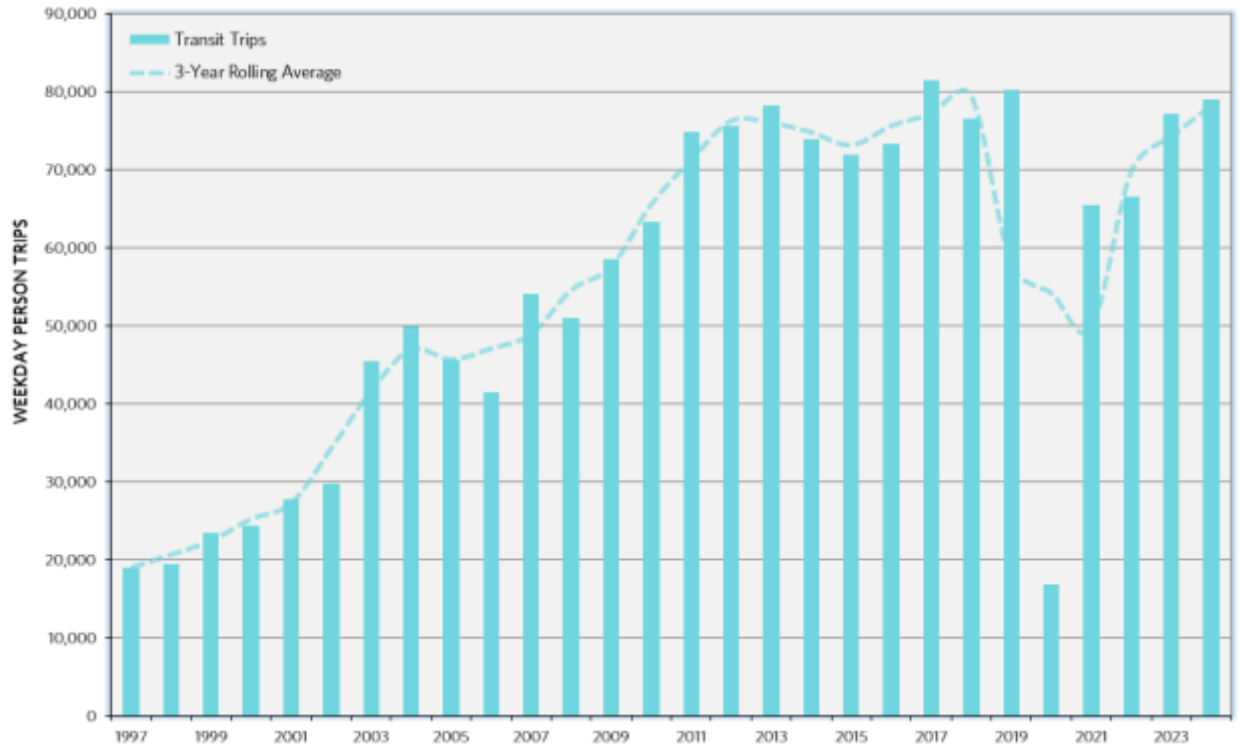

Figure 3.1: Average Weekday Transit Trips to / from UBC, 1997 – 2024

A summary of the most significant observations about transit trips to and from UBC is as follows:

- Bus routes using University Boulevard account for 33% of all transit trips to and from UBC, which is lower than previous years. The highest number of transit trips arrive and depart UBC on routes using SW Marine Drive, with 41% of all transit trips due to the popularity of the R4 route.
- Ridership in the "UBC Line"[1] corridor amounts to 59% of all transit trips to and from UBC.
- The R4 RapidBus and the 99 B-Line carries 43% of all transit trips to and from UBC.
- Express bus routes carry 55% of all transit trips.
- Trolley bus Routes account for 11% of all transit trips.

[1] UBC Line refers to the future rapid transit line to UBC that is expected to be used by people currently taking transit to / from UBC via Chancellor Boulevard, University Boulevard and 16th Avenue.

The daily distribution of transit trips to and from UBC in 2024 and 1997 is shown in *Figure 3.2*. Compared to 2023, the directional peak periods in 2024 are higher with sharper peaks, particularly the evening peak hour ending at 5pm. Sharp peaks are less desirable as they translate to overcrowded buses and pass-ups along the route, which in turn contribute to unsatisfied customers and people choosing alternative, less sustainable modes. In 2024, there were fewer transit trips off campus in the morning compared to 2023.

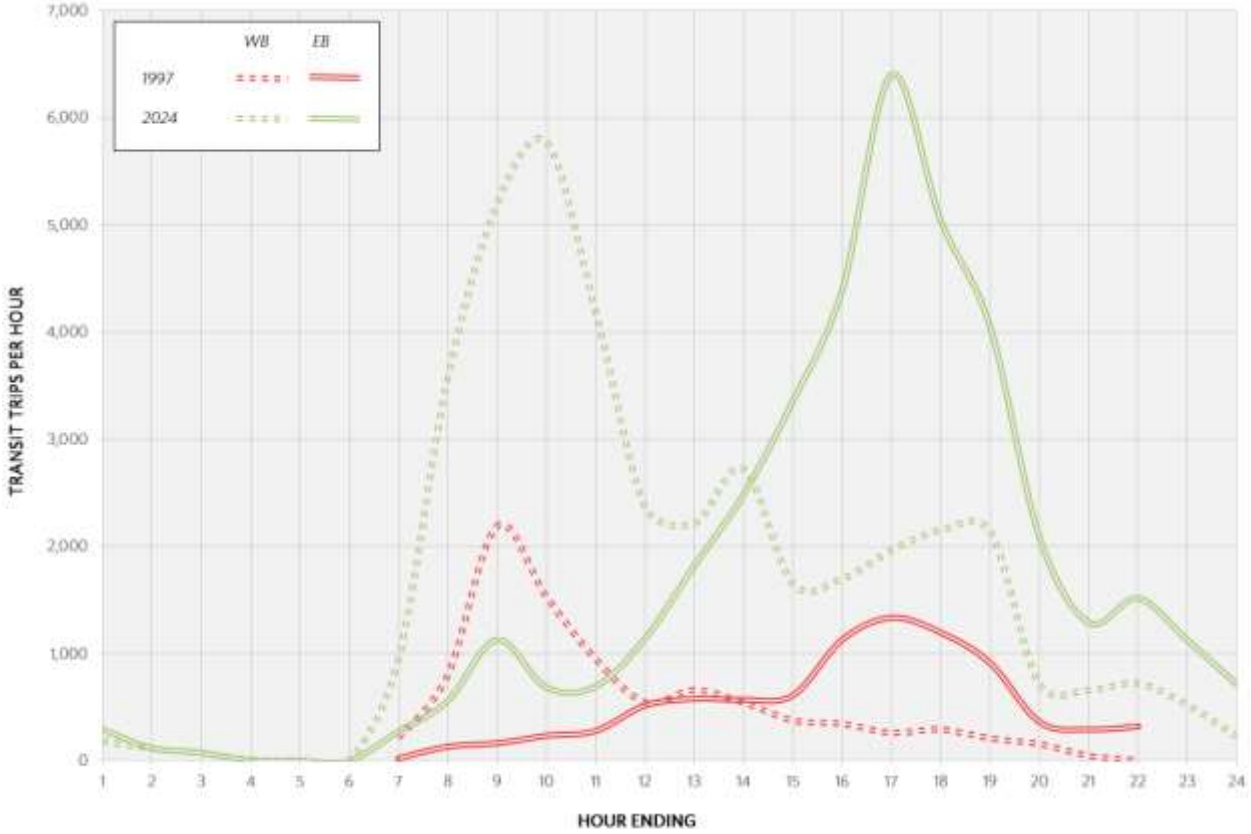

Figure 3.2: Distribution of Average Weekday Transit Trips to / from UBC, 1997 vs. 2024

In 2022, UBC carried out a transportation survey of the campus community to gather more detailed information about travel to, from, and around campus. This survey is carried out approximately every five years to supplement annual monitoring and is used to help inform future improvements on campus. The top three responses to a question about what would increase the likelihood of travelling to or from campus by public transit more often were a rapid transit connection; reduced overcrowding; and increased frequency of service. In fact, 69% of all survey respondents said they would very likely take transit if there was a rapid transit connection to UBC. Of people that currently do take transit to travel to or from UBC, the average travel time from respondents was 58 minutes, one way, which is up from 51 minutes from the 2017 survey results.

3.2 Bicycles and Pedestrians

Table 3.4 and *Figure 3.3* provide summaries of the trend in bicycle trips from fall 1997 to fall 2024. To help support more cycling trips, a fully protected bike route to UBC is a high priority for UBC with continued advocacy efforts to the BC Ministry of Transportation and Transit for improvements, who own and maintain all roads to and from campus, including SW Marine Drive, NW Marine Drive, 16th Avenue, Chancellor Boulevard, and University Boulevard.

Table 3.4: Summary of Average Weekday Bicycle Trips to / from UBC, 1997 vs. 2024

Average Weekday Bicycle Trips	Before U-Pass		After U-Pass		Change 1997-2024 (count / percentage)	
	Fall 1997	Fall 2002	Fall 2022	Fall 2024		
Person Trips	2,700	3,300	1,300	2,200	-500	-19%
Trips Per Person	0.06	0.08	0.02	0.03	-0.03	-46%
Bicycle Mode Share	2.5%	2.9%	1%	0.7%	-0.7%	-50%

Since data is recorded over a single day, variations in data year over year are highly anticipated, particularly as weather has a direct correlation with people's decision to ride their bike. This is why the 3-year rolling average is used as a better indicator of travel trends.

Figure 3.3: Average Weekday Bicycle Trips to / from UBC, 1997 – 2024

In 2019, UBC entered into a new bike share program with HOPR on campus. This program did not have an impact on cycling commuter trips since the program serves on campus trips only. In late 2023, an integrated e-bike share program between UBC and the City of Vancouver launched, which could be contributing to the doubling of trips by bike to and from campus.

From the 2022 Transportation Survey, 32% of people who biked to campus once a week or less indicated they would very likely travel to and from campus by bike or e-bike more often with a bike share program. The Transportation Survey also asked the campus community what would help them bike to campus more often (including e-bikes and other micromobility devices). The top three responses were if they lived closer to campus; if they had access to cheaper or discounted e-bikes; and if there were more higher-quality secure bike parking and end of trip facilities.

All buses operating on transit routes serving UBC are equipped with bicycle racks, each of which has space for two bicycles. Below is a summary of the usage of racks over the past three years:

- In 2024, total of 72 bicycles were on buses at a 1.9% usage rate of rack space.
- In 2023, total of 90 bicycles were on buses at a 2.4% usage rate of rack space.
- In 2022, total of 79 bicycles were on buses at a 1.9% usage rate of rack space.

UBC tracks this usage to identify capacity issues. It is not uncommon for bike racks on popular routes to campus be full in the morning because more cyclists (63%) bring their bikes on buses westbound, up the hill, to campus. The most popular transit route for cyclists to travel with their bicycles is the 99 B-Line.

Table 3.5 provides a summary of the trend in pedestrian trips, and *Figure 3.4* illustrates year-by-year changes. Similar to bicycle trips, pedestrian trips decreased significantly after the U-Pass was introduced and have fluctuated over the past few years, but a jump in pedestrian trips occurred in 2024.

Table 3.5: Summary of Average Weekday Pedestrian Trips to / from UBC, 1997 vs. 2024

Average Weekday Pedestrian Trips	Before U-Pass		After U-Pass		Change 1997-2024 (count / percentage)	
	Fall 1997	Fall 2002	Fall 2023	Fall 2024		
Person Trips	1,400	1,600	400	1,000	-400	-29%
Trips Per Person	0.03	0.04	0.01	0.03	-0.02	-53%
Pedestrian Mode	1.3%	1.4%	0.3%	1.4%	-0.7%	-50%

Over the long term, UBC doesn't anticipate an increase in pedestrian trips or pedestrian mode share to and from campus as a result of the location of the campus and the distance to where a majority of the commuting population lives. However, UBC will continue make improvements to walking infrastructure to enhance the walking and rolling experience on campus since all trips must start or end with these modes.

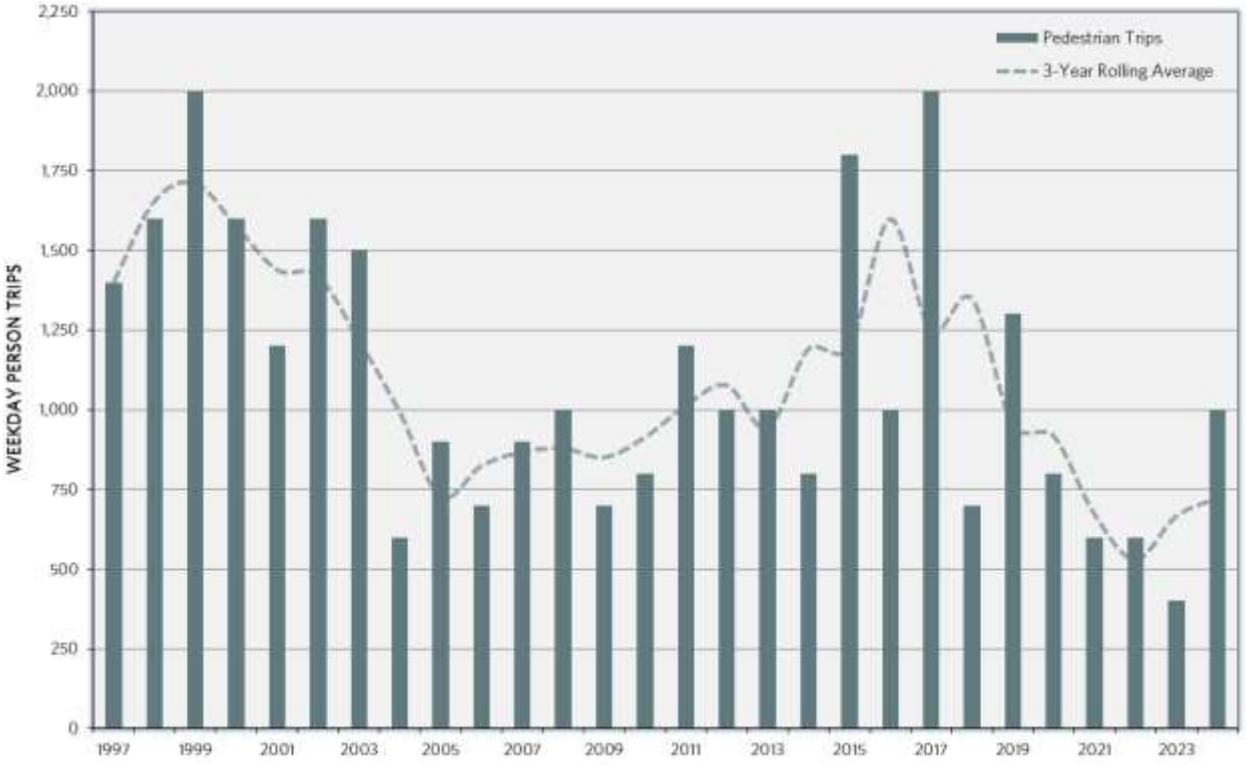

Figure 3.4: Average Weekday Pedestrian Trips to / from UBC, 1997 – 2024

In 2022, the BC Ministry of Transportation and Transit (MoTT) completed an Active Transportation Study of the area, which identified the need for improvements to active transportation infrastructure on all Ministry roadways. Timelines for implementation have not been identified, but UBC will continue to advocate for these essential improvements to support the use of active modes of travel to and from campus.

3.3 Automobiles

UBC is committed to reducing the amount of single occupant automobile traffic travelling to and from UBC each day as indicated by two of the three transportation targets (Section 1.1) focusing on vehicle traffic.

Table 3.6 provides a comparison of SOV travel in fall 1997, 2023 and 2024, and *Figure 3.5* provides a summary of year-by-year changes with the three-year rolling average.

Table 3.6: Summary of SOV Trips to / from UBC

Average Weekday SOV Trips	Fall 1997	Fall 2023	Fall 2024	Change 1997-2024 (count / percentage)	
Person Trips	46,000	53,200	48,700	+2,700	+6%
Trips Per Person	1.09	0.83	0.76	-0.33	-30%
SOV Mode Share	43%	37%	32%	-11%	-26%

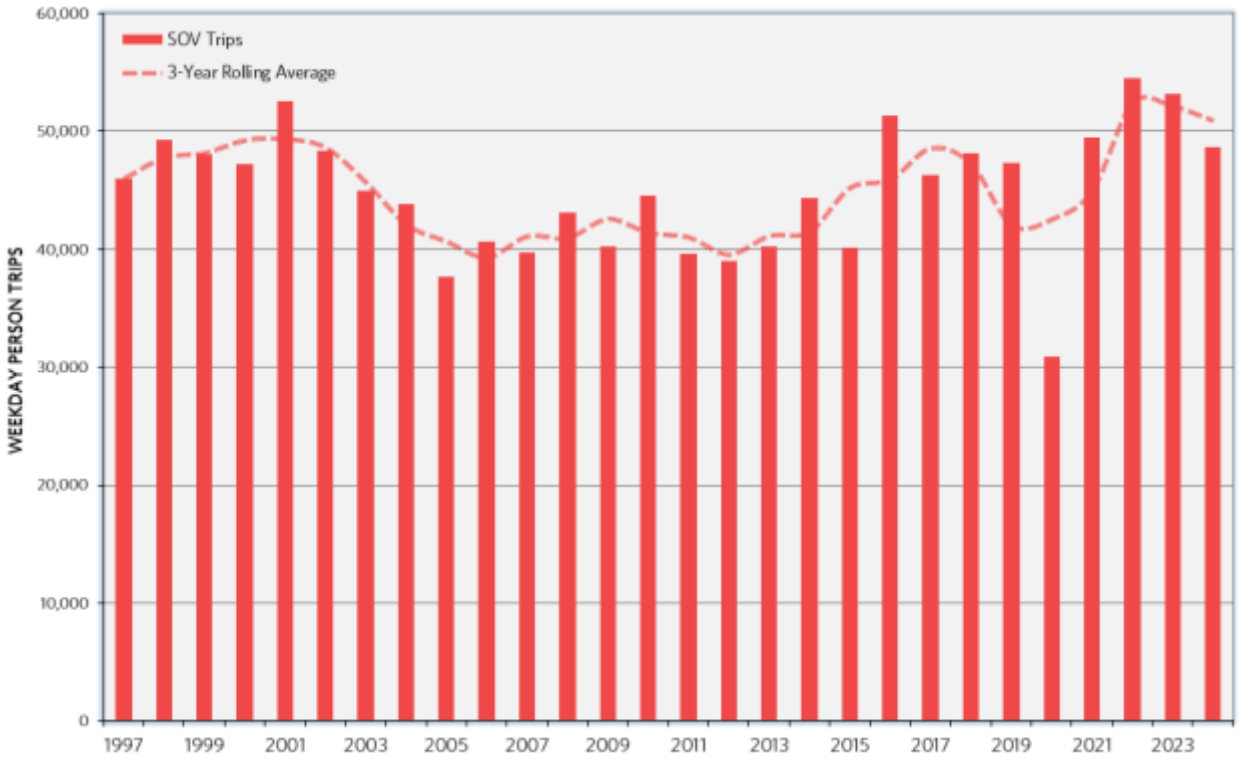

Figure 3.5: Average Weekday SOV Trips to / from UBC

This year, the number of SOV trips decreased further from the 2022 all-time high, but still remain higher than 2019 levels. This is likely attributable to an over capacity transit system and people finding other more convenient ways to get to and from campus such as getting dropped-off and picked-up by family, friends, or using ride-hail companies.

From the 2022 Transportation Survey, the campus community was asked why they chose to drive alone. Their top three responses were to save time; for convenience; and because they live too far from UBC to take transit.

Carpooling, or High Occupancy Vehicle travel (HOV), has decreased substantially since 1997, however, in 2024 a significant jump in the number of HOV trips was observed. A summary of the trend in HOV travel is provided in *Table 3.7*, and a summary of year-by-year changes and the three-year rolling average is provided in *Figure 3.6*.

Table 3.7: Summary of HOV Trips to / from UBC

Average Weekday HOV Trips	Fall 1997	Fall 2023	Fall 2024	Change 1997-2024 (count / percentage)	
Person Trips	36,100	11,400	20,000	-16,100	-45%
Trips Per Person	0.85	0.18	0.31	-0.54	-64%
HOV Mode Share	34%	8%	13%	-21%	-61%

One possible explanation for the increase in HOV trips is more people getting picked-up or dropped-off from friends / family or using ride-hail companies. Big fluctuations in HOV trips has happened before, so UBC will pay close attention to the number of HOV trips in 2025 and onwards.

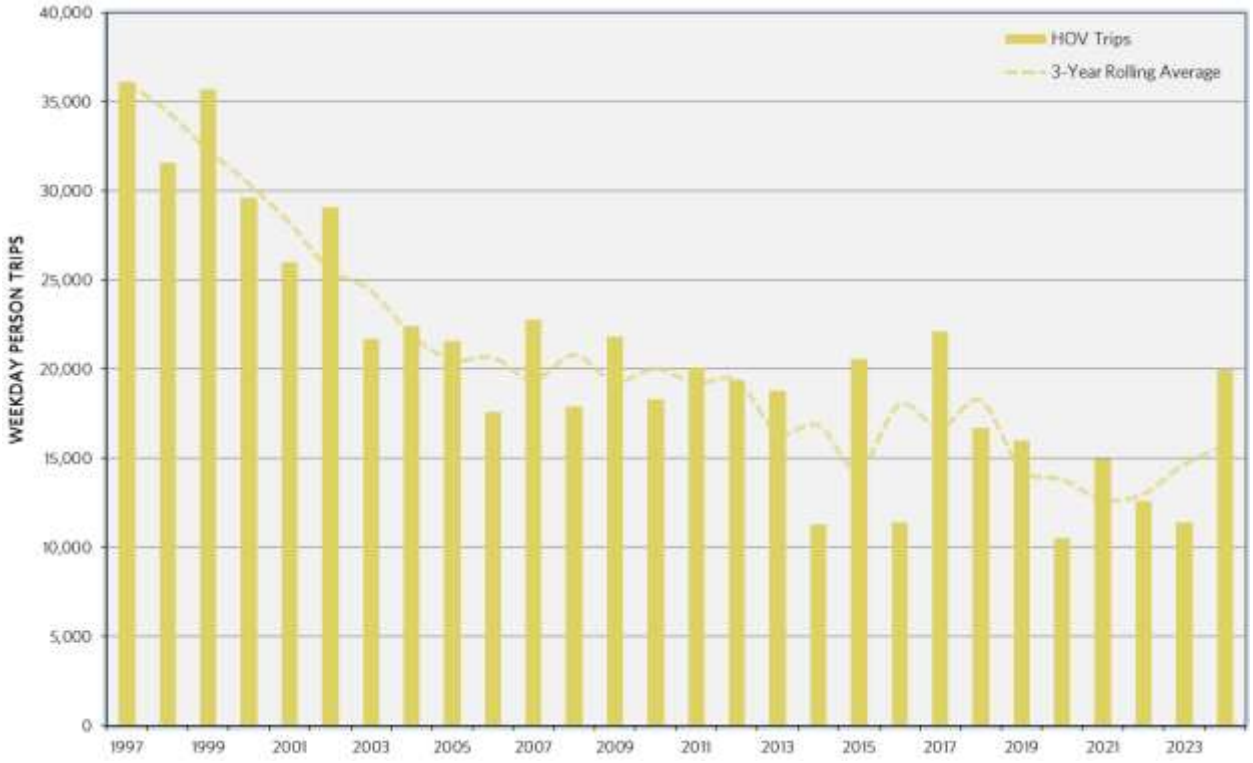

Figure 3.6: Average Weekday HOV Trips to / from UBC

The 2022 survey results found that nearly 80% of people that drive also park on campus, while 7% park off campus then bike, walk or roll and 6% park off campus then take transit. When asked if increased parking fees would help drivers choose alternative modes, the answer was 'not at all likely' indicating that the cost of parking is not currently impacting the travel mode choice of these commuters.

Figure 3.7 shows the change in daily automobile traffic volumes from 1997 to 2024. In fall 2024, daily automobile traffic was 58,400 vehicles per day, which is a 6% decrease from 1997. From 1997 to 2015, daily traffic to and from UBC decreased, but from 2016 onwards the number of automobile trips has generally increased, which is likely attributed to population growth overall (both in neighbourhoods and academic growth). In the last three years, the number of vehicles travelling to and from UBC has remained relatively consistent with only slight decreases year over year. Although some of the people living within neighbourhoods work or study at UBC, other members of the household may not, resulting in more trips off campus in the morning and to campus in the evening. As previously noted, in 2021 a new methodology was used to determine average daily population on campus from 2000 onwards, which is why there appears to be drop in the campus population line in 2000 in *Figure 3.7*.

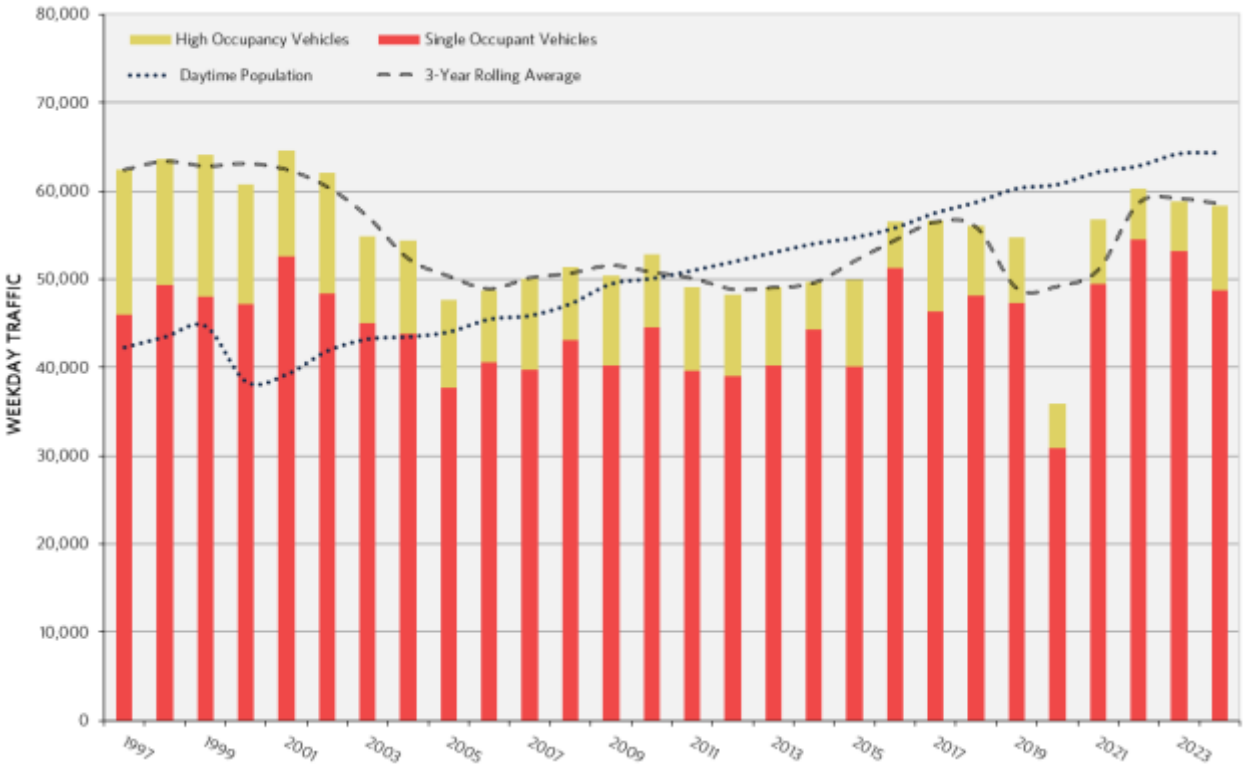

Figure 3.7: Average Weekday Automobile Traffic to / from UBC, 1997 – 2024

Although UBC has experienced more vehicle traffic over the last few years compared to 2019, the demand for parking has not experienced the same growth, which supports the theory that there are more pick-up and drop-off trips occurring on campus (through ride-hailing services and personally arranged trips).

UBC manages the additional vehicles on campus from ride-hailing by allocating curb space for pick-ups and drop-offs within the central academic campus. This is intended to prevent unwanted stopping

activity in busy areas and can make it easier for people less familiar with the campus to identify a pick up or drop off location. There is also a fee charged to ride-hailing companies to operate on campus, which are used to deliver programs and infrastructure that encourage sustainable transportation.

TARGET 2: Reduce single occupant vehicle trips to and from UBC by 20% from 1997 levels and reduce single occupancy vehicle trips per person to and from UBC by 30% from 1997 levels.

× In 2024, there were 48,700 SOV vehicle trips, which is a 6% increase from 1997 values.

✓ In 2024, there were 0.76 SOV trips per person, which is a 30% reduction from 1997 values.

TARGET 3: Maintain daily private automobile traffic at or less than 1997 levels. Private automobiles include single occupant vehicles and carpools / vanpools, but do not include buses, motorcycles and trucks.

✓ In 2024, there were 58,840 private vehicles per day, which is a 6% reduction from 1997 values.

UBC will continue to monitor progress against our targets alongside ongoing efforts to bring a rapid transit connection to UBC; and support initiatives that shift behaviour away personal vehicles onto buses, carpools, and more active modes.

As a result of the significant uptake of car sharing in Vancouver, UBC started tracking the number of car share trips to and from campus. Car share vehicles were counted at screenline locations over an eight-hour period, which is presented below in *Table 3.8*. UBC provides around 160 dedicated parking stalls to Modo and Evo carshare in addition to overflow parking on the roof level of parkades. In 2020, Car2Go stopped operating in Vancouver, leaving Evo as the only one-way car share provider for the city.

Table 3.8: Summary Car Share Trips to and from UBC

Car Share Vehicle Trips	Fall 2017	Fall 2018	Fall 2019	Fall 2020	Fall 2021	Fall 2022	Fall 2023	Fall 2024
1-Person Trips	408	503	497	163	408	399	563	393
2-Person Trips	73	41	101	45	82	63	93	126
3+ Person Trips	39	9	13	18	11	22	3	56
Totals	520	553	611	226	501	484	659	575

There was a significant increase in car share trips to and from UBC from 2015 to 2019, but there was a drop in 2020 as a result of the Pandemic and the departure of Car2Go, which have since rebounded. A new observation in 2024 was an increase in the number of trips with 2 or more people in the vehicle.

Results from the 2022 Transportation Survey of the campus community identified the top three reasons respondents use car share vehicles are to run errands / shopping; when the weather is poor; and for visiting friends and family.

More research is required to determine the overall benefits of car share at UBC given a majority of the trips are still a single occupancy vehicle trip and they are likely replacing transit trips.

3.4 Heavy Trucks

Construction activity at UBC and the day-to-day operation of the university generate truck traffic. The City of Vancouver, through which all trucks must travel to reach UBC, manages heavy truck traffic with a number of bylaws and regional regulations. For the purposes of monitoring travel patterns to and from UBC, heavy trucks are defined as vehicles with three or more axles. This simpler definition makes it easier to monitor heavy truck traffic, as it is only necessary to count the number of axles on a truck to determine whether it is a "heavy truck". In addition, the purpose of monitoring is to help us better understand truck volume and noise rather than vehicle weights.

Counts of heavy truck traffic are undertaken on a quarterly basis, shown in *Table 3.9, while Figure 3.8* compares the total construction and non-construction related truck traffic at UBC over the last three years.

Table 3.9: Average Weekday Heavy Truck Trips to / from UBC, 2024

Route	Type of Truck		Totals by Route
	Construction	Non-Construction	
Chancellor Boulevard	15	12	27 (8%)
University Boulevard	16	22	37 (11%)
W 16th Avenue	27	20	47 (14%)
SW Marine Drive	152	86	238 (68%)
Totals	209 (60%)	140 (40%)	349 (100%)

As shown in the table, on average there are 349 heavy truck trips per day to and from UBC, which is just above what was counted in 2023 (334). Of the 349 trips, 60% of them are construction related trips, down from 71% in 2023. Of the four routes to and from UBC, SW Marine Drive carries 68% of the truck traffic. The biggest difference from 2023 is the decrease in construction related truck traffic and the increase in non-construction related truck traffic. As the university continues to grow and more commercial outlets are added on campus, it makes sense that the number of non-construction truck trips (i.e. deliveries) will increase.

Truck traffic is also variable depending on what stage of construction projects are in at the time of data collection and in 2024 there were not many active project sites in the excavation stage when counts were being conducted.

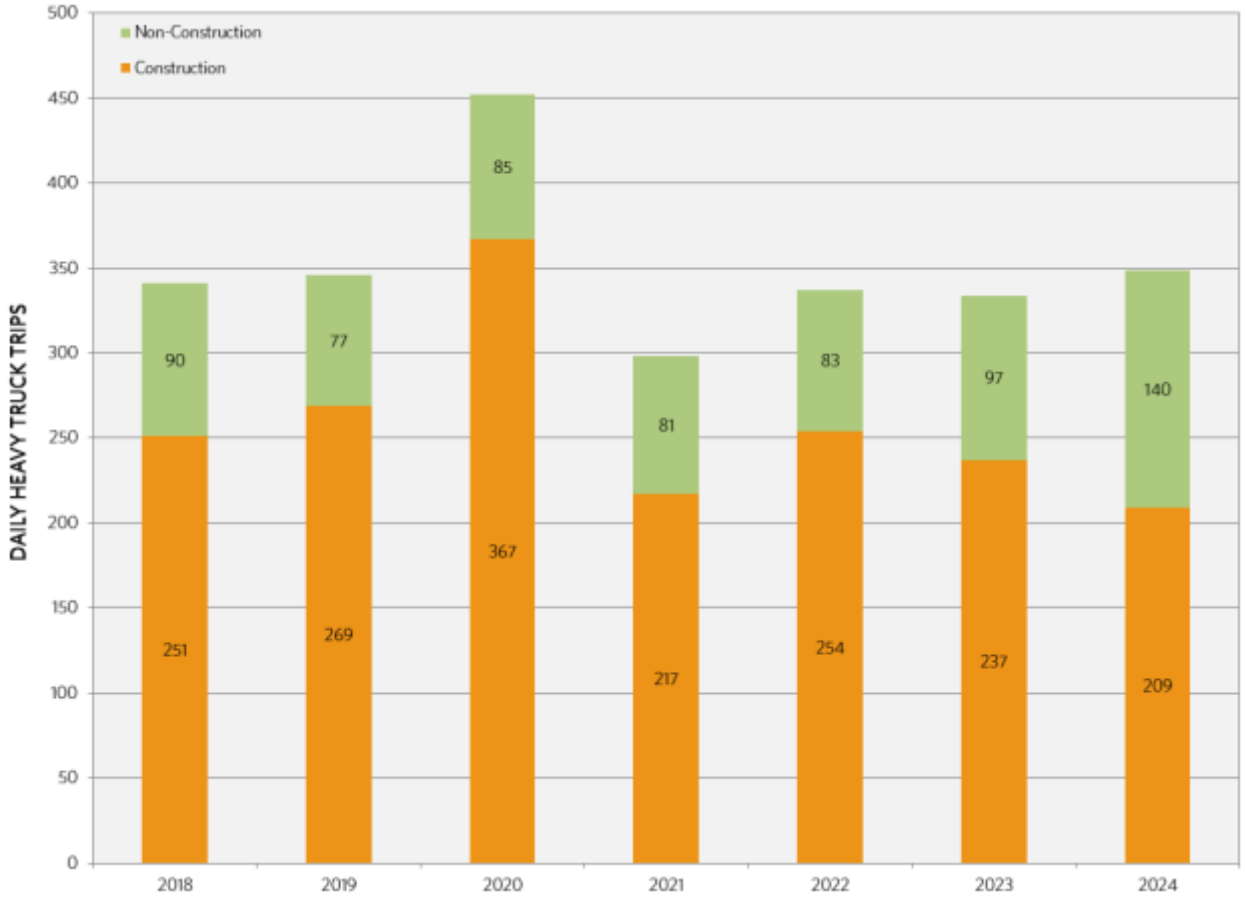

Figure 3.8: Heavy Truck Trips to / from UBC

4 Traffic Conditions At UBC

This section of the *Transportation Status Report* summarizes transportation conditions on campus, particularly traffic volumes and speeds at key locations throughout the campus. Starting in 2023, traffic speed data was not collected due to changes in equipment availability with the consultant used for data collection and an industry change in the preferred methodology of speed data collection. UBC will explore other ways to collect speed data and possibly replace existing practice with site specific speed monitoring. In the meantime, traffic speed data from previous years is copied below.

4.1 Traffic Speeds

Traffic speeds were recorded over one week on campus using pneumatic tubes. The locations are identified in *Figure 1.1*.

The 85th percentile speed is used for the purposes of representing travel speeds and is the speed below which 85% of the traffic travels. The average 85th percentile speed data from 2019 to 2022 is summarized in *Tables 4.1 and 4.2* for eastbound / northbound traffic and westbound / southbound traffic, respectively. Data highlighted in red represents locations where collected speed data is >5km/h above the posted speed limit in the current monitoring year. Note, data is not collected at every location annually, which is why there are empty boxes in the following tables.

Table 4.1: Average 85th Percentile Traffic Speeds (km/h) Eastbound / Northbound, 2018 - 2022

Location	Speed Limit (km/h)	Eastbound / Northbound			
		Fall 2019	Fall 2020	Fall 2021	Fall 2022
Wesbrook Mall s/o Gage	50	50	-	44	54
Wesbrook Mall s/o University	50	45	51	50	54
Thunderbird w/o Wesbrook	30	37	-	46	-
West Mall s/o University Blvd	30	33	-	33	30
East Mall s/o Thunderbird	30	48	-	48	47
Wesbrook Mall n/of 16th Ave	50	53	-	51	-
Wesbrook Mall s/o 16th Ave	50	33	40	35	30
16th Ave w/o East Mall	60	68	-	67	-
16th Ave w/o Wesbrook Mall	50	56	67	64	70
16th Ave e/o Wesbrook Mall	50	67	63	84	70
Chancellor e/o Western Pkwy	50	54	58	58	56
University e/o Toronto Rd	50	61	63	62	59

Table 4.2: Average 85th Percentile Traffic Speeds (km/h) Westbound / Southbound, 2018 - 2022

Location	Speed Limit (km/h)	Westbound / Southbound			
		Fall 2019	Fall 2020	Fall 2021	Fall 2022
Wesbrook Mall s/o Gage	50	44	-	38	56
Wesbrook Mall s/o University	50	49	51	53	51
Thunderbird w/o Wesbrook	30	47	-	43	-
West Mall s/o University Blvd	30	30	-	34	31
East Mall s/o Thunderbird	30	57	-	48	47
Wesbrook Mall n/of 16th Ave	50	54	-	57	-
Wesbrook Mall s/o 16th Ave.	50	31	43	30	30
16th Ave w/o East Mall	60	68	-	79	-
16th Ave w/o Wesbrook Mall	50	61	58	58	68
16th Ave e/o Wesbrook Mall	50	60	64	67	65
Chancellor e/o Western Pkwy	50	58	62	57	56
University e/o Toronto Rd	50	60	57	63	62

In 2024, a new method of collecting speed data was tested and used at the screenline locations approaching campus, which are presented in *Table 4.3*.

Table 4.3: 85th Percentile Traffic Speeds (km/h) at Screenline Locations

Location	Speed Limit (km/h)	2024	
		Eastbound/Northbound	Westbound/Southbound
NW Marine Drive n/o Chancellor Blvd	50	52	50
Chancellor Blvd e/o Western Parkway	50	56	60
SW Marine Drive s/o Wesbrook Mall	80	87	89
University Boulevard e/o Toronto Road	50	57	60
16th Avenue e/o Hampton Place	50	72	70

Based on the speed data collected, nearly all routes to and from campus experience travel speeds 5km/h or higher of the speed limit. Of particular concern are the speeds on 16th Avenue in proximity to a pedestrian crossing at Hampton Place where elementary school children cross to get to and from school daily. These results will be shared with Ministry staff.

4.2 Traffic Volumes

Peak hour traffic volumes collected over one day at key intersections on campus are illustrated in *Figures 4.1* and *4.2*. The turning volumes are not intended to represent average daily traffic volumes or conditions, but are intended to provide a general overview of traffic patterns to / from and on campus during the AM and PM peak hours.

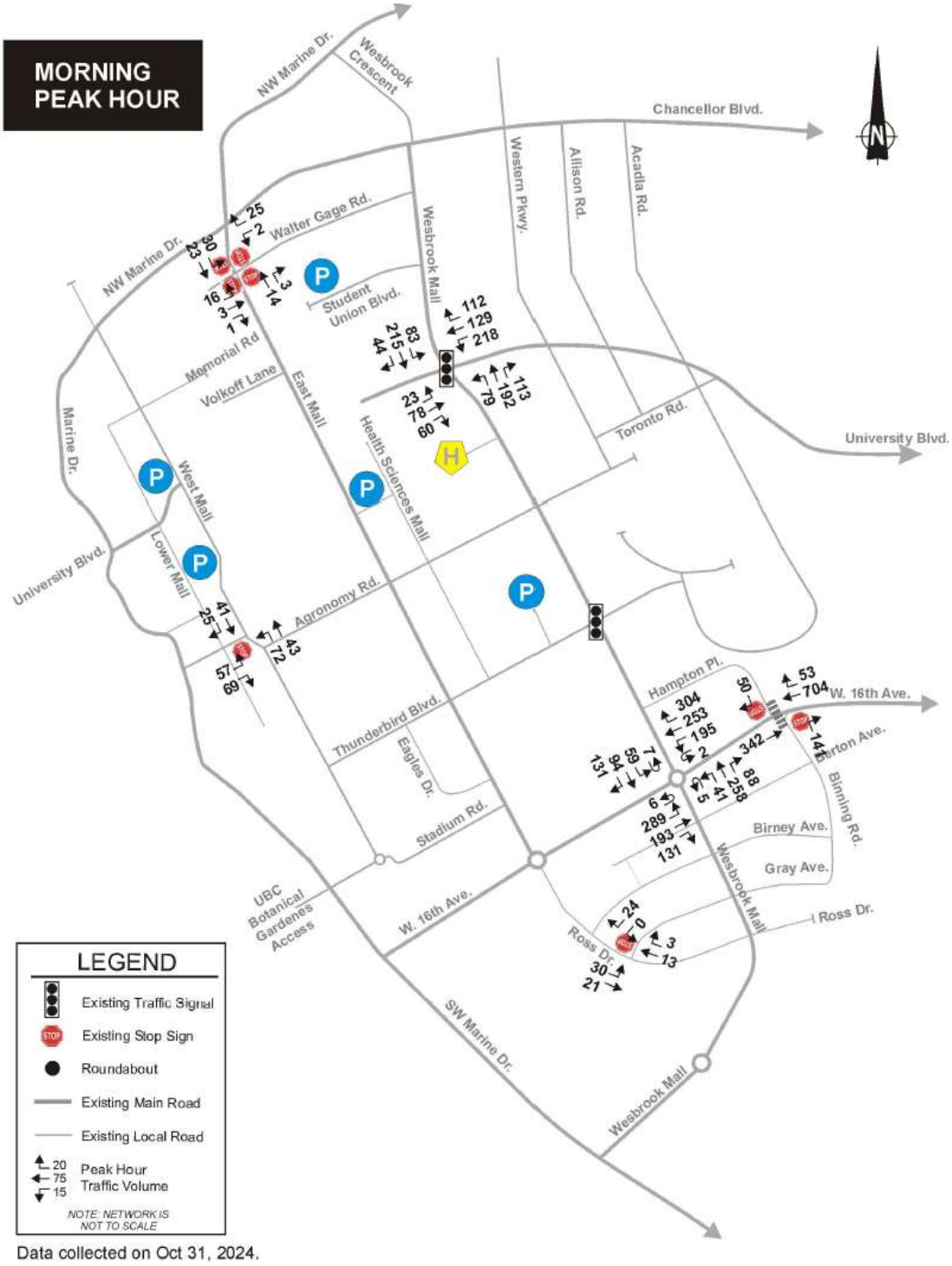

Figure 4.1: Morning Peak Hour Traffic Volumes at UBC

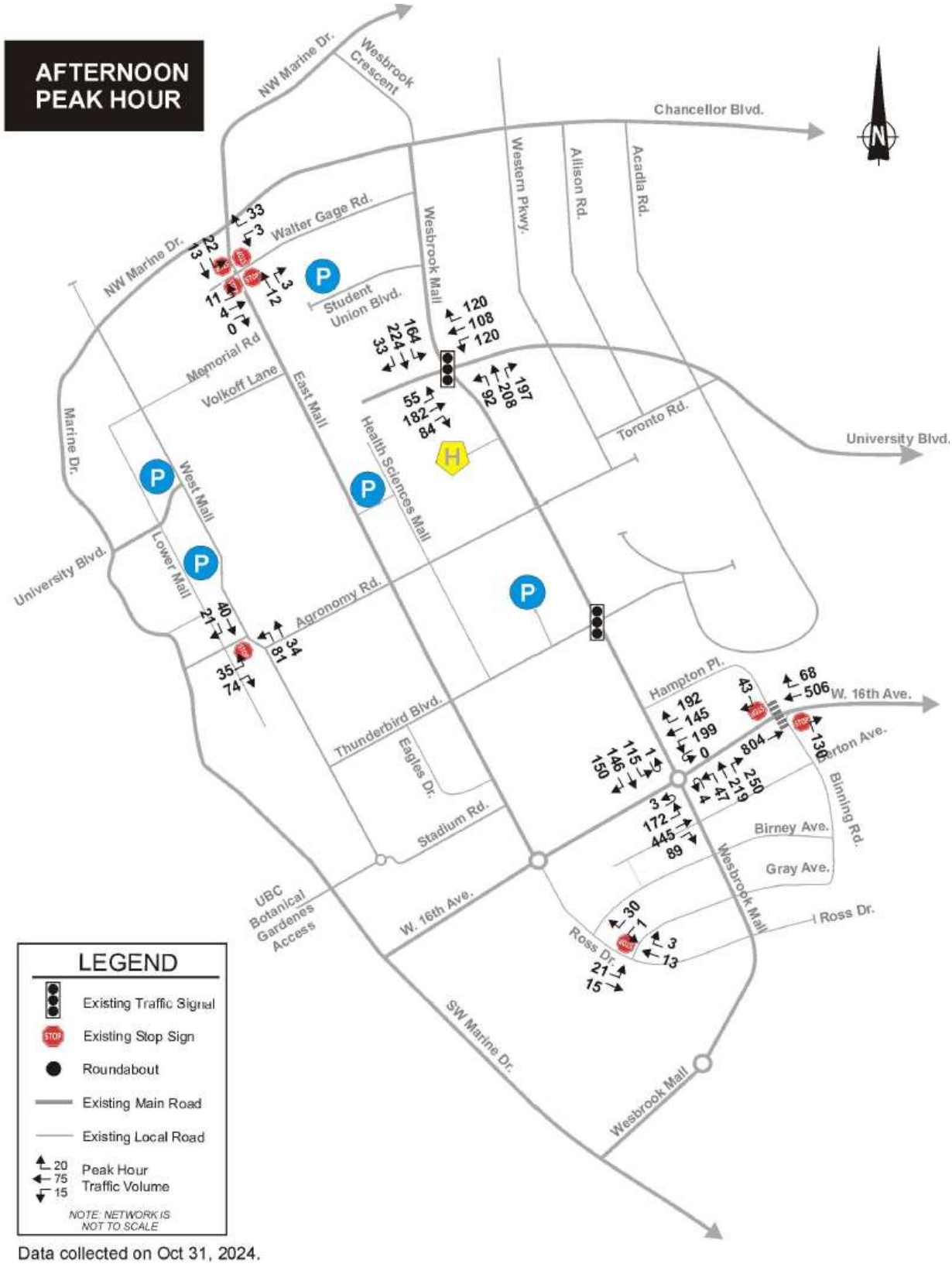

Figure 4.2: Afternoon / Evening Peak Hour Traffic Volumes at UBC

Traffic modelling was carried out during the Campus Vision 2050 process to better understand anticipated impacts of future growth. That analysis identified UBC's local streets as well as roads to and from campus will be able to handle the anticipated growth in traffic. This analysis has been further detailed through the Campus Plan and Wesbrook Neighbourhood Plan updates, which confirmed that intersections will be able to handle the anticipated growth in traffic, with some infrastructure improvements as identified in those plans.

4.3 Travel Patterns

A licence plate survey was conducted to determine origins and destinations of traffic on Wesbrook Mall between 16th Avenue and SW Marine Drive. Data was collected over a 12-hour period from 7am to 7pm over one day, however, due to data collection errors in 2022 only the 4pm to 7pm period is analyzed below.

The results of the licence plate survey are summarized in *Table 4.4* and in *Figure 4.3*.

Table 4.4: Summary of Travel Patterns on Wesbrook Mall in Wesbrook Place, 2022 vs 2024

Destination of Trip	Northbound		Southbound	
	# of Trips 2022 (2024)	% Distribution 2022 (2024)	# of Trips 2022 (2024)	% Distribution 2022 (2024)
Through	107 (191)	22% (39%)	111 (135)	11% (19%)
Wesbrook Place	353 (114)	74% (23%)	908 (538)	89% (75%)
South Research Campus	17 (185)	4% (38%)	1 (46)	0.1% (6%)

**Counts do not include buses.*

Key observations regarding travel patterns on Wesbrook Mall in South Campus are as follows:

- 39% of all vehicles turning onto Wesbrook Mall from SW Marine Drive travel through Wesbrook Place to 16th Avenue, this is up from 22% in 2022.
- 19% of all vehicles southbound on Wesbrook Mall from 16th Avenue continue all the way south to SW Marine Drive. This is up from 11% in 2022.
- A majority (82%) of the traffic destined to Wesbrook Place arrives from the north.
- A majority (80%) of the traffic destined to South Research Campus arrives from the south.

This comparison shows some large differences in 2024 compared to 2022. However, there were still lasting impacts from the pandemic in 2022 that could account for the differences.

Detailed modelling was carried out for the Wesbrook Place neighbourhood during the Neighbourhood Plan update process, while traffic volumes are anticipated to increase in the neighbourhood as development continues, the existing road network with some infrastructure improvements is anticipated to accommodate the increase in traffic. As traffic volumes increase in the neighbourhood, the number of through traffic trips are anticipated to decrease.

Figure 4.3: Travel Patterns on Wesbrook Mall between 16th Avenue and SW Marine Drive

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