



# DALHOUSIE UNIVERSITY COMMUTER STUDY 2023-2024

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# Contents

- 1. Introduction .....1**
- 1.1. About The University..... 1
- 1.2. About the Commuter Survey..... 2
- 2. Respondent Information .....4**
- 2.1. Group, classification, and campus..... 4
- 2.2. Residence locations ..... 5
- 2.3. Gender ..... 8
- 2.4. Age ..... 9
- 2.5. Household income..... 10
- 2.6. Commuter Survey Awareness ..... 11
- 3. Commuting Modes.....12**
- 3.1. Primary mode..... 12
- 3.2. Secondary Mode ..... 13
- 3.3. Commuting Habits ..... 15
- 3.4. Automobile Parking Preferences..... 15
- 3.5. Distance from campus..... 16
- 3.6. Commute duration..... 18
- 3.7. Arrival and departure time..... 19
- 4. Intercampus Travel .....20**
- 4.1. Travel between Halifax campuses ..... 20
- 4.2. Travel between Halifax and Truro campuses ..... 22
- 5. Comparison by Campus .....24**
- 5.1. Primary mode..... 24
- 5.2. Secondary mode ..... 25
- 5.3. Commute distance..... 27
- 5.4. Commute duration..... 27
- 6. Comparison by Year .....28**
- 6.1. Commute mode..... 28
- 6.2. Commute distance..... 30
- 7. Behaviour and Travel Patterns .....31**
- 7.1. Changes in Travel Behaviour – COVID-19 and Remote Work ..... 31
- 7.2. Teleworking Usage..... 31
- 7.3. Monthly Activities ..... 32
- 7.4. Carpooling Proposal ..... 39

8.	HaliTRAC Survey Comparison.....	39
9.	Sustainability .....	42
9.1.	Sustainability on Campus.....	42
9.2.	Sustainable travel barriers.....	42
9.3.	Sustainability Importance .....	43
9.4.	Sustainability Communication and Articulation.....	44
9.5.	Crowdsourcing Ideas .....	45
10.	Conclusion .....	47
	Appendix. Summary of 2023 Survey Data .....	A
A.1.	Survey Questions .....	A
A.2.	Results .....	C
A.3.	Data Cleaning, Errors, and Extent .....	M
	References.....	N

## List of Tables

Table 1-1.	Survey responses by academic year.....	3
Table 2-1.	Response distribution percentage by gender and group.....	9
Table 2-2.	Age distribution percentage by group.....	10
Table 2-3.	Annual household income percentage by group .....	11
Table 3--1.	Primary commute mode distribution percentage by group .....	13
Table 3-2.	Secondary commute mode distribution percentage by group .....	14
Table 4-1.	Travel frequency between Halifax campuses by group .....	21
Table 4-2.	Primary travel mode between Halifax campuses by group .....	22
Table 4-3.	Travel frequency between Halifax and Truro campuses by group.....	23
Table 7-1.	Hours teleworking per day by group .....	32

## List of Figures

Figure 1-1.	Dalhousie University campus locations in Halifax and Truro.....	2
Figure 2-1.	Respondent groups (n = 2491 responses, 244 non-responses) .....	4
Figure 2-2.	Student, Staff, and Faculty classification (n = 2485 responses, 250 non-responses) .....	4
Figure 2-3.	Primary campus distribution (n = 2490 responses, 245 non-responses) .....	5
Figure 2-4.	Respondent location based on campus.....	6
Figure 2-5.	Respondent Density in Halifax.....	7
Figure 2-6.	Respondent Density in Truro .....	8
Figure 2-7.	Gender distribution (n = 2202 responses, 533 non-responses).....	9

Figure 2-8. Age distribution (n = 2241 responses, 494 non-responses) .....	10
Figure 2-9. Annual household income distribution (n = 2088 responses, 647 non-responses) .....	11
Figure 2-10. How respondents heard about the Dalhousie Commuter Survey (n = 2088 responses, 647 non-responses) .....	12
Figure 3-1. Primary commute mode (n = 2303 responses, 432 non-responses) .....	13
Figure 3-2. Secondary commute mode (n = 2229 responses, 506 non-responses) .....	14
Figure 3-3. Commuting habits after COVID-19 pandemic (n = 2482 responses, 253 non-responses) ...	15
Figure 3-4. Parking preferences of respondents (n = 2071 responses [1162 not applicable], 664 non-responses) .....	16
Figure 3-5. Distribution of commute distance for all valid respondents .....	17
Figure 3-6. Average commute distance by respondent group .....	17
Figure 3-7. Distribution of commute duration for primary mode .....	18
Figure 3-8. Average commute duration by group .....	19
Figure 3-9. Distribution of arrival times (n = 2219 responses, 516 non-responses) .....	19
Figure 3-10. Distribution of departure times (n = 2211 responses, 524 non-responses) .....	20
Figure 4-1. Travel frequency among Halifax campuses (n = 2276 responses, 459 non-responses) .....	21
Figure 4-2. Primary travel mode between Halifax campuses (n = 1575 responses, 1160 non-responses) .....	22
Figure 4-3. Travel frequency between Halifax and Truro campuses (n = 2256 responses, 479 non-responses) .....	23
Figure 4-4. Primary travel mode between Halifax and Truro campuses (n = 2271 responses (1859 not applicable), 464 non-responses) .....	24
Figure 5-1. Primary commute mode by campus .....	25
Figure 5-2. Secondary commute mode by campus .....	26
Figure 5-3. Average commute distance by campus .....	27
Figure 5-4. Average commute time by campus .....	28
Figure 6-1. Primary commute mode by year .....	29
Figure 6-2. Student primary commute mode by year .....	29
Figure 6-3. Staff & faculty primary commute mode by year .....	30
Figure 6-4. Average commute distance of students, faculty, and staff by year .....	30
Figure 7-1. # of hours teleworking per day (n = 2306 responses (126 not valid), 429 non-responses) ..	32
Figure 7-2. Monthly Levels Travelling to Work .....	33
Figure 7-3. Monthly Levels Working from Home .....	34
Figure 7-4. Monthly Levels Shopping In-person .....	35
Figure 7-5. Monthly Levels shopping online for pickup .....	35
Figure 7-6. Monthly Levels shopping online for delivery .....	36
Figure 7-7. Monthly Levels Eating at Restaurant .....	37
Figure 7-8. Monthly Levels Ordering Food for Delivery .....	37
Figure 7-9. Monthly Levels Receiving Remote Healthcare Services .....	38

Figure 7-10. Monthly Levels Visiting Places In-Person for other Activities (recreational, religious etc.) 38

Figure 7-11. Responses to Utilizing a Hypothetical Dalhousie-run Carpooling Program ..... 39

Figure 8-1. Primary Transportation Mode Choices: 2023-24 Commuter Survey vs. 2023 HaliTRAC Survey [15] ..... 40

Figure 8-2. # of Automobiles per household: 2023-24 Commuter Survey vs. 2023 HaliTRAC Survey [15] ..... 41

Figure 8-3. # of Bicycles per household: 2023-24 Commuter Survey vs. 2023 HaliTRAC Survey [15] .... 41

Figure 9-1. Importance of Sustainability and Environmental Responsibility being a Campus Wide Goal (n = 2177 responses, 558 non-responses) ..... 44

Figure 9-2. Respondents' perspective on if they receive regular communication about sustainability issues and campus initiatives (n = 2230 responses, 505 non-responses) ..... 45

Figure 9-3. Respondents view on Dalhousie’s Articulation of its Sustainability Targets and Initiatives (n = 2228 responses, 507 non-responses) ..... 45

Figure 9-4. Respondents' suggestions for engaging campus and community members on sustainability ..... 46

# 1. Introduction

The Dalhousie Transportation and Sustainability Survey, conducted annually by the Dalhousie Office of Sustainability, is a data collection initiative introduced in 2009. The survey is taken by those who frequent Dalhousie, including students, staff, and faculty members. The objective of this report is to examine the Dalhousie community's travel habits and behaviours, as well as their perspectives on sustainability.

## 1.1. About The University

Dalhousie University is one of the oldest Canadian post-secondary institutions, operating since 1818. The university is located in the Maritime region of Eastern Canada. Dalhousie University is a research-intensive university that supports various programs through a number of faculties and schools [1]. Presently, Dalhousie has four primary campuses: Studley, Carleton, and Sexton, located on the Halifax peninsula, and the Agricultural campus, situated in the Town of Truro (Figure 1-1) [2]. Dalhousie University is located in Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq People and pays respect to the Indigenous knowledge held by the Mi'kmaq People, and to the wisdom of their Elders past and present [3].

Dalhousie University officially updated and released its Strategic Plan: Third Century Promise in 2021. Its primary focus is to empower Dalhousie members and surrounding communities while increasing the university's global reputation [4]. The Strategic Plan contains themes regarding sustainability and environmental responsibility which commit to finding evidence-based solutions to the ongoing climate crisis [4]. Findings from this year's Commuter Survey can be used to ensure the university continues towards its sustainability and resource-efficiency related goals.

The Annual Transportation and Sustainability Survey serves as a valuable platform for gathering perspectives and feedback from the Dalhousie community on various sustainability-related matters. Dalhousie University has invested nearly \$100 million towards sustainability and environmental initiatives [5]. The university has also committed to the United Nations Sustainable Development Goals (SDGs) for 2030, showing notable success in the (6) Clean Water and Sanitation, (12) Responsible Consumption, (13) Climate Action, and (14) Life Below Water categories [6]. The university has also found unique ways to incentivize sustainable transportation methods, including discounted transit passes for Dalhousie members. Students automatically receive bus passes through their auxiliary fees; however, the Employee Bus Pass Program is a recent opt-in initiative that offers employees viable access to public transportation [7]. The Dalhousie Bike Centre also

incentivizes alternative travel methods by offering a free bike borrowing program and maintenance services [8].

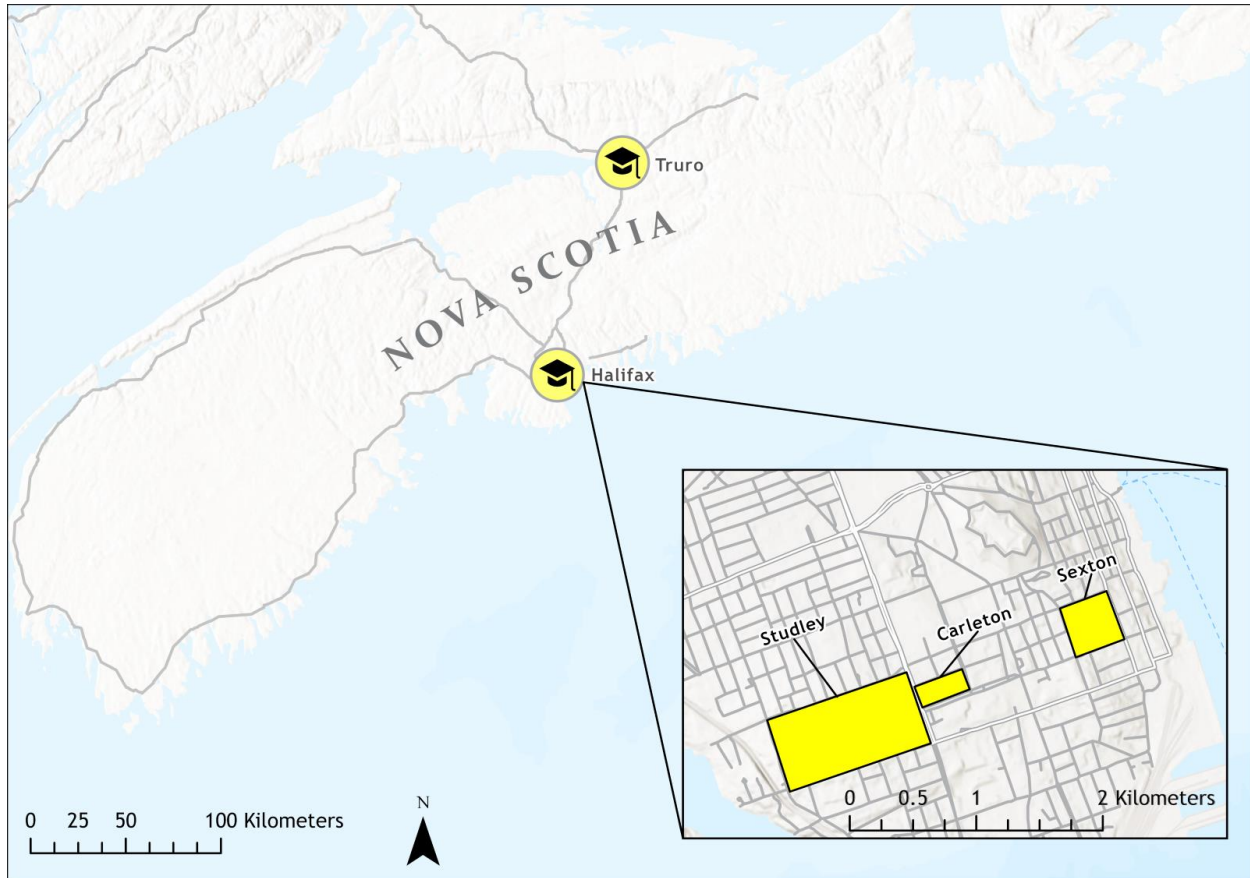


Figure 1-1. Dalhousie University campus locations in Halifax and Truro

## 1.2. About the Commuter Survey

The Annual Transportation and Sustainability Survey is facilitated by the Dalhousie Office of Sustainability [5]. The survey analyzes transportation trends, including preferred commuting modes, travel distances, mode accessibility, activity location, and duration. An in-depth analysis of the survey identifies current sustainability behaviours and actions to help monitor the progress of current sustainability initiatives and projects. Additionally, the report has the potential to support new sustainability projects based on trends within survey responses, ensuring that initiatives apply to the Dalhousie community. Survey findings have been instrumental in supporting the implementation of sustainability initiatives [5]. Supporting Dalhousie University's initiatives allows the institution to better interconnect with surrounding communities, support current projects, and innovate new programs.

Starting in 2009, the Office of Sustainability, in partnership with Dalhousie Transportation Collaboratory (DalTRAC), has conducted the Commuter Survey annually for the past 13 years (Table 1-1). The survey for the current year took place during the Winter Semester of 2023-2024, specifically between April 1 and April 19, 2024.

**Table 1-1. Survey responses by academic year**

Year	Students	Staff	Faculty	Alumni/Other	No answer	Responses	Completed
9-10	1322	1291		-	-	2613	-
10-11	315	436		-	-	751	-
11-12	329	547		-	277	1153	-
12-13	713	618	188	-	161	1680	1374
13-14	767	717	252	-	255	1991	1630
14-15	719	604	185	-	441	1949	1508
15-16	517	474	139	-	609	1739	1110
16-17	865	472	205	-	608	2150	1690
17-18	1975	668	204	41	249	3137	2700
18-19	1938	554	193	34	209	2928	2624
19-20	811	670	269	48	443	2241	1714
20-21	1987	761	221	55	364	3388	642
22-23	1382	593	198	17	150	2340	1232
23-24	1754	517	201	19	244	2735	1301

The Commuter Survey conducted for the 2023-24 academic year received the fourth highest number of responses since its inception in 2009-2010, totaling 2735 responses, 395 more than last year's report (Table 1-1). Out of the recorded responses, 1301 were completed, leaving a retention rate of 47.57%. Previous surveys had low participation rates from students compared to other members [5]. However, this survey saw a pro-rata increase in student responses and a decrease in staff responses (Table 1-1).

The university has seen expansion and increased student population in the past years [9]. Mode choices have also been changing due to the aftermath of COVID-19 and the increase in remote working. The Commuter Survey and its following results will present Dalhousie community's mode choices, commuting habits and patterns, living distances from campus, views on sustainability, and barriers preventing optimal mobility. The survey examines how mode choices change throughout the years and between demographics. Demographics can be categorized by age, group (student, faculty, staff, etc.), campus, socioeconomic status, and gender. Due to the lack of respondents in the past years and the current survey year, the group categories 'alumni' and 'other' will be discontinued in this survey's demographic analysis. Less common commuting modes such as skateboarding, scootering, and vanpooling will be placed into the 'other' category for statistics related to primary and secondary commuting modes.



## 2. Respondent Information

The Annual Transportation and Sustainability Survey prompts users to provide demographic and geographic information through a multitude of questions. Using the provided data, this section showcases spatial patterns, identifies trends, and reports on the makeup of the university's community.

### 2.1. Group, classification, and campus

The 2024 Transportation and Sustainability Survey saw a large increase in responses compared to prior years. Students had the highest response rate, with staff and faculty following (Figure 2-1). The number of student responses saw a notable increase, while responses from staff and faculty remained similar if not decreased from previous years. Only six alumni responded to the survey. Respondents in the 'other' category self-identified as postdoctoral, researchers, or students who also work as staff. Almost all respondents identified as being full-time, which is in line with current enrollment numbers at Dalhousie University (Figure 2-2) [5].

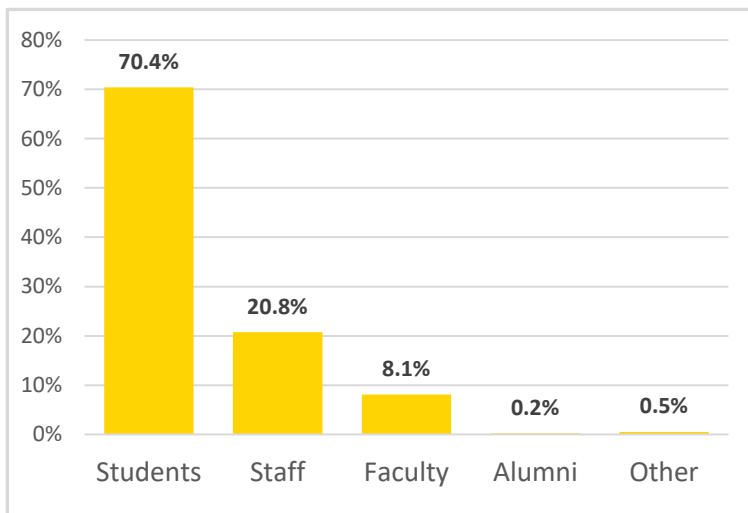


Figure 2-1. Respondent groups (n = 2491 responses, 244 non-responses)

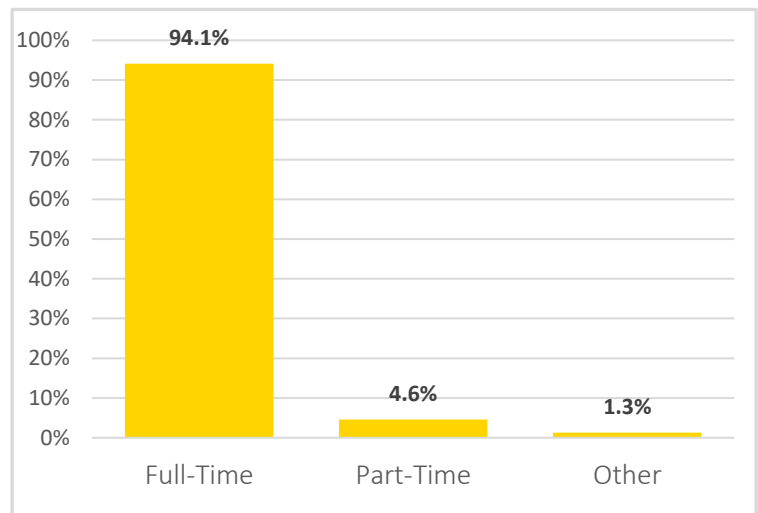


Figure 2-2. Student, Staff, and Faculty classification (n = 2485 responses, 250 non-responses)

Studley campus emerged as the primary campus for the majority of respondents, with Carleton and Sexton following in second and third respectively (Figure 2-3). The university campus location with the smallest number of responses was the Agricultural campus in Truro, which only had slightly more respondents than those who work from home (Figure 2-3). The distribution of responses across campuses has shown a relatively consistent pattern in recent surveys, although this year's survey saw a proportional increase in Studley respondents, indicating a growing level of participation associated

with that campus, and conversely a decrease for those frequenting Sexton. Furthermore, there is a decrease in respondents reporting they do not attend work or school in person, showing a slight move away from remote learning/working onset by the COVID-19 pandemic.

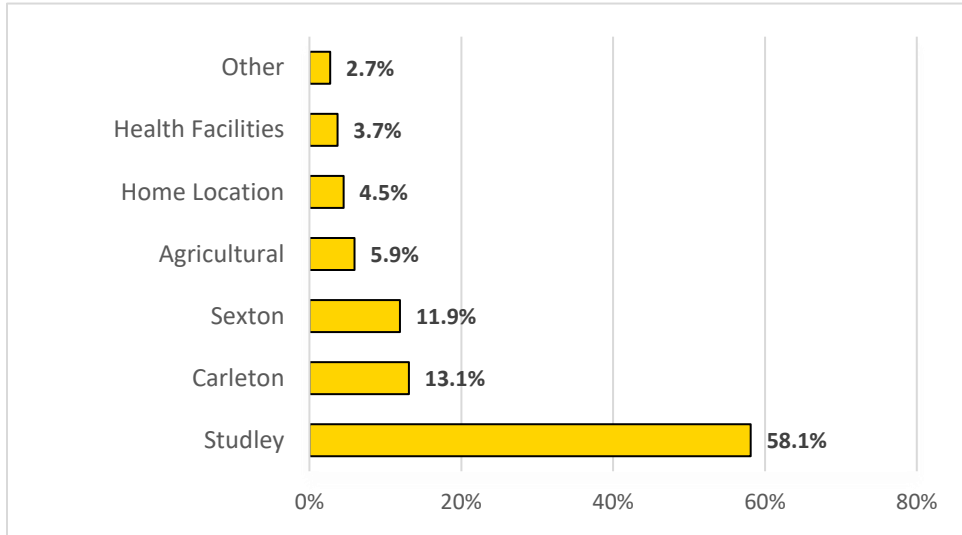


Figure 2-3. Primary campus distribution (n = 2490 responses, 245 non-responses)

## 2.2. Residence locations

The geographical locations of respondents are represented in Figure 2-4. The visualization showcases geographical data compiled with the use of respondents' postal codes and categorized based on dissemination area. Those who entered a valid Nova Scotian postal code within 150 kilometers of their respective campus are shown. Respondents further than 150 kilometers away have been considered invalid (see Appendix A.3.). Generally, individuals attending Halifax campuses tend to reside closer to Halifax, while those attending the Agricultural Campus reside in Truro. However, it is worth noting how dispersed the Agricultural Campus respondents are compared to Halifax respondents. Also, there appears to be more Truro Campus attendees living in Halifax rather than vice versa.

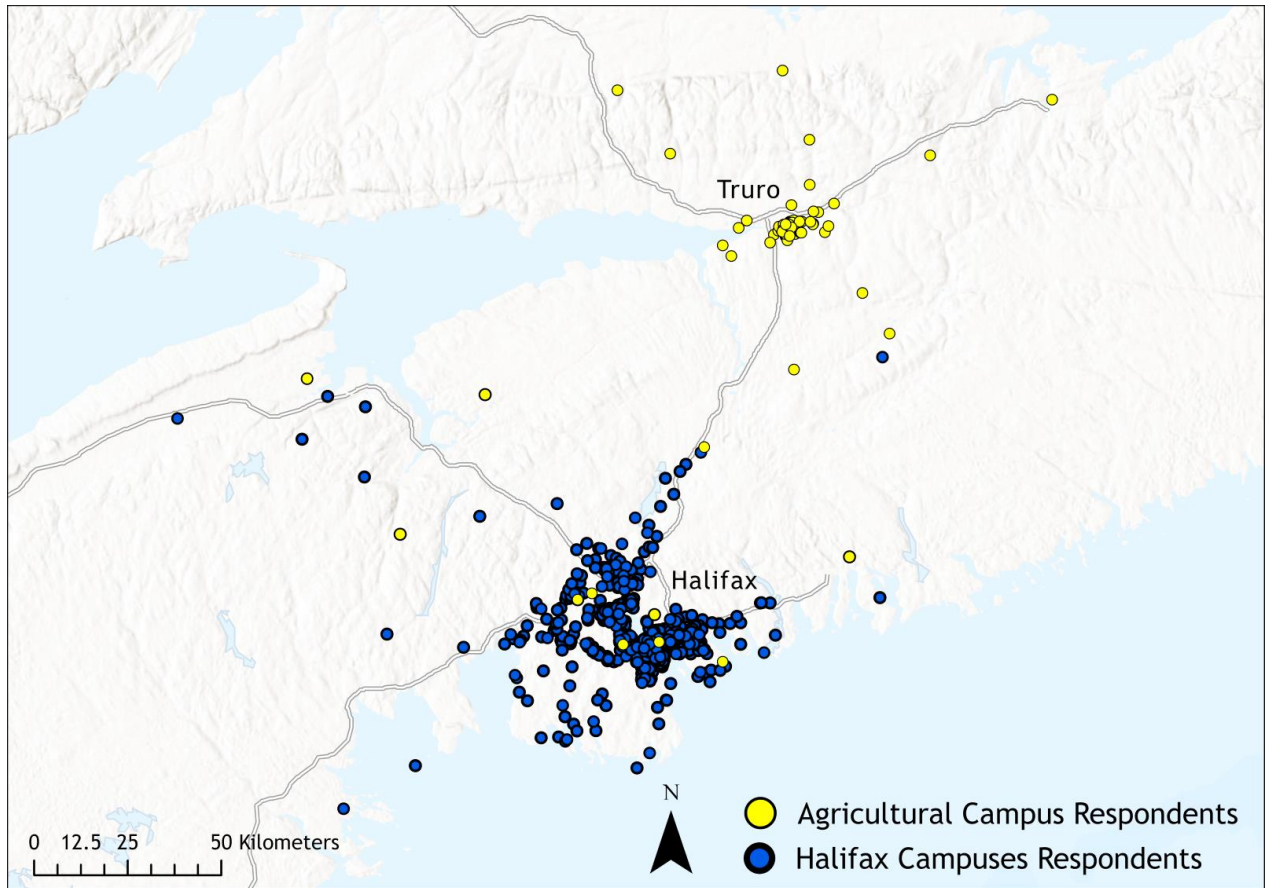


Figure 2-4. Respondent location based on campus

Figure 2-5 shows the highest density of respondents from Dalhousie University’s Halifax Campuses are in the South End and Downtown areas of the Halifax Peninsula. There are also a significant number of respondents that reside in Bedford near Larry Uteck Blvd. Comparing the 2023-2024 survey to the 2022-2023 survey, there appear to be fewer respondents who reside in the North End. However, there seems to be an increase in respondents living in South Bedford near Larry Uteck Blvd. The potential reason for this increase could be due to the number of apartment buildings that have been built and opened to tenants within the last year in this suburban community.

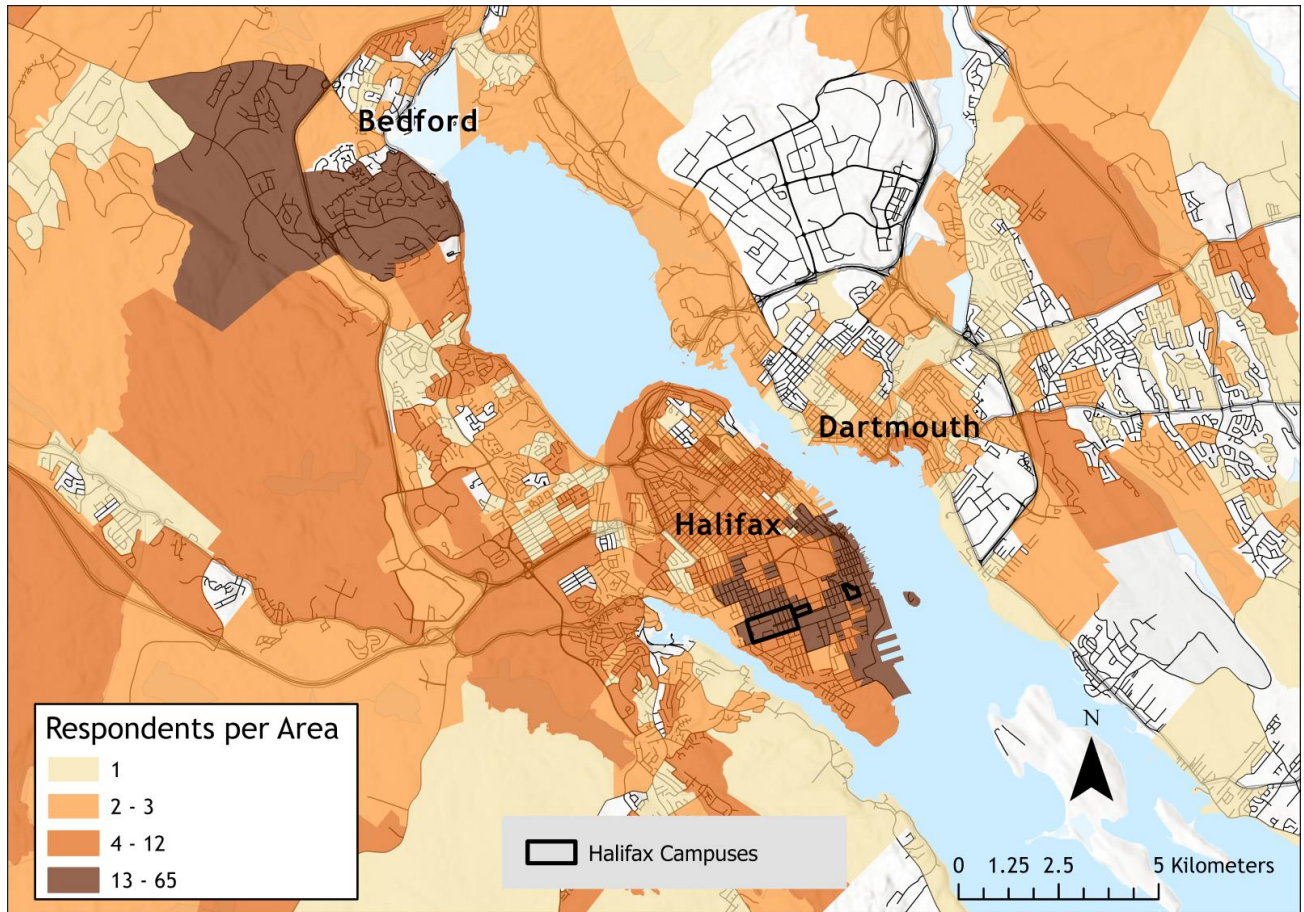


Figure 2-5. Respondent Density in Halifax

Figure 2-6 represents the concentration of survey respondents in the Truro areas. Similar to previous years, a considerable proportion of respondents resided within Bible Hill, a suburb of Truro near the Agricultural Campus. Outside of Truro, the highest respondent rates were found along Highway 104. A notable concentration of survey participants was observed in neighboring communities including Tatamagouche, Londonderry, and Beaver Brook.



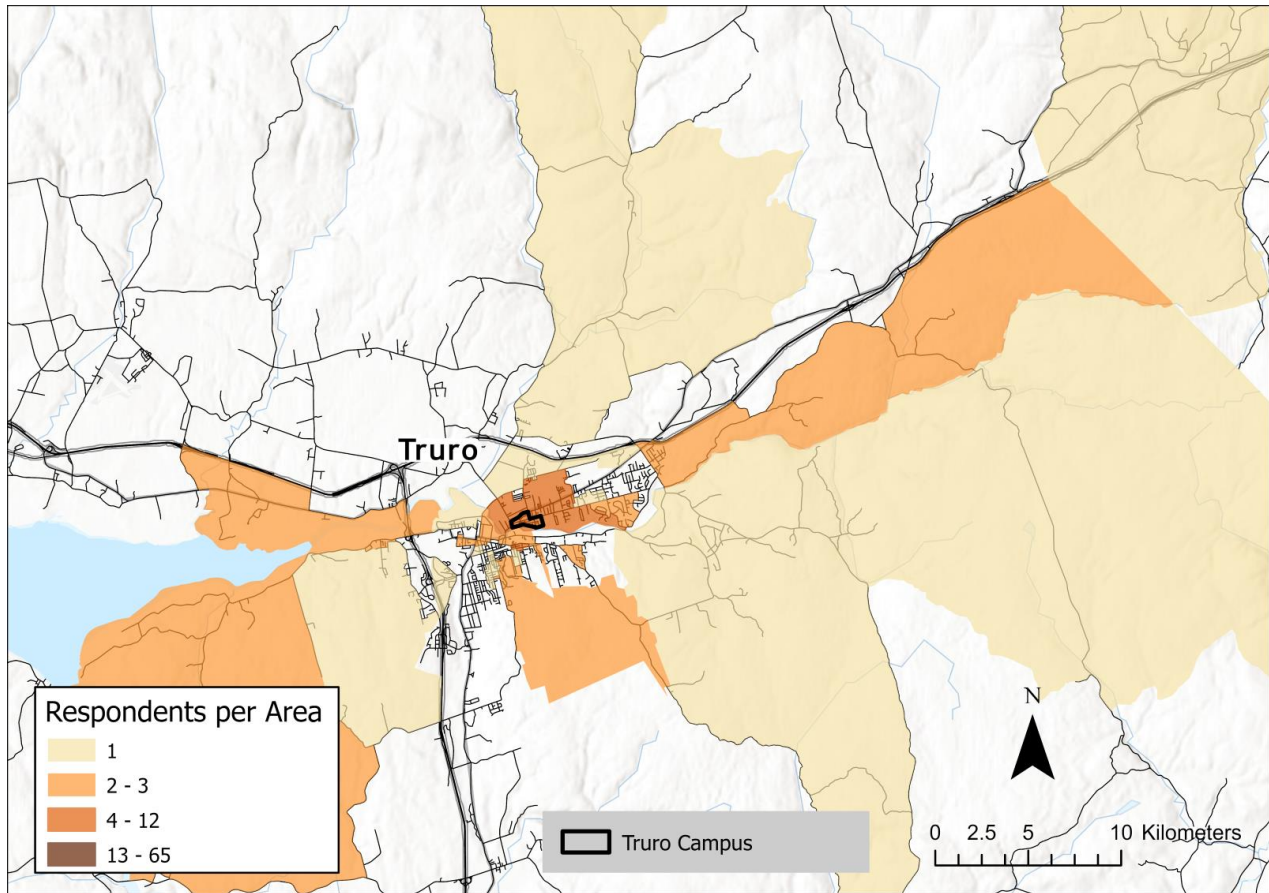


Figure 2-6. Respondent Density in Truro

### 2.3. Gender

In terms of gender, this year's Commuter Survey received similar responses to previous years. The majority of respondents (65.3%) identified as women, which is more than double the male response rate (28.4%). The gender distribution of the survey can be attributed to the demographic makeup of the Dalhousie student body, where over half of all undergraduate and graduate students in the 2021-2022 academic year were women (54.2%) [5]. Additionally, it is common for online surveys to receive more responses from women than men. This is a common phenomenon that has been consistently observed in past Commuter Survey analytics [5]. Those reporting as non-binary and another gender not listed were similar to the 2022-2023 survey. Table 2-1 indicates that the largest gender disparities occur with student (29.2% vs. 65.6%) and staff (21.4% vs. 70.0%) respondents. Among male respondents, the highest proportional representation can be found from male faculty. This allowed the faculty category to have the smallest disparity in responses concerning gender identification (40.1% vs. 52.2%).

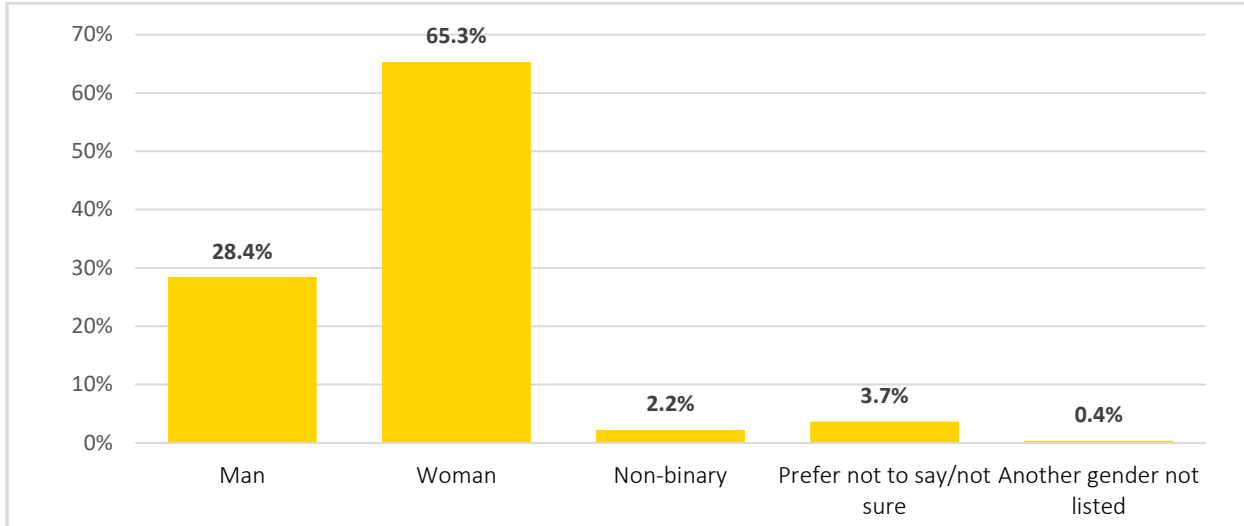


Figure 2-7. Gender distribution (n = 2202 responses, 533 non-responses)

Table 2-1. Response distribution percentage by gender and group

	Man	Woman	Prefer not to say	Non-binary	Another gender
Student	29.2%	65.6%	2.4%	2.4%	0.5%
Staff	21.4%	70.0%	5.8%	2.7%	0.2%
Faculty	40.1%	52.2%	7.7%	0.0%	0.0%

## 2.4. Age

This year's survey presented a younger age distribution compared to previous surveys. Figure 2-8 shows that the 20-24 age group had the largest response rate, followed by those aged 25-34 and those aged 15-19. The 15-19 age group has considerably more respondents than the 35-44 age group, which was the opposite in the 2022-23 survey. There also is a notable increase in responses from those aged 20-24 and a decrease in responses from the 25-34 age group. These changes can potentially be attributed to the student body having more respondents compared to previous years. The most common age range for student respondents is in the 20-24 age range (49%) (Table 2-2). Staff and faculty more commonly fell within the 35-44 age range, followed closely by 45-54. Faculty is the only group that has a notable portion of respondents over 65 (10.6%), as staff and students only have 1.4% and 0.1% respectively (Table 2-2).

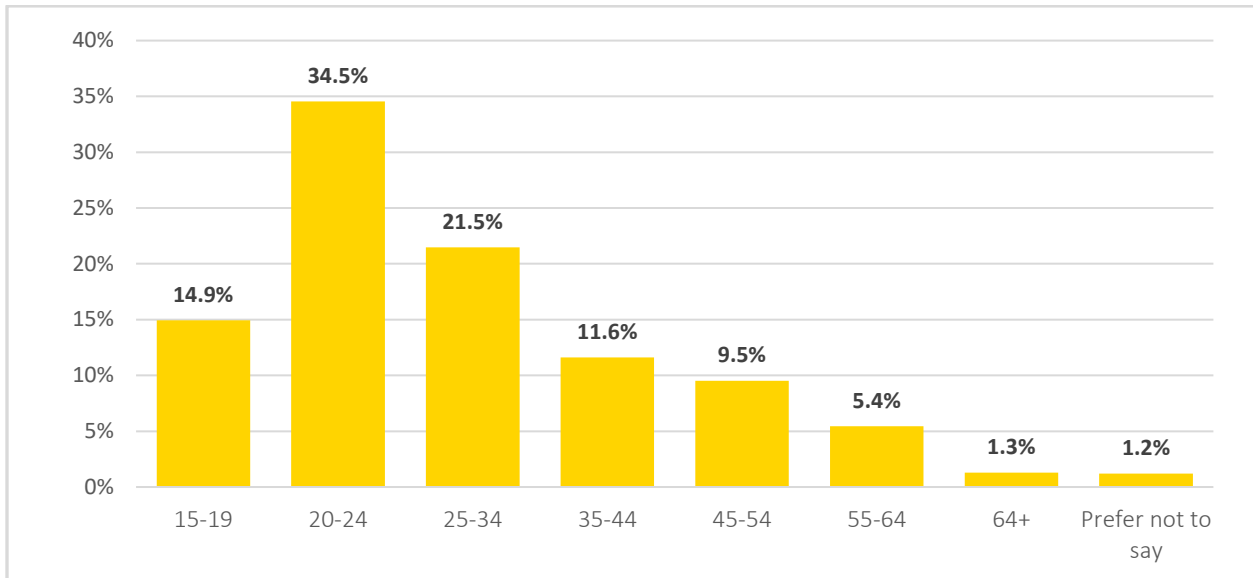


Figure 2-8. Age distribution (n = 2241 responses, 494 non-responses)

Table 2-2. Age distribution percentage by group

	15-19	20-24	25-34	35-44	45-54	55-64	65 and above	Prefer not to say
Student	21.7%	49.0%	23.6%	3.8%	0.9%	0.2%	0.1%	0.6%
Staff	0.0%	3.4%	19.0%	28.7%	26.9%	18.0%	1.4%	2.4%
Faculty	0.0%	0.0%	9.6%	28.2%	33.5%	16.0%	10.6%	2.1%

## 2.5. Household income

Among survey respondents, the most common self-reported estimated annual household income was less than \$19,999, accounting for 25.7% of participants' responses (Figure 2-9). This was the most common category in previous years (2020-2021 and 2022-2023). This can potentially be attributed to an increase in student participants compared to previous years. 37.2% of students have an annual household income of less than \$19,999, whereas only 1% of staff fall into this category (Table 2-3). No faculty members reported making under \$19,999. The most common income bracket for faculty members was over \$100,000 (66.7%). Compared to previous years, more respondents preferred not to self-report annual household income, with an increase from 18.8% to 22.4% between 2022-2023 and 2023-2024. Correlations with module choice and household income have precedents to show less automobility reliance. With more respondents reporting lower household income, there is a possibility that fewer will see a personal vehicle as an affordable mobility tool.

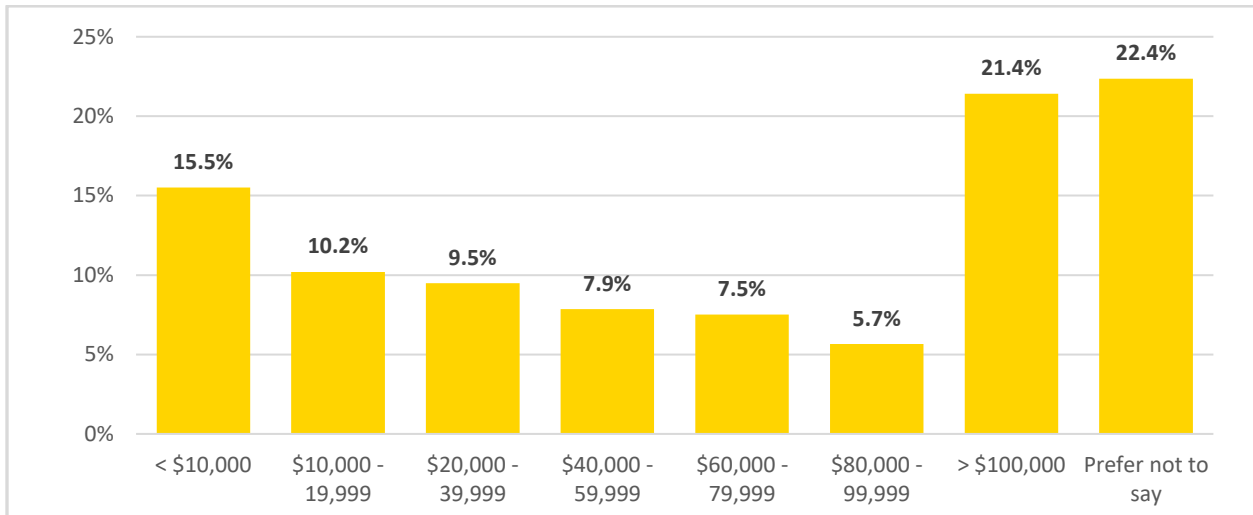


Figure 2-9. Annual household income distribution (n = 2088 responses, 647 non-responses)

Table 2-3. Annual household income percentage by group

	Less than \$10,000	\$10,000-19,999	\$20,000-39,999	\$40,000-59,999	\$60,000-79,999	\$80,000-99,999	\$100,000 or more	Prefer not to say
Student	22.5%	14.7%	12.1%	6.9%	5.4%	4.0%	10.0%	24.4%
Staff	0.4%	0.6%	3.6%	12.0%	16.1%	10.7%	39.0%	17.6%
Faculty	0.0%	0.0%	2.8%	5.0%	1.1%	5.6%	66.7%	18.9%

## 2.6. Commuter Survey Awareness

Respondents were asked how they heard about the survey. They were prompted with a multi-select function that offered the ten historically most popular ways respondents heard about the survey. Non-Dalhousie-run social media such as Twitter and Facebook were not added as an option this year due to the lack of responses for those categories in previous years.

Similar to past reports, most respondents heard about the survey through a direct email to their Dalhousie account (Figure 2-10). The second most popular method was hearing about the survey through a faculty or departmental administrator. A small number of respondents heard about the survey through ‘word of mouth’. This could point to the lack of sustainability-related conversations happening throughout the university. It is important to note that most respondents who chose the ‘other’ category heard about the survey through Instagram, showing the potential for that social media to spread awareness about sustainability programs and initiatives at the university.



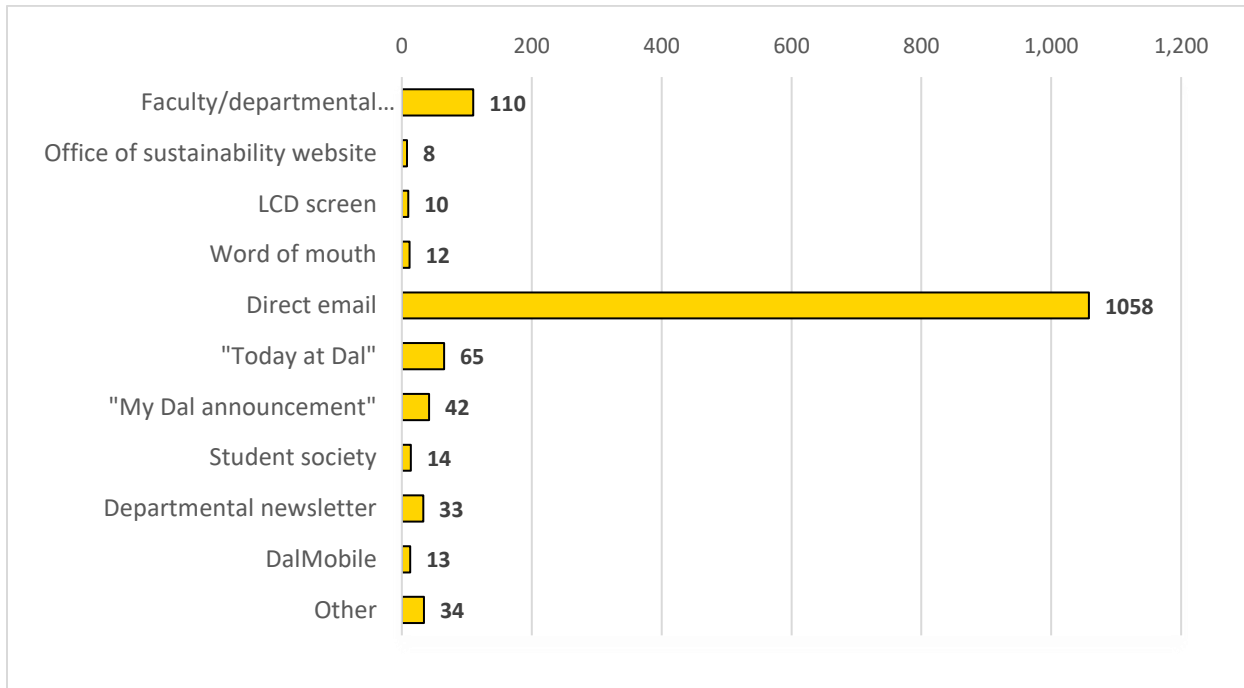


Figure 2-10. How respondents heard about the Dalhousie Commuter Survey (n = 2088 responses, 647 non-responses)

### 3. Commuting Modes

This section examines the transportation modes used to commute to and from Dalhousie University campuses. Dalhousie member's commute durations, distances from campus, arrival and departure times, and commute frequency are all important figures that will showcase travel patterns and behaviours in our community.

#### 3.1. Primary mode

The primary mode of transportation is the method used for commuting to and from campus for 70% or more of the respondent's total travel time. Results from this year's survey show walking as the most popular primary mode of transportation, followed by taking public transit, and then driving alone (Figure 3-1). It was found that 66.4% of respondents travel to campus using sustainable methods. Sustainable methods include walking, taking public transit, and biking. Similar to the 2022-2023 survey, students are found more likely to walk or take public transportation compared to staff and faculty members (Table 3-1). Interestingly, the data also shows that more Dalhousie faculty members cycle as their primary mode of transportation (13.8%), compared to 2.1% of students and 3.7% of staff. Faculty bike ridership is surprising as past Dalhousie Commuter Surveys showed decreasing trends in bike ridership. Early Commuter Surveys (2010) averaged around 10% of respondents cycling as their primary transportation method (See Chapter 6). By 2020, this number had dropped to 4.4%, and

despite a slight resurgence in 2023, it continues to fall to 3.4% for this year's data (Figure 3-1). Commuting via automobile (driving alone, with passengers, or as a passenger) has remained similar to last year's survey, and public transit usage has slightly increased, which can be attributed to the proportion of students who responded to the survey. Commuting methods categorized into the 'other' category include skateboarding/longboarding, scootering, and vanpooling.

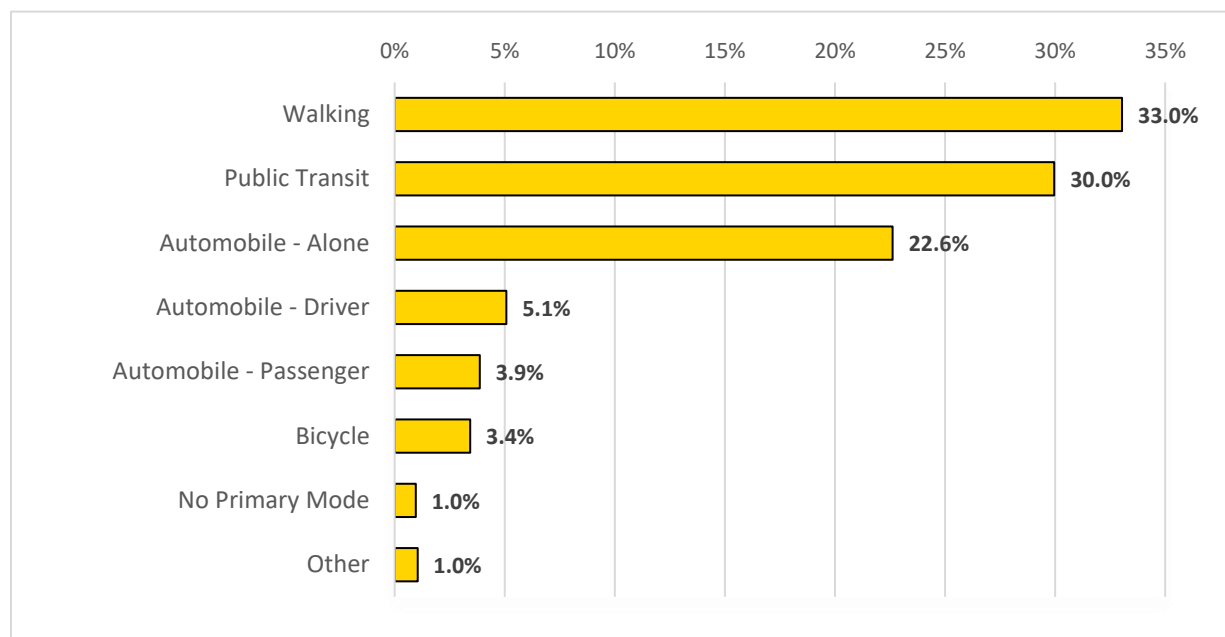


Figure 3-1. Primary commute mode (n = 2303 responses, 432 non-responses)

Table 3-1. Primary commute mode distribution percentage by group

	Student	Staff	Faculty
Automobile - Drive Alone	13.9%	46.6%	36.2%
Automobile - Driver	3.2%	9.7%	10.1%
Automobile - Passenger	3.3%	6.6%	2.1%
Public transit (including ferry services)	35.1%	20.2%	10.6%
Bicycle	2.1%	3.7%	13.8%
Walking	40.5%	11.5%	25.0%
No Primary Mode	1.2%	0.2%	0.5%
Other	0.8%	1.4%	1.6%

### 3.2. Secondary Mode

The secondary mode of transportation is the travel method used less than 30% of the time to reach the respondent's destination. Public transit is the most popular secondary method of transportation

at 30%, narrowly beating out walking at 25.8% (Figure 3-2). However, combining all automobile options (alone, driver, and passenger) makes it the most popular secondary method at 36.5%. There is a notable increase in staff and faculty taking public transit as their secondary method of transportation compared to last year. In the 2022-23 survey, staff and faculty members were more likely to not have a secondary commute mode and instead stick with their primary method [5]. An interesting note that is consistent in this year's and last year's results is the increase of being a passenger as a secondary method vs. primary.

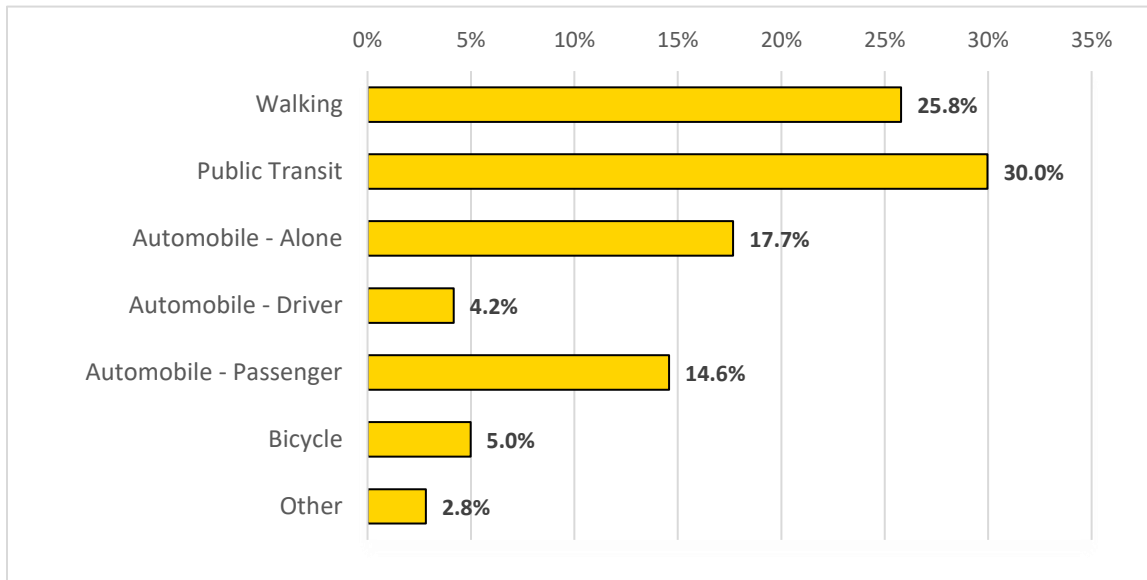


Figure 3-2. Secondary commute mode (n = 2229 responses, 506 non-responses)

Table 3-2. Secondary commute mode distribution percentage by group

	Student	Staff	Faculty
Automobile - Drive Alone	11.7%	34.3%	26.1%
Automobile - Driver	4.1%	4.5%	4.4%
Automobile - Passenger	14.8%	15.0%	11.7%
Public transit (including ferry services)	33.2%	21.8%	23.3%
Bicycle	4.6%	4.9%	7.8%
Walking	29.3%	15.2%	23.9%
Other	2.4%	4.3%	2.8%

### 3.3. Commuting Habits

Respondents were asked about their engagement in studying, researching, or engaging in community activities on their respective campuses. Most respondents indicated that they visit campus regularly to participate in these activities (Figure 3-3). The response rate for those commuting to their respective campus ‘all the time’ has increased significantly compared to the 2022-2023 survey (46.4% to 51.4%). Note that ‘none of the time’ refers to respondents working or studying remotely. Those who answered ‘N/A’ refer to respondents who commute to a health care or community facility not on Halifax or Truro campus property.

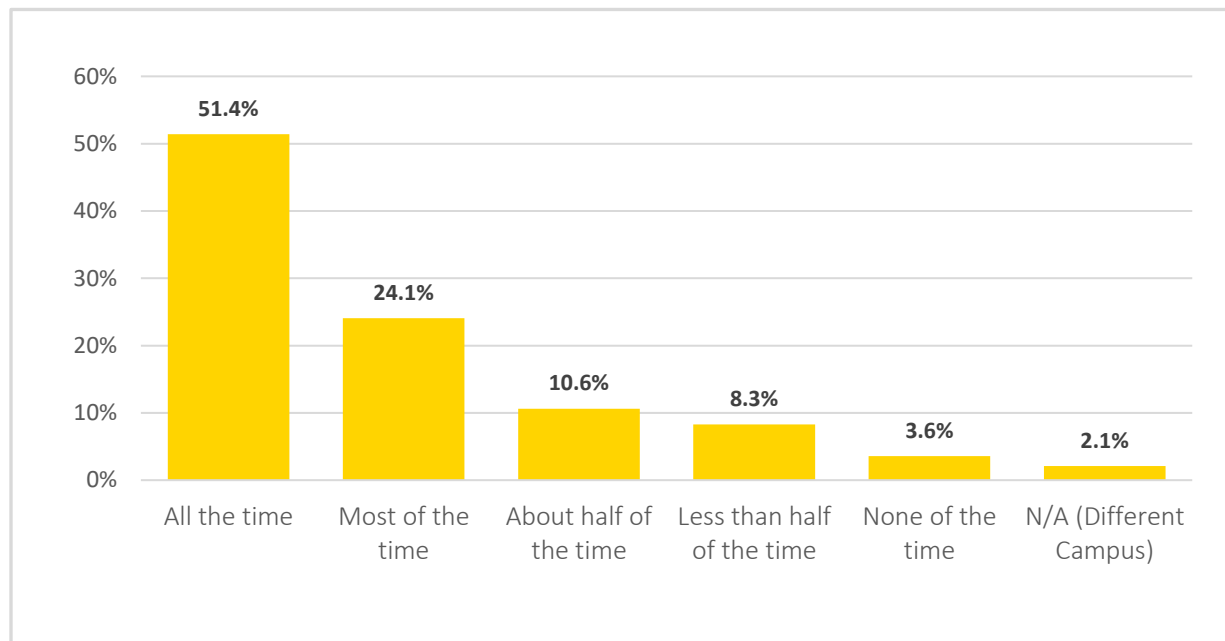


Figure 3-3. Commuting habits after COVID-19 pandemic (n = 2482 responses, 253 non-responses)

### 3.4. Automobile Parking Preferences

Similar to the previous year’s survey, the most common parking location for Dalhousie drivers on campus was at Dalhousie parking lots (Figure 3-4). This was followed by free street parking and then street-metered parking. A large portion of those who responded in the ‘other’ category noted parking at Halifax Transit bus terminals and park-and-rides.

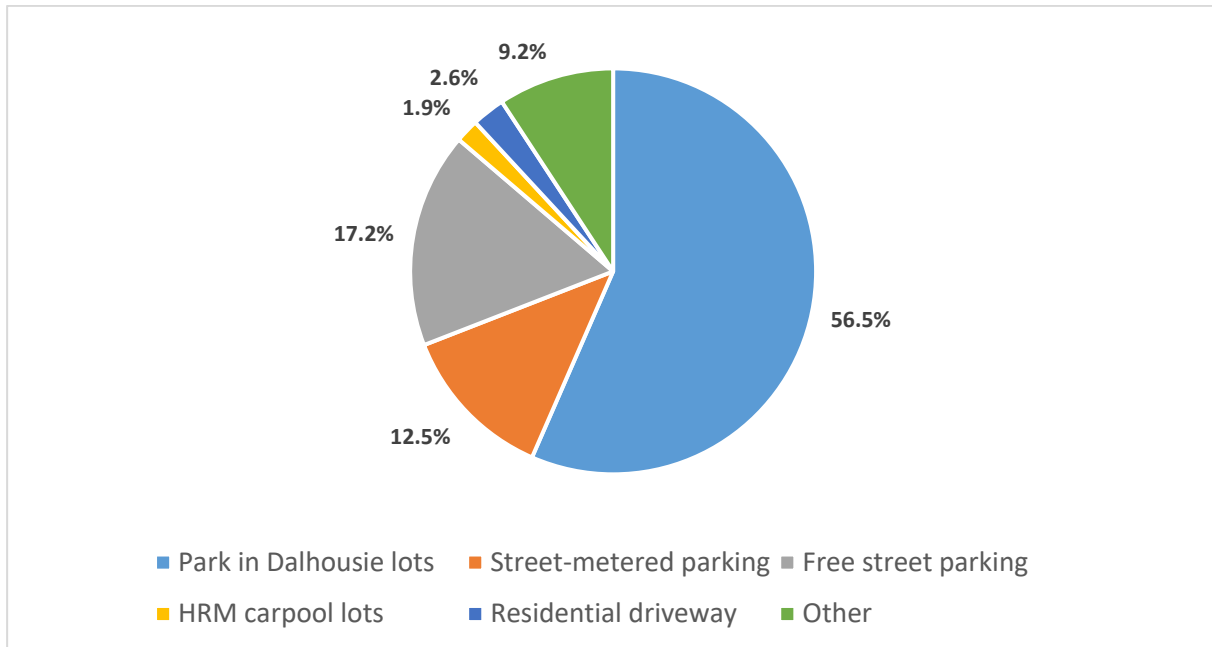


Figure 3-4. Parking preferences of respondents (n = 2071 responses [1162 not applicable], 664 non-responses)

### 3.5. Distance from campus

To determine the distances between the respondent’s residences and their primary campus, the straight-line distance was calculated based on the respondent’s provided postal code. Out of the 2,735 responses, 1,926 provided valid postal codes. The median distance from campus was 2.54 km, which is notably further away than the previous year’s median, which was 1.94 km. There also was a smaller portion of those living within 2 kilometers of campus, with 42% recorded this year versus 50.7% the year before. Consequently, there is also a larger percentage of those living between 2 and 4 kilometers away and those living over 28 kilometers away (Figure 3-5).

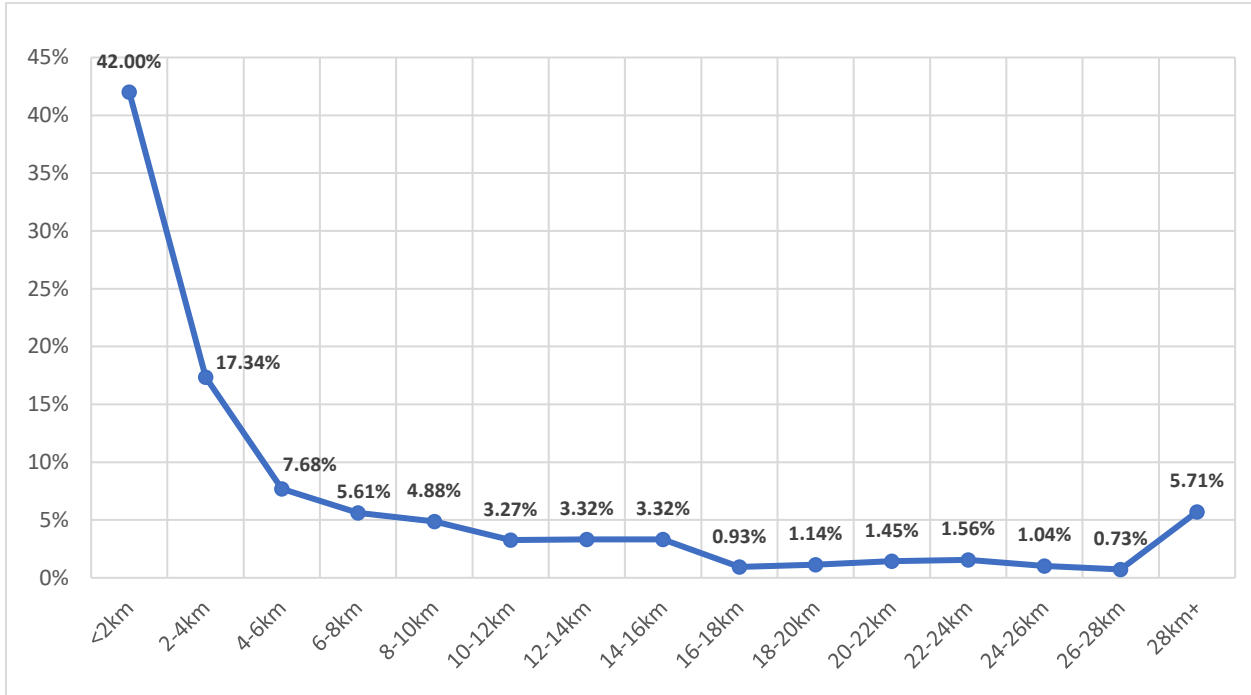


Figure 3-5. Distribution of commute distance for all valid respondents

When viewing distance averages by group, one can see students living much closer to campus than in previous years. In last year's report, students' average distance from campus was 11.4 kilometers. Student average decreased from 11.4 kilometers to 6.06 kilometers. These numbers indicate an increase in in-person classes and activities coupled with a decrease in remote work. Conversely, staff members increased their distances from campus, jumping from 11.3 kilometers to 13.32 kilometers.

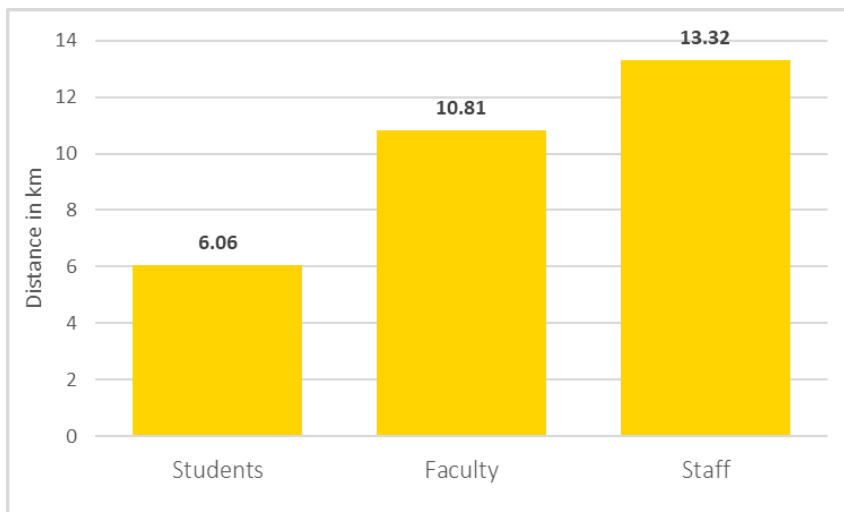


Figure 3-6. Average commute distance by respondent group

### 3.6. Commute duration

Respondents were asked to provide information regarding their estimated commute time to campus. The respondent's range was averaged and plotted in accordance with a set time range (Figure 3-7). Most respondents (49.8%) recorded their estimated commute time between 5 and 25 minutes. Responses slightly decreased from the previous year for the same range (52.7%). For those traveling to Dalhousie campuses, the median commute time was 21.5 minutes (very similar to last year), and the mean was 27.6 minutes. 5.3% of respondents reported spending over 70 minutes commuting to their respective campuses.

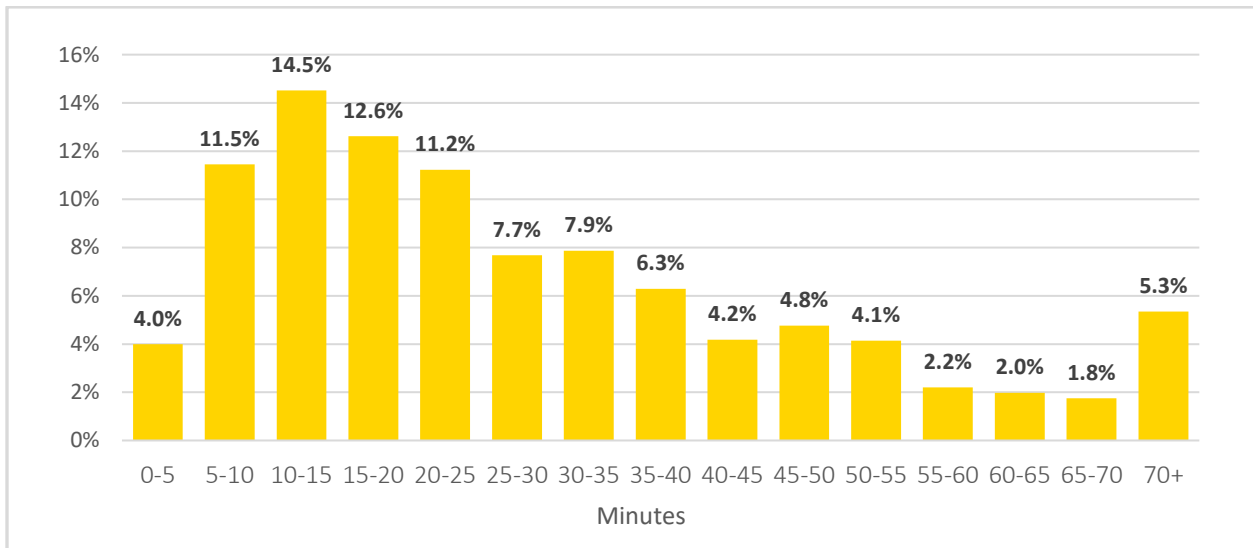


Figure 3-7. Distribution of commute duration for primary mode

Similar to last year, staff commuted the longest to campus at an average of 36 minutes (Figure 3-8). Students commuted the shortest time to campus at 25.6 minutes, and faculty members commuted for an average of 30.6 minutes. Student and staff commute duration increased marginally from last year, with the faculty average increasing more substantially. It is interesting to note students' commute duration getting longer despite their commute distance getting closer.

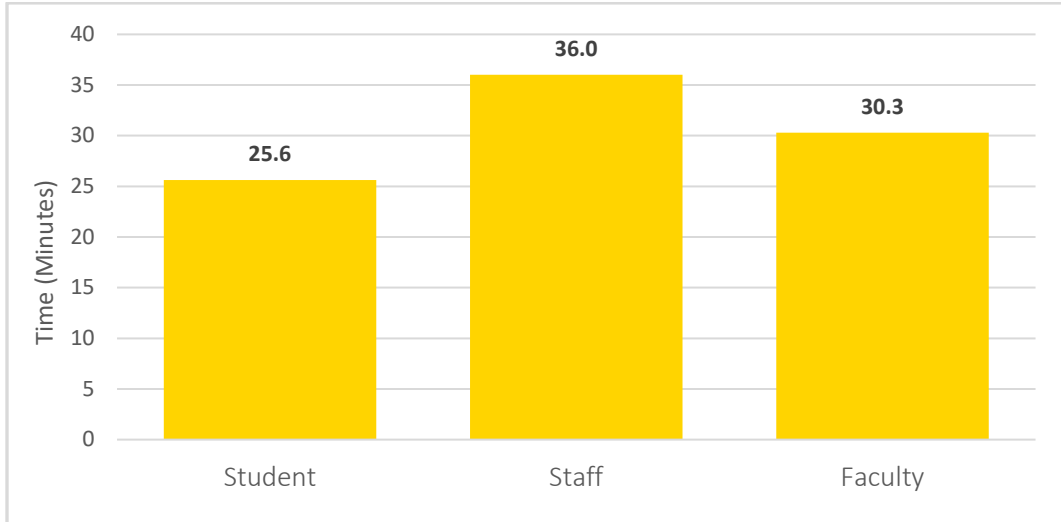


Figure 3-8. Average commute duration by group

### 3.7. Arrival and departure time

Figures 3-9 and 3-10 show that most respondents arrive on campus between 8:00 am and 10:00 am (76.4%) and depart between 3:00 pm and 6:00 pm (76%). It is notable that the distribution of departure times is more spread out than arrival times. This implies that the A.M. peak at Dalhousie University is more intense and involves more commuters compared to P.M. peak hours.

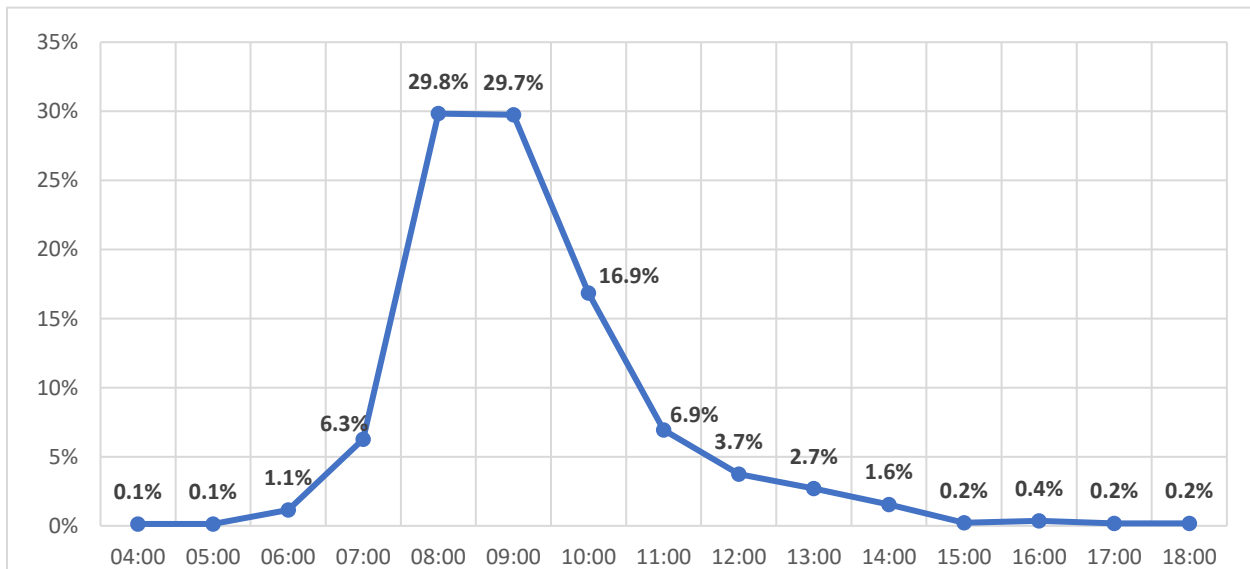


Figure 3-9. Distribution of arrival times (n = 2219 responses, 516 non-responses)



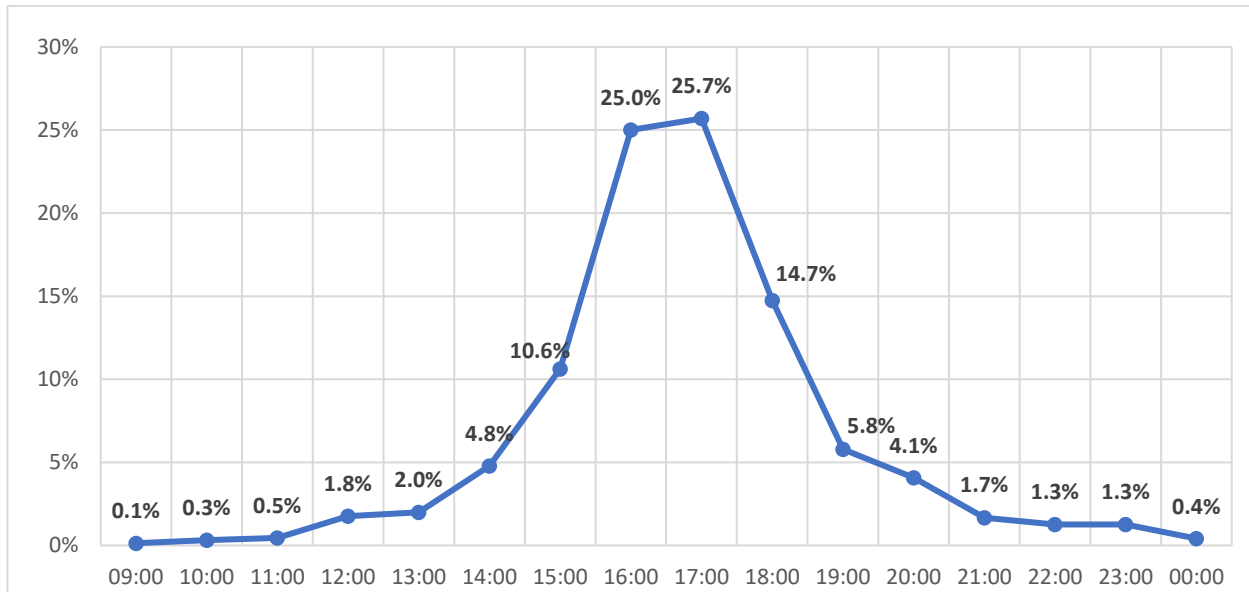


Figure 3-10. Distribution of departure times (n = 2211 responses, 524 non-responses)

## 4. Intercampus Travel

This study explores commuting patterns at Dalhousie’s University’s campuses in Halifax (Studley, Carleton, and Sexton) and Truro (Agricultural). This section demonstrates the travel habits and commuting patterns between Halifax campuses and between Halifax and Truro campuses.

### 4.1. Travel between Halifax campuses

Almost half of the respondents (49.1%) stated they travelled between Halifax campuses at least once a month (Figure 4-1). This finding signifies that there is high travel demand between Dalhousie campuses on the Halifax peninsula. Student respondents travel the most between campuses, as 13.1% reported making this trip daily, and 38.5% travelled at least once a week (Table 4-1). Staff and faculty were less likely to make frequent trips between Halifax campuses; 34.0% of staff and 34.9% of faculty reported traveling between campuses a few times a year.

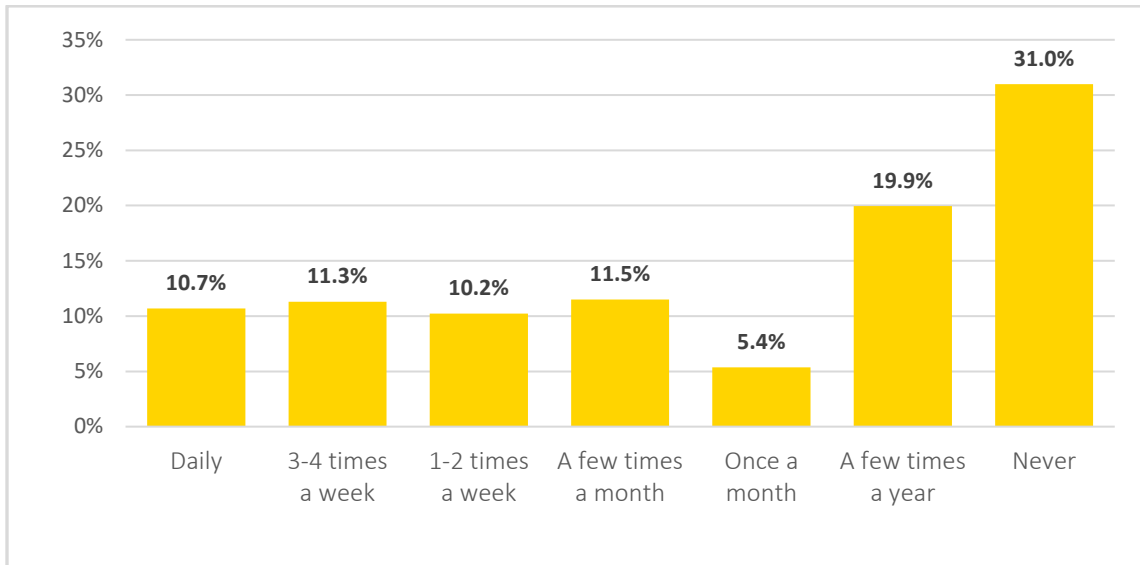


Figure 4-1. Travel frequency among Halifax campuses (n = 2276 responses, 459 non-responses)

Table 4-1. Travel frequency between Halifax campuses by group

	Daily	3-4 times a week	1-2 times a week	A few times a month	Once a month	A few times a year	Never
Student	13.1%	14.1%	11.3%	12.0%	4.3%	13.5%	31.7%
Staff	5.0%	4.2%	7.4%	10.9%	7.2%	34.0%	31.2%
Faculty	5.2%	7.8%	8.3%	9.4%	9.4%	34.9%	25.0%

Due to the proximity between Halifax campuses, it is not surprising that most respondents walk between Halifax campuses (Figure 4-2). The second most common method to travel between Halifax campuses is by bus. Respondents likely take the bus between campuses as several buses run between Studley/Carleton and Sexton campuses, such as the 1, 7A/B, 8, 10, and 90 [10]. Students take buses between campuses more often than staff and faculty; 28.5% of students use buses as their primary travel mode between campuses, while only 4.4% of staff and 2.8% of faculty do so. This is likely due to students utilizing their UPass, as Dalhousie employer bus passes are a less popular option. Consistent with the results from the 2022-2023 Commuter Survey, more respondents drive than bike between Halifax campuses.

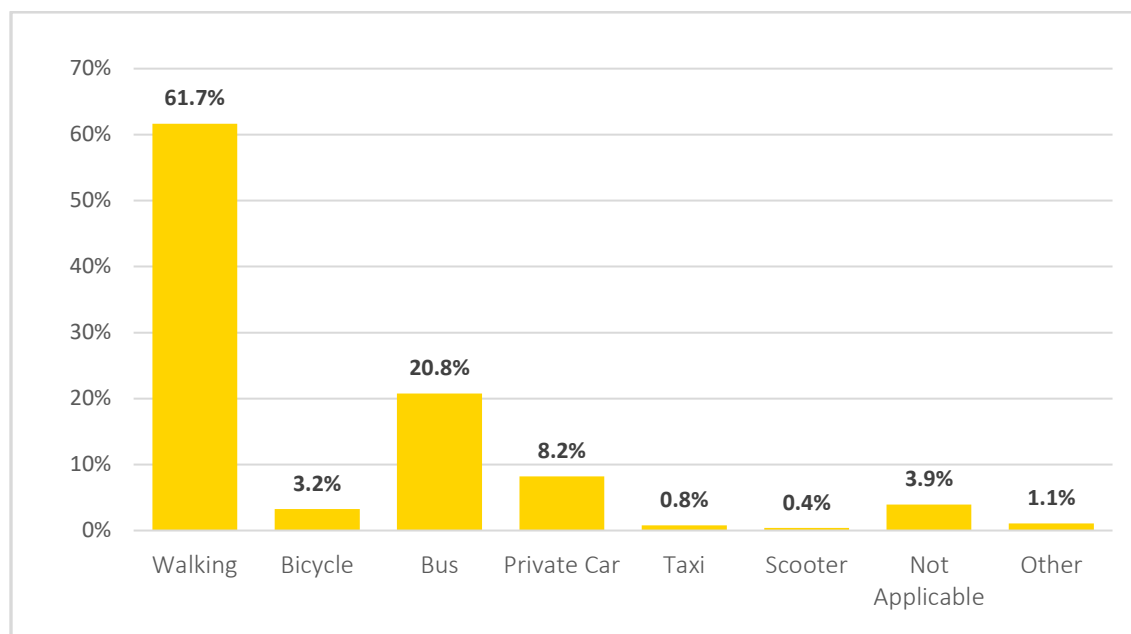


Figure 4-2. Primary travel mode between Halifax campuses (n = 1575 responses, 1160 non-responses)

Table 4-2. Primary travel mode between Halifax campuses by group

	Student	Staff	Faculty
Walking	58.0%	71.1%	65.0%
Bicycle	2.7%	1.5%	11.2%
Bus	28.5%	4.4%	2.8%
Private Car	6.2%	11.7%	15.4%
Taxi	0.2%	2.3%	1.4%
Scooter	0.5%	0.3%	0.0%
Not Applicable	3.5%	5.5%	4.2%
Other	0.5%	3.2%	0.0%

## 4.2. Travel between Halifax and Truro campuses

Fewer respondents reported commuting between Halifax campuses and Truro’s Agricultural campus compared to last year. Survey respondents generally do not travel between Halifax and Truro campuses, which is consistent with results from the 2022-2023 Commuter Survey. Staff and faculty responded as more likely to make this trip at some point, whether it is a few times a year or rarely, while students were more likely to never make this trip (Table 4-3).

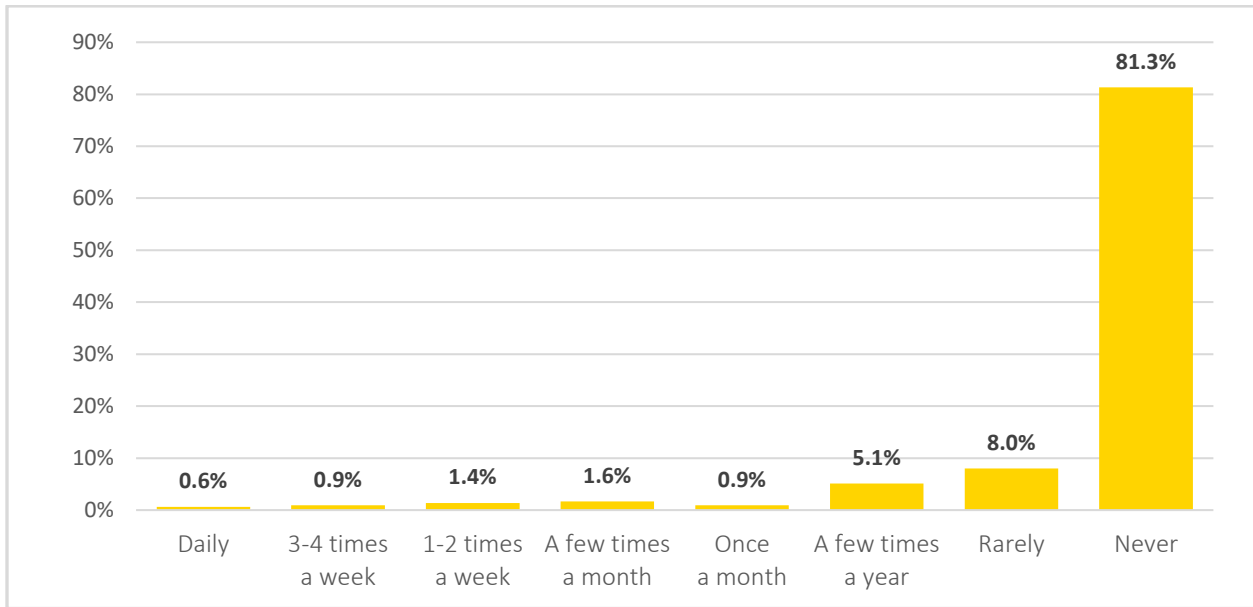


Figure 4-3. Travel frequency between Halifax and Truro campuses (n = 2256 responses, 479 non-responses)

Table 4-3. Travel frequency between Halifax and Truro campuses by group

	Daily	3-4 times a week	1-2 times a week	A few times a month	Once a month	A few times a year	Rarely	Never
Student	0.8%	1.2%	1.6%	1.8%	0.7%	2.6%	4.8%	86.5%
Staff	0.2%	0.2%	1.0%	1.2%	1.2%	11.3%	17.8%	67.1%
Faculty	0.0%	1.1%	0.5%	1.6%	1.6%	9.0%	9.0%	77.2%

Most respondents who travel between Halifax and Truro campuses noted driving alone as their primary commuting method to get between destinations (Figure 4-4). A surprising proportion of respondents reported busing when traveling between Halifax and Truro campuses, surpassing carpooling which had more respondents last year.

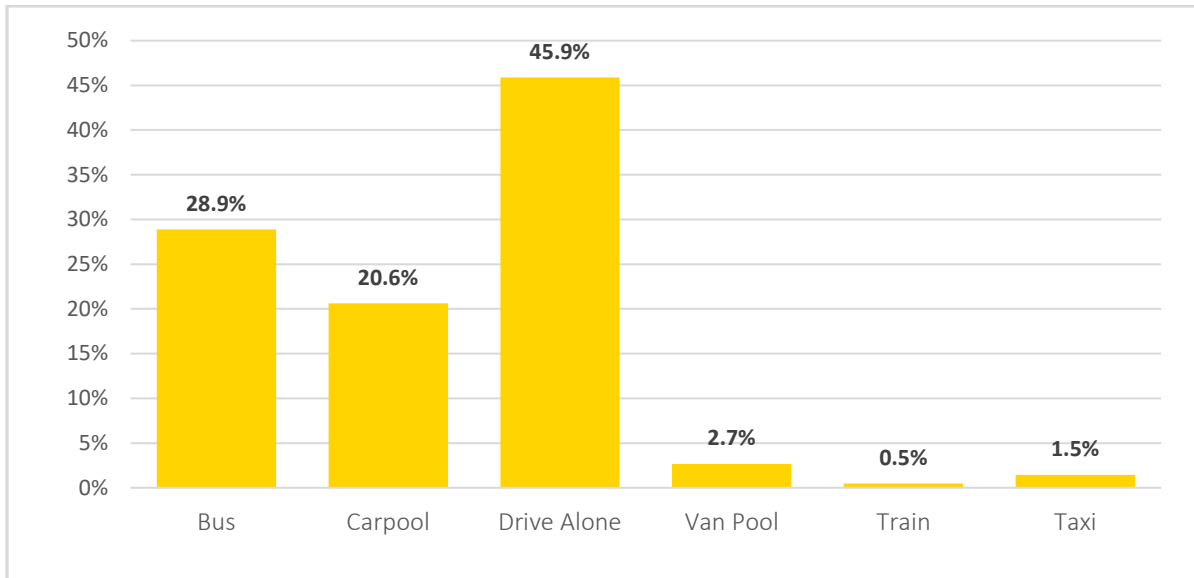


Figure 4-4. Primary travel mode between Halifax and Truro campuses (n = 2271 responses (1859 not applicable), 464 non-responses)

## 5. Comparison by Campus

Dalhousie University has multiple campuses in Halifax and Truro. This section examines respondents who frequent different campuses, to see if transportation modes change amongst destination. This section also compares commute distance and duration between campus respondents.

### 5.1. Primary mode

Similar to last year's survey, primary commuting methods varied between campuses. Walking was the most popular mode for Studley and Carleton campuses, with public transportation being a close second for both (Figure 5-1). Sexton campus was the opposite, public transportation was the most popular primary commute mode, and walking was second. The most popular primary commute mode for the Agricultural campus was driving alone. However, the share of Agricultural respondents using this mode decreased from 62.1% to 51.1% over the past year. Consequently, more Agricultural respondents reported driving others, being a passenger, or walking. The biggest disparity between Halifax campuses occurs with public transit. Only 25.9% of Carleton respondents take public transit as their primary mode, while 39.7% of Sexton respondents take it as their primary mode (Figure 5-1). As Truro currently does not have a traditional public transportation system, no respondents who frequent the Agricultural campus reported using public transit as their primary commute method.

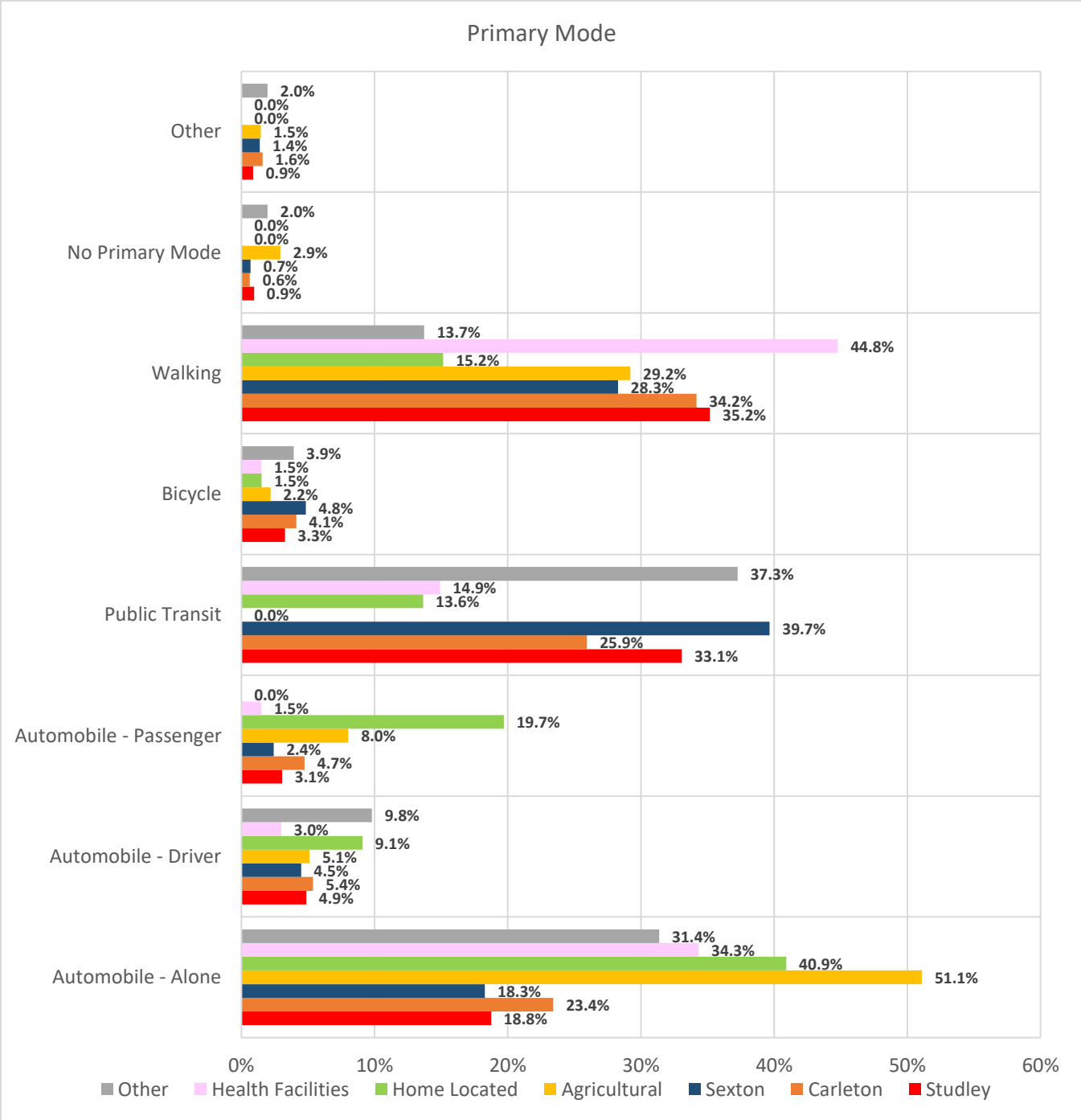


Figure 5-1. Primary commute mode by campus

### 5.2. Secondary mode

Most respondents drive alone, take public transit, and walk as a secondary mode of transportation (Figure 5-2). Driving alone is the most popular secondary commute method for those attending at home, a health facility, or another location. Public transit is the most popular secondary mode for all

Halifax campuses. For the Agricultural campus, the most common secondary method is walking. The number of respondents who reported being driven as a passenger increased between primary and secondary methods. In particular, the Agricultural campus respondents reported being a passenger proportionally more than other locations.

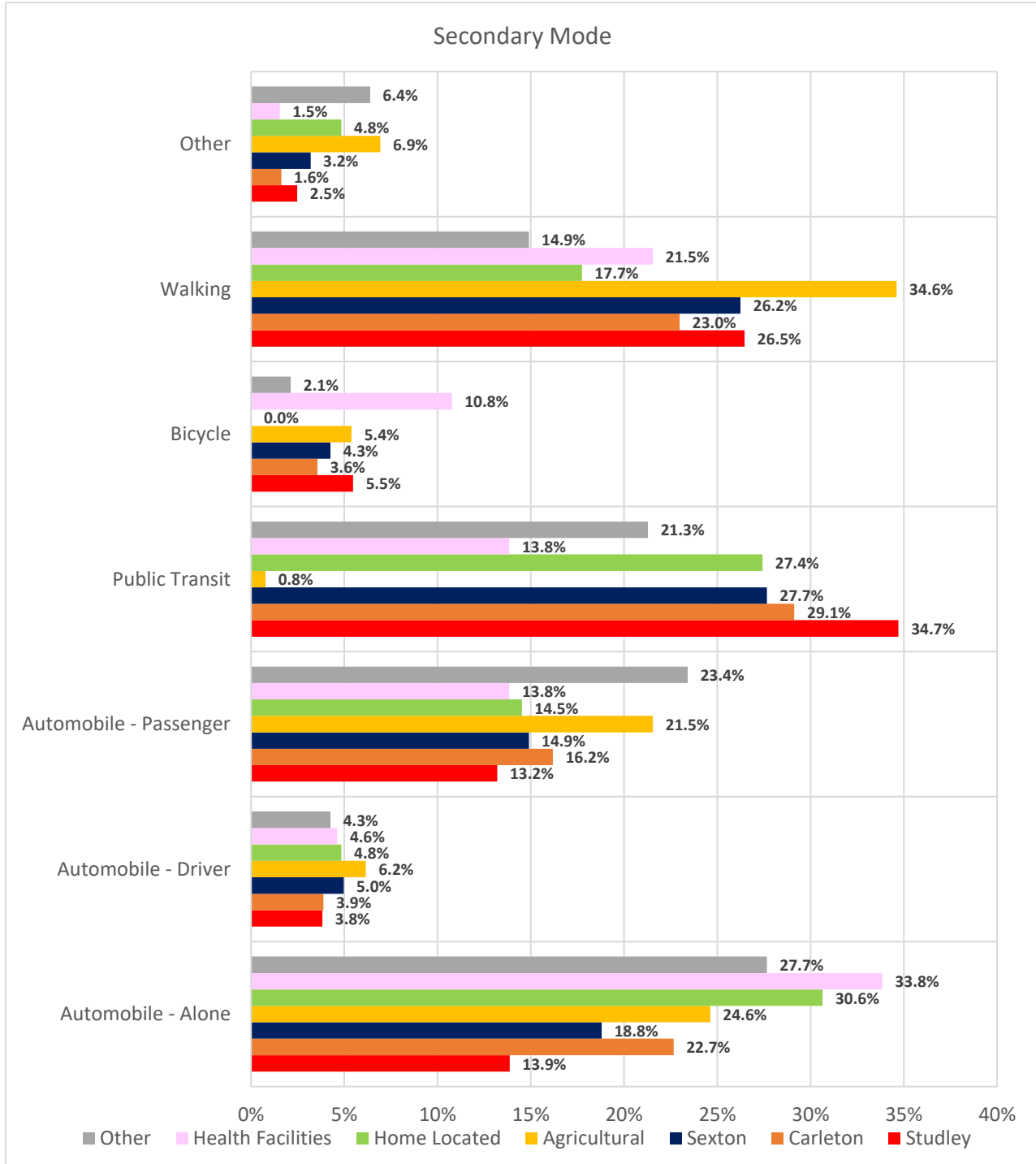


Figure 5-2. Secondary commute mode by campus

### 5.3. Commute distance

As is common with previous surveys, those attending the Agricultural campus have a greater commuting distance than those attending Halifax campuses (Figure 5-3). Commute distance averages were significantly smaller than last year's results; the Agricultural campus saw a decrease in mean distance from approximately 30 kilometers to 18.64 kilometers. The average commute distance to the Studley Campus also decreased from 11 kilometers to 6.71 kilometers, overtaking Sexton as the campus with the shortest average commuting distance. Conversely, commuting distances became noticeably longer for those frequenting Carleton (Figure 5-3).

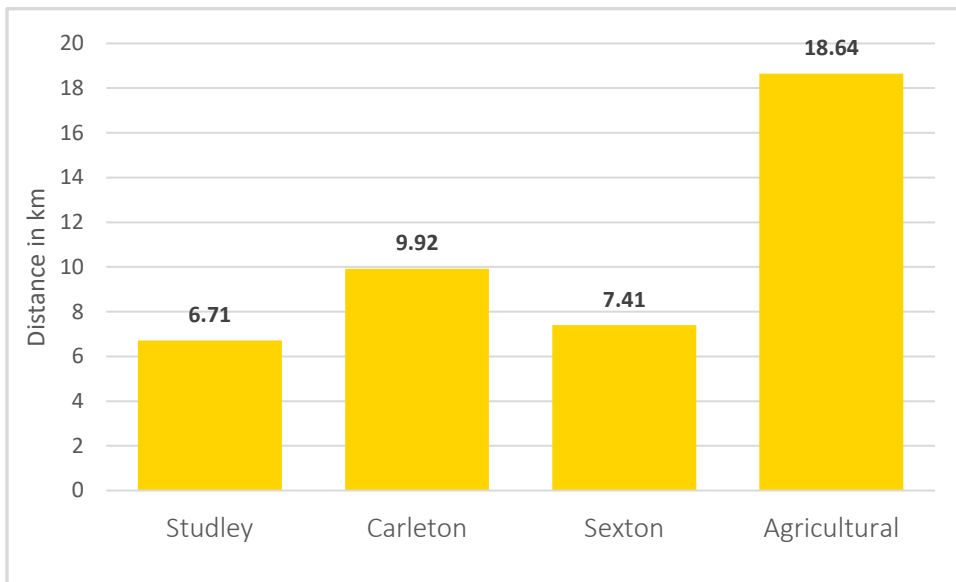


Figure 5-3. Average commute distance by campus

### 5.4. Commute duration

Reported average commute times are very similar across campuses, other than Carleton respondents who report taking longer to reach their destination. It is interesting that the Agricultural Campus has the lowest average commute time despite having the highest average commute distance (Figure 5-4). Last year's report found alike results which can be attributed to Agricultural Campus attendees using personal vehicles in a low-traffic area for their commute [5].



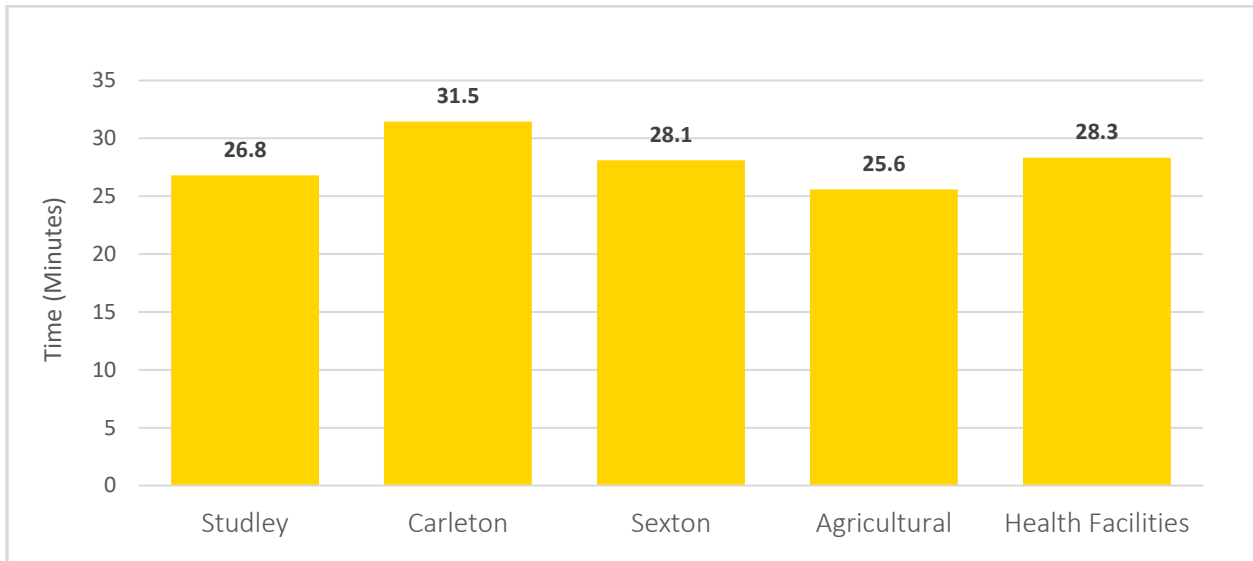


Figure 5-4. Average commute time by campus

## 6. Comparison by Year

This section aims to compare commuting behaviour throughout the years. Data from this year's survey will be plotted with data from previous surveys that date back to 2009. It is important to look for patterns and trends throughout the years, and to determine long-term shifts and habits of Dalhousie members.

### 6.1. Commute mode

Primary commute choice has been consistent throughout the Commuter Survey, especially since 2019. The most popular commuting methods (in order) are walking, driving, and using public transit. These methods have similar numbers, which contrasts the years before 2018 when fewer respondents noted taking public transportation as their primary commute mode (Figure 6-1). Biking has continued to decline as a primary commuting method, as it hit a new low of 3% this year (Figure 6-1). The 2022-23 Commuter Survey remarked on the increase of micromobility initiatives such as electric scooters. The report predicted that scootering would soon become some citizens' primary commute mode [5]. While these initiatives have continued, scooters have not shown to be a considerable primary commute mode in this year's survey.

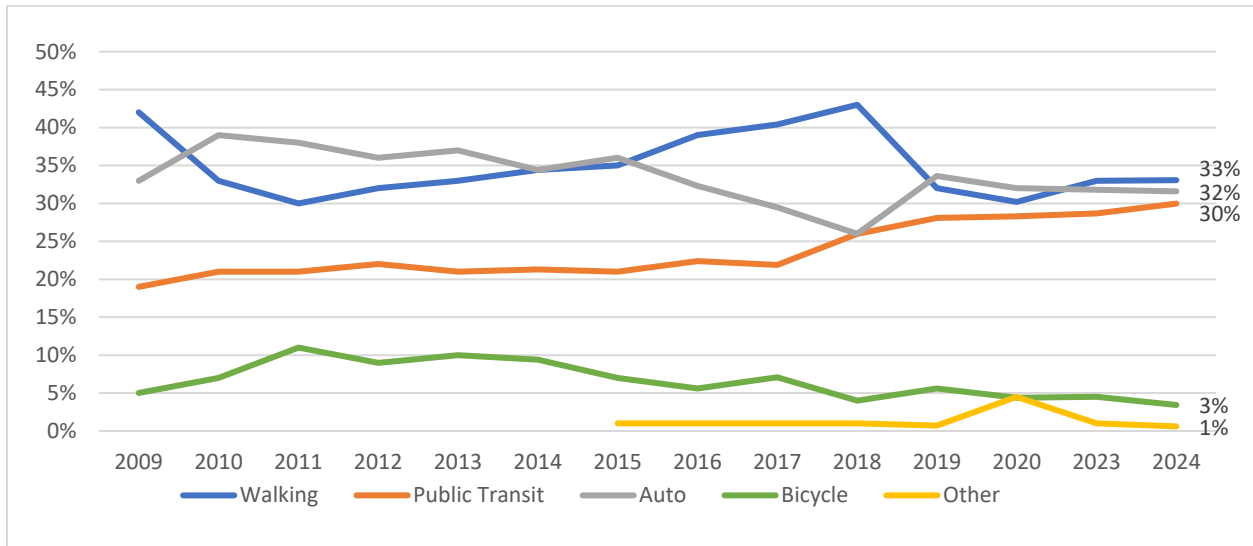


Figure 6-1. Primary commute mode by year

Compared to the primary commute mode for all respondents (students, faculty, and staff), there is more variance within students' primary commuting modes (Figure 6-2). Both driving and public transit have increased since last year while walking and biking have decreased. Even though more students are walking to campus between 2020 and 2023, walking is less popular than in 2011-2015 (Figure 6-2). Additionally, the percentage of students taking the bus to campus has gotten closer to pre-pandemic levels.

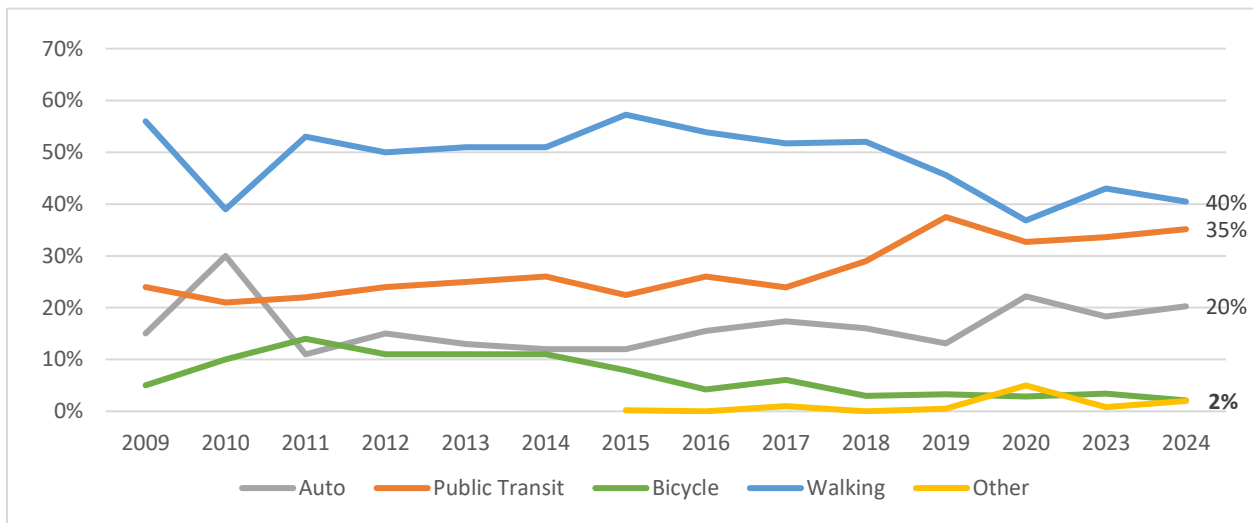


Figure 6-2. Student primary commute mode by year

By examining staff and faculty members at Dalhousie, trends show an increase in driving personal vehicles and a decrease in almost every other mode between 2020 and now (Figure 6-3). Driving has consistently been the most common mode for these groups since the start of the Commuter Survey; however, this year, automobile usage hit a new peak at 59%. Interestingly, public transit is the second

most common commute method for faculty and staff, surpassing walking by a close margin (Figure 6-3). Additionally, bicycling has been more popular with staff and faculty compared to students since 2014.

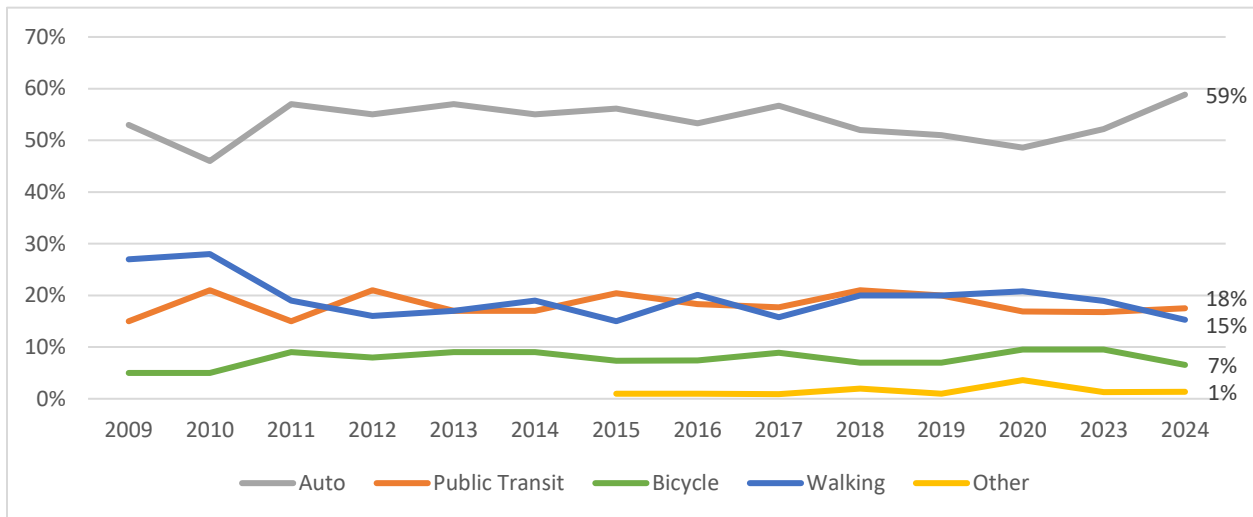


Figure 6-3. Staff & faculty primary commute mode by year

## 6.2. Commute distance

The 2023-24 survey showed commute distance statistics returning to pre-pandemic trends for the first time. During the pandemic, students would work remotely and be farther away from their respective campuses. This explains the spike in student commute distance for students during 2020 (Figure 6-4). Similarly to pre-COVID-19 commute reports between 2011 and 2019, this year's showed staff living the furthest away, followed by faculty, and then students. Faculty and staff have a greater commute distance compared to the 2022-23 survey.

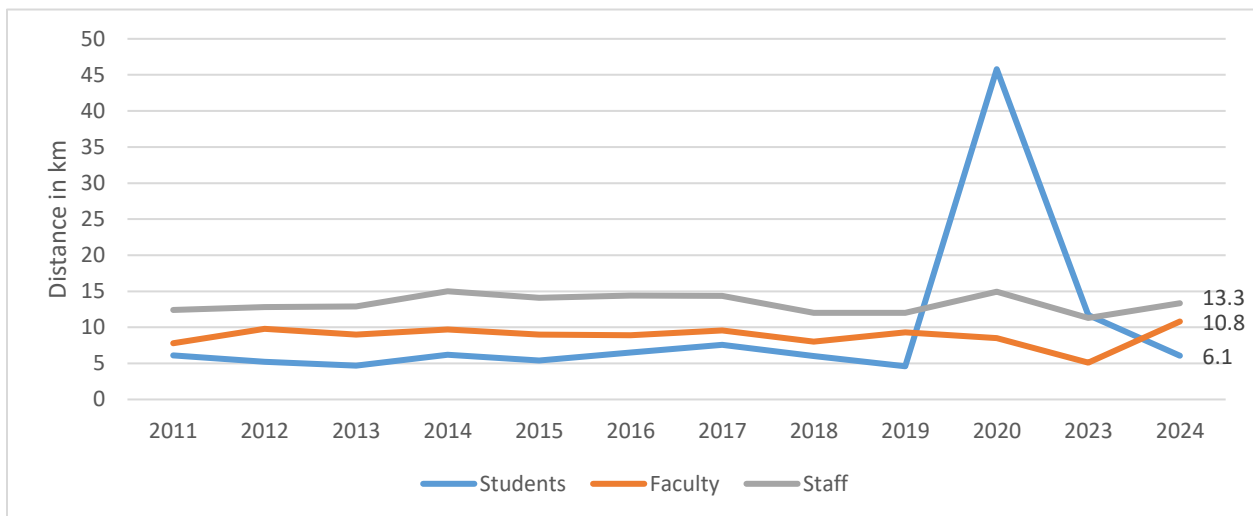


Figure 6-4. Average commute distance of students, faculty, and staff by year

## 7. Behaviour and Travel Patterns

It is important to view and determine Dalhousie member's behavioural and travel patterns outside of their trips within or to/from Dalhousie property. By accounting for all trips, there will be a better understanding of how Dalhousie members interact with their surrounding urban fabric. The section will begin with a short paragraph about how the COVID-19 pandemic affected travel behaviour. It will then be followed by an analysis of teleworking habits to determine the frequencies of online work and schooling. There will also be a focus on monthly activity commuting frequencies regarding work, shopping, and food delivery.

### 7.1. Changes in Travel Behaviour – COVID-19 and Remote Work

When the shutdown occurred due to the COVID-19 pandemic in early 2020, most non-essential travel and activities were paused. Commuting habits and modes shifted, public transit saw a sharp decrease in ridership, and people were making fewer trips in general [11]. Dalhousie University's Transportation Demand Management Plan for Sustainable Commuting noted that between 2020-2022, there was a decrease in commuting to campus and an increase in remote workers [12]. They also found that several respondents changed how they commuted to campus, most notably moving away from taking public transit [12]. A goal for this report is to determine if these mode shifts by Dalhousie members are permanent or temporary actions. As WHO (World Health Organization) officially downgraded COVID-19 from its pandemic status on May 5, 2023, there is a year's worth of post-pandemic travel patterns to analyze for the first time [13].

Remote work and learning became the new normal for Dalhousie staff, faculty, and students during the pandemic. At the time, 63.9% reported fully being at home for their work or studies according to the 2020-21 Dalhousie Commuter Survey [14]. Over the following years, Dalhousie would slowly transition back into hybrid and in-person learning. Still, the Office of Sustainability reported that 15% of campus students, staff, and faculty either worked remotely or had a hybrid schedule during the academic year of 2022-2023 [7]. This was 10% more than the expected baseline for the academic year [7]. Due to the uncertainty regarding remote working and learning, this report is set out to determine how many Dalhousie members are still not working in-person.

### 7.2. Teleworking Usage

To determine how much remote work and schooling occurs at Dalhousie University, survey respondents were asked how many hours a day they would use their personal device for teleworking purposes. Those who responded as teleworking for more than 18 hours a day will be ignored as it is assumed some respondents may have reported the number of hours they telework for the week.

Students, being the youngest group on average, had the highest electronic device use. While faculty, who are the oldest group on average, had the lowest electronic device use. Students reported using their electronic devices for teleworking at 6.62 hours per day. Staff were second at 5.45 hours per day, and faculty third at 5.02 hours per day. Overall, all groups appeared to use their devices for a good portion of each day, as only 13.7% of total respondents reported teleworking for 2 hours or less. Only 2.7% reported not using a personal device at all to telework.

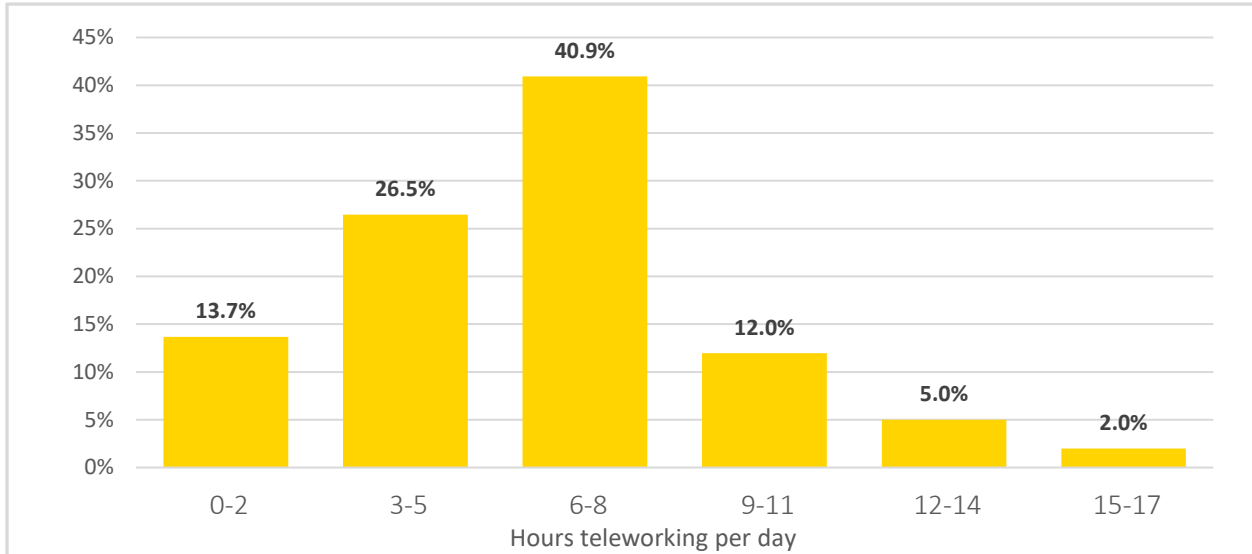


Figure 7-1. # of hours teleworking per day (n = 2306 responses (126 not valid), 429 non-responses)

Table 7-1. Hours teleworking per day by group

	0-2	3-5	6-8	9-11	12-14	15-17
Student	8.5%	30.0%	38.3%	14.3%	6.4%	2.5%
Staff	24.6%	12.8%	54.6%	5.8%	1.7%	0.4%
Faculty	27.4%	31.4%	29.1%	8.6%	1.7%	1.7%

### 7.3. Monthly Activities

New to this year’s Commuter Survey, we asked respondents how often they commuted for various activities, including working, shopping, receiving virtual healthcare, ordering food, and going out to a restaurant. These observations occurred to determine other commuting habits by respondents that are not related to the university. Responses will showcase a multitude of mobility patterns throughout the community.

#### 7.3.1 Work

Roughly 30% of respondents reported travelling to work at least five times a week (Figure 7-2). Half of respondents noted traveling occasionally or sporadically throughout the week or month. 20.41% of respondents do not have to commute to work, assuming the respondents are either working remotely or are unemployed. Exactly half of respondents reported travelling to work by some proportion, but not every single day of the week.

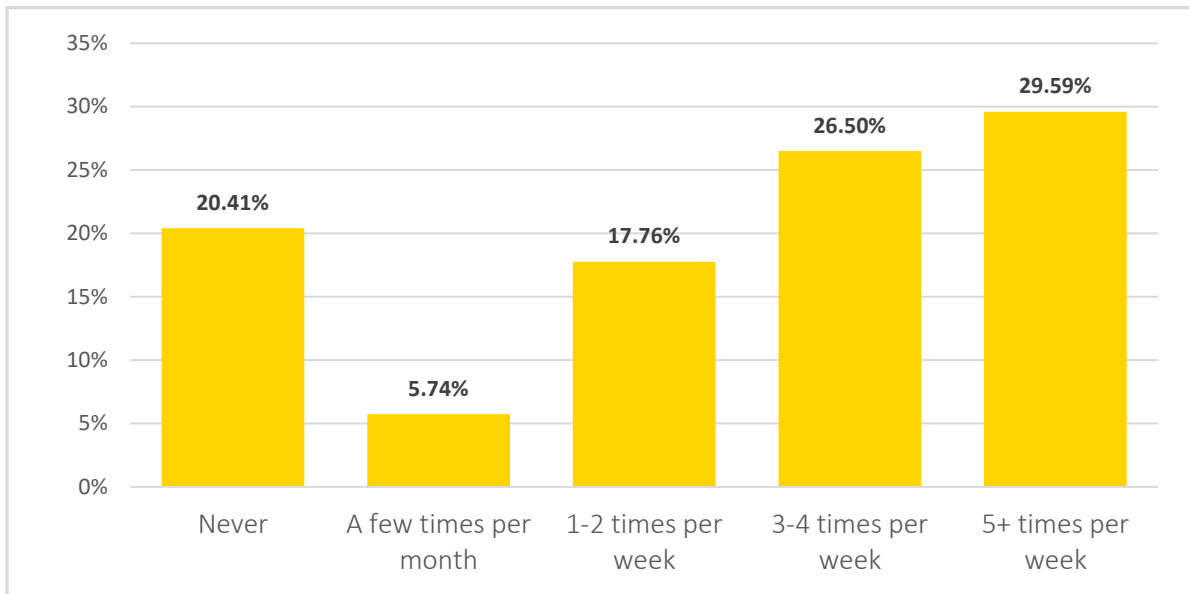


Figure 7-2. Monthly Levels Travelling to Work

Despite other indicators showing that the Dalhousie University community is moving away from remote learning and working, 72.32% of respondents reported working from home in some manner (Figure 7-3). However, those who reported working from home could be students who perform homework tasks and study at their home location. In the future, this question will be redesigned to enhance our understanding of remote work at Dalhousie University.

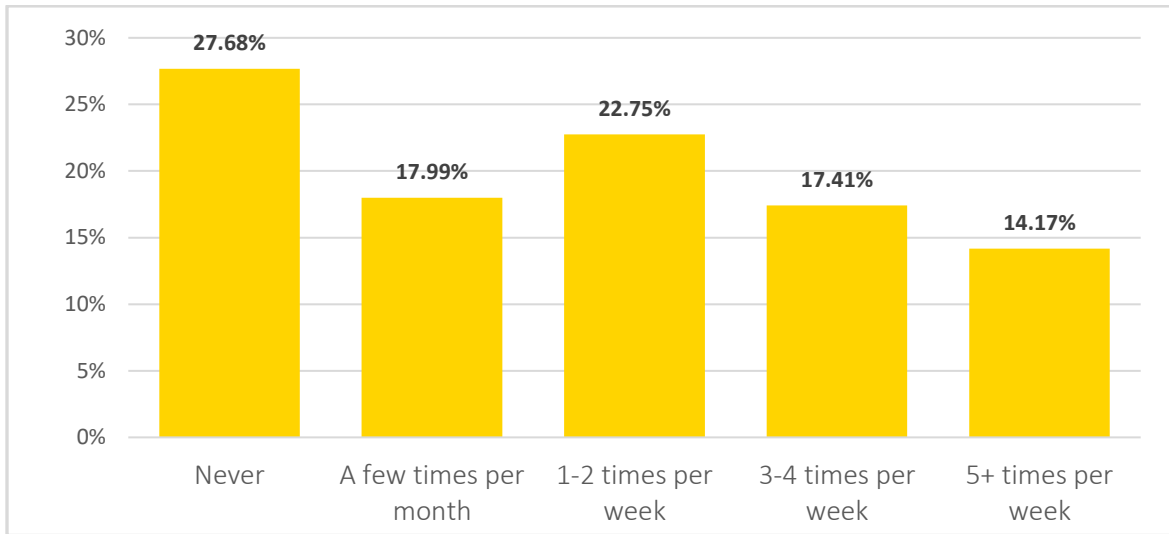


Figure 7-3. Monthly Levels Working from Home

### 7.3.2 Shopping

Most respondents noted going shopping in person as an occasional event (Figure 7-4). 84.52% reported shopping in person a couple of times a month or weekly. Only 3.5% reported never shopping in person. These results show that most respondents are comfortable going back in person to shop as they did before the pandemic. Shopping online for pickup was the least common method amongst respondents (Figure 7-5). 64.66% reported to have never done this, while only 1.51% reported shopping online for pickup frequently (>2 times a week). Shopping online for delivery was more popular than shopping online for pickup, however not as popular as shopping in person (Figure 7-6). Most respondents (52.64%) engaged in shopping online for delivery a few times a month, again an occasional activity.

By comparing in-person, online for pick-up, and online delivery shopping methods, Dalhousie respondents most commonly shop in-person. These results suggest that in-person shopping is returning to pre-COVID habits.

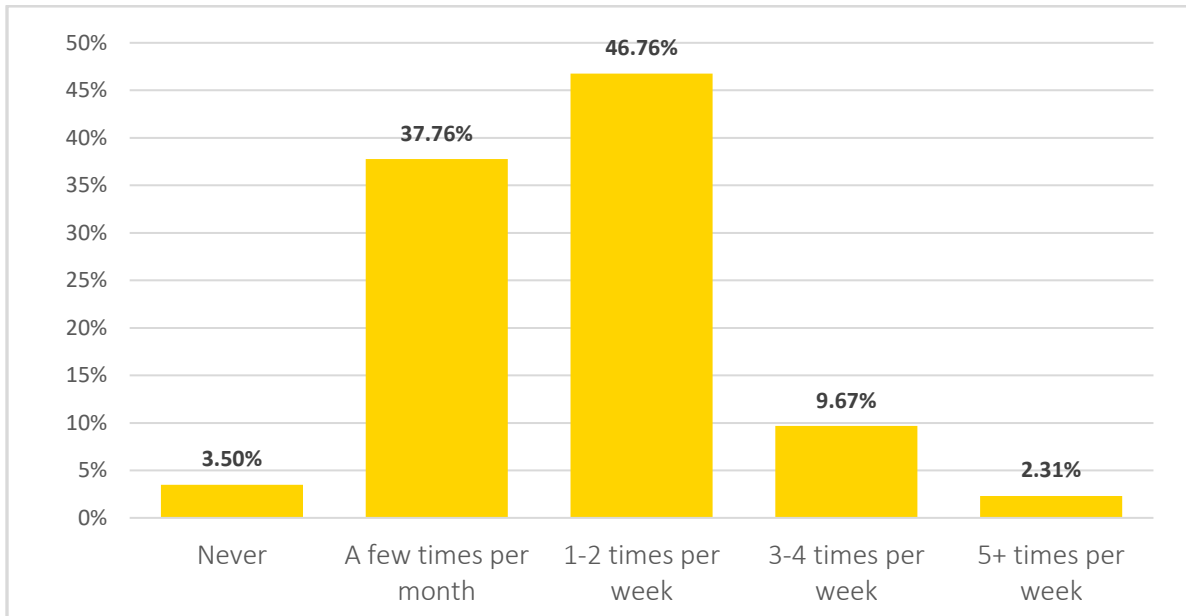


Figure 7-4. Monthly Levels Shopping In-person

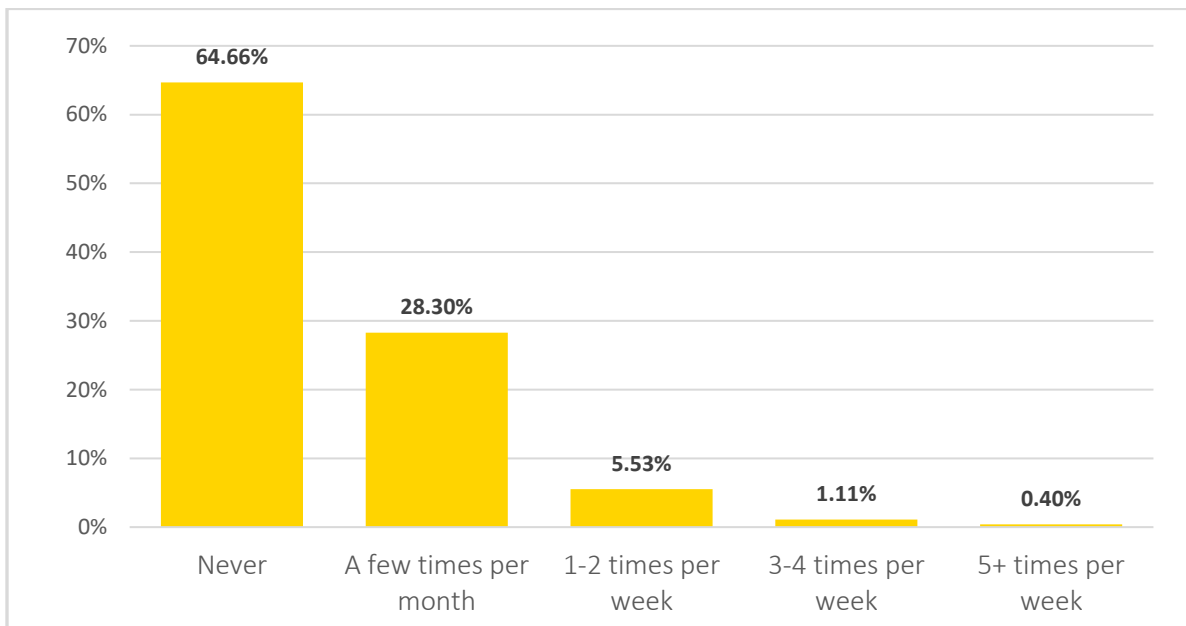


Figure 7-5. Monthly Levels shopping online for pickup



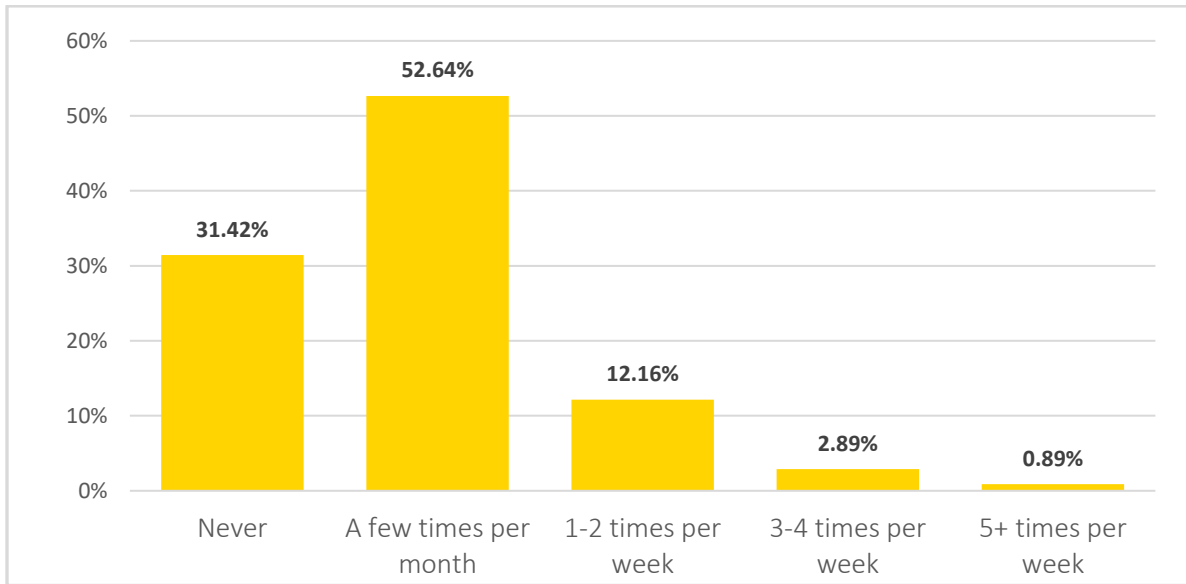


Figure 7-6. Monthly Levels shopping online for delivery

### 7.3.3 Food

Most reported eating out at a restaurant occasionally but rarely consistently throughout the week (Figure 7-7). Only 13.03% responded that they never go out to eat at a restaurant. This indicates that eating out at a restaurant has returned to pre-pandemic levels. While most reported ordering food for delivery a few times per month (Figure 7-8), it was less than those who reported going out to eat a few times per month. 39.95% stated they never order food for delivery. This shows that with Dalhousie University respondents, dining in is generally more popular than ordering delivery. This implies that more respondents will be commuting to a restaurant/food location, and fewer food delivery drivers will be on the road/parking compared to during the pandemic.

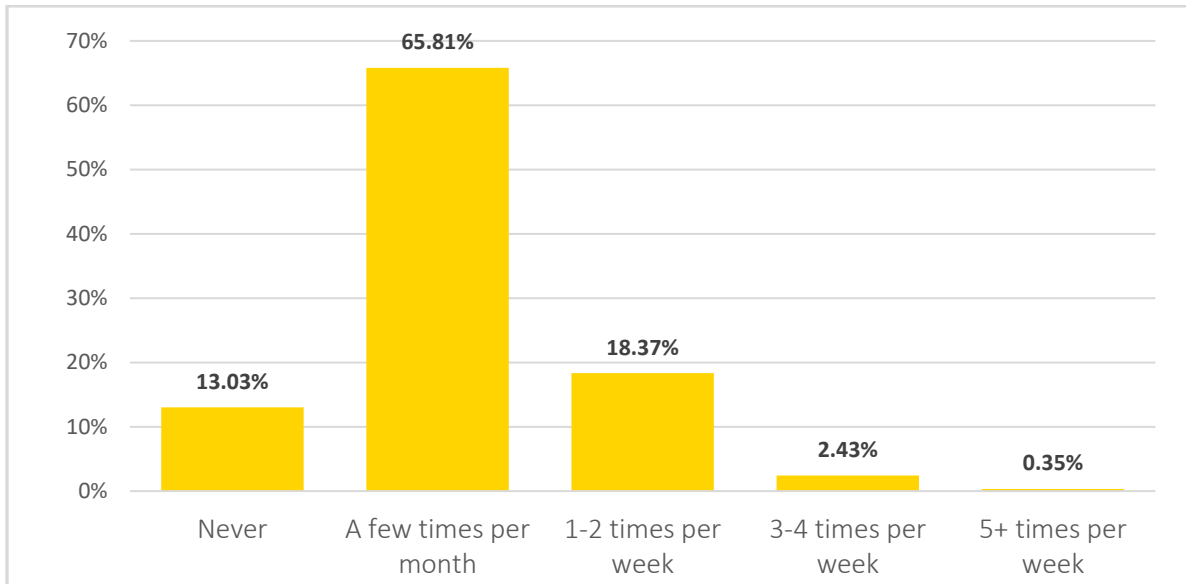


Figure 7-7. Monthly Levels Eating at Restaurant

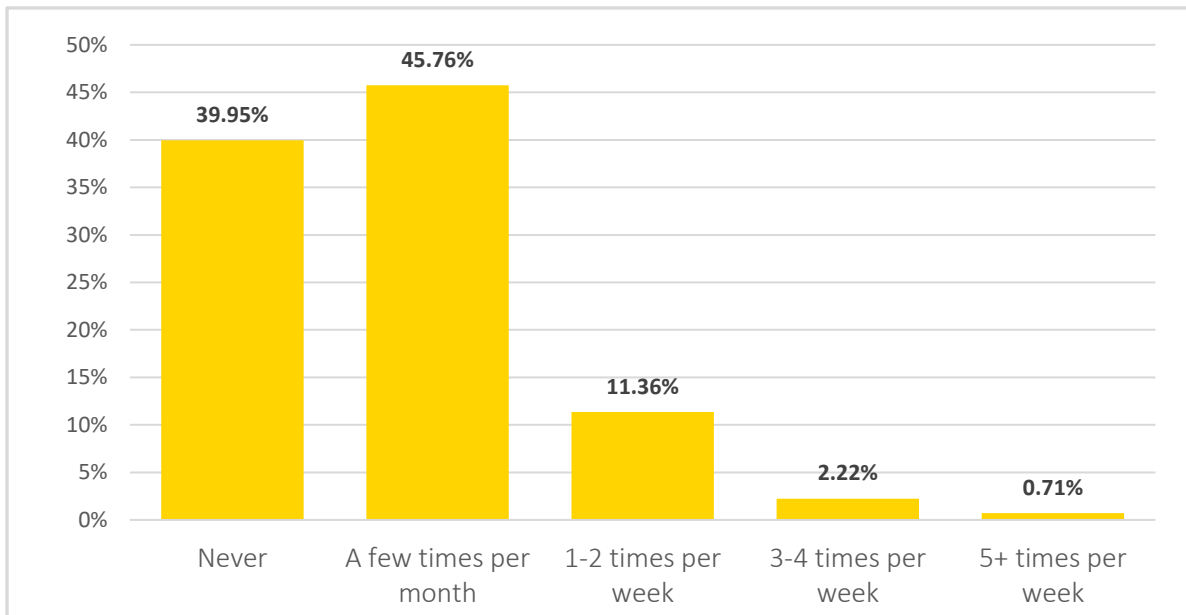


Figure 7-8. Monthly Levels Ordering Food for Delivery

### 7.3.4 Remote Healthcare

Most respondents reported never receiving remote or online healthcare services (Figure 7-9). 41.37% occasionally received remote or online treatment. As remote healthcare services became an alternative option to seeing a doctor during the pandemic, it is noteworthy that a sizeable portion of Dalhousie respondents still use this method occasionally.

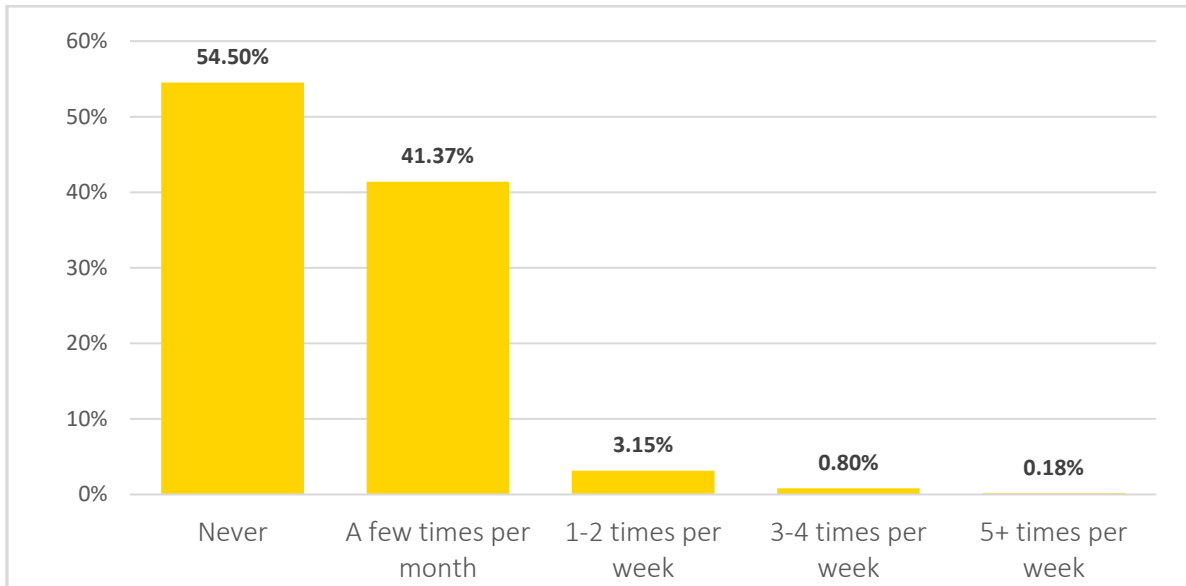


Figure 7-9. Monthly Levels Receiving Remote Healthcare Services

### 7.3.5 Other Activities

90.5% of respondents reported visiting other places in-person for other activities not listed previously (Figure 7-10). This high percentage shows that Dalhousie respondents engage in a multitude of activities that are not related to work, food, shopping, and remote healthcare.

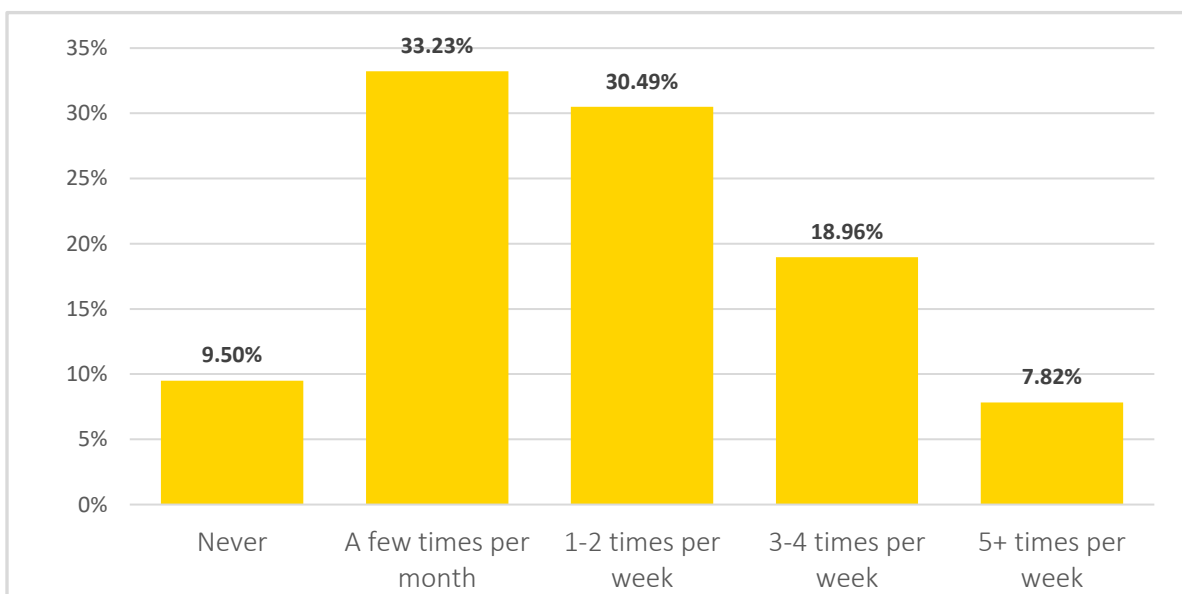


Figure 7-10. Monthly Levels Visiting Places In-Person for other Activities (recreational, religious etc.)

## 7.4. Carpooling Proposal

To determine the level of interest in carpooling on campus, survey respondents were asked if they would participate in a school-run carpooling program.

Most responded that they would not be interested in a carpooling program run by the university (Figure 7-11). 557 respondents (24.5%) were affirmative to the proposal. Respondents told us that they are not interested in carpooling as they lived too close, they already carpool or take public transit, or they need the flexibility of a personal vehicle to get through their daily schedule. Faculty and staff members were the least likely to participate in a Dalhousie carpooling program, as only 11.0% and 18.3% responded yes to the suggestion out of their respective groups.

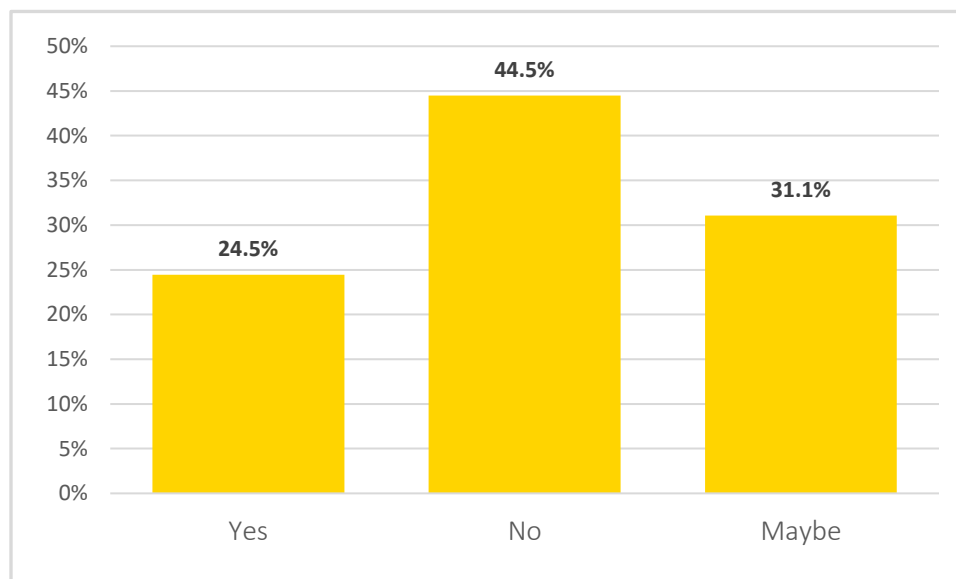


Figure 7-11. Responses to Utilizing a Hypothetical Dalhousie-run Carpooling Program

## 8. HaliTRAC Survey Comparison

The 2022 Halifax Travel Activity (HaliTRAC) Survey is an extension and update of the 2017 Nova Scotia Activity (NovaTRAC) Halifax Survey. Its goal is to understand how people in HRM travel and utilize Nova Scotia's transportation network. Results from the HaliTRAC survey demonstrate Halifax citizens' commuting habits and behaviours. Comparisons will be made between Dalhousie members and the citizens of Halifax to examine popular transportation modes and personal vehicle and bicycle ownership rates.

77.6% of HaliTRAC respondents stated they use their car as their primary means of transportation. This is compared to 31.6% of Dalhousie Commuter Survey respondents (Figure 8-11). 19.6% of HaliTRAC respondents walk, bike, or take public transit compared to 66.4% of Dalhousie Commuter Survey respondents (Figure 8-11). There also appears to be a disparity between Dalhousie University

respondents and the general public in regards to public transit, as only 5.6% of HaliTRAC respondents reported using it as their primary transportation method, compared to 30.0% of Commuter Survey respondents.

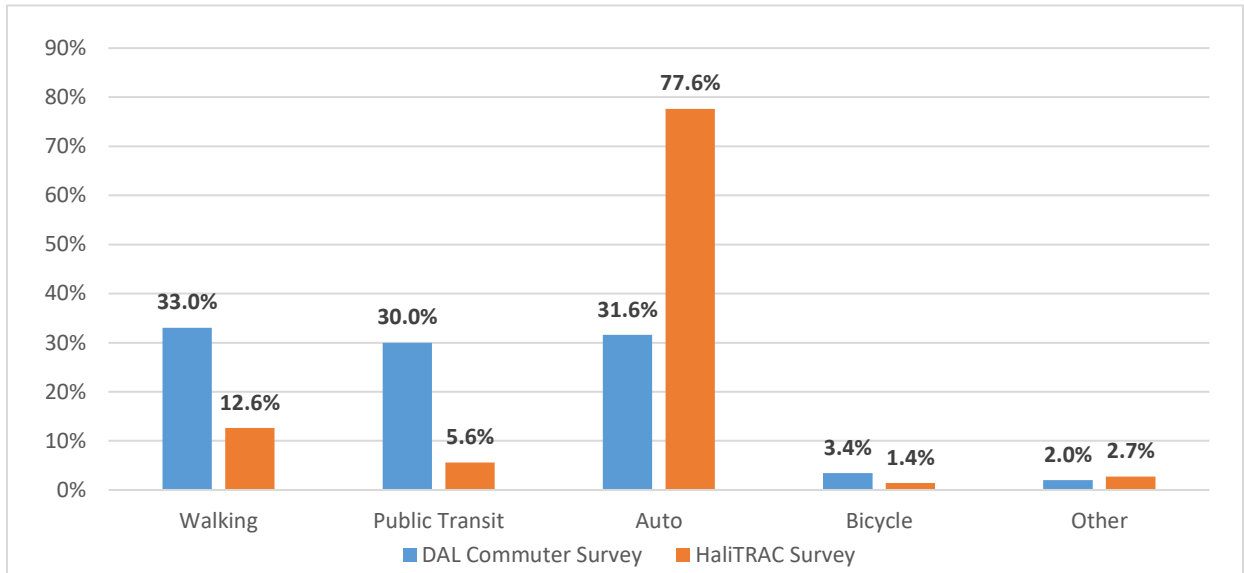


Figure 8-1. Primary Transportation Mode Choices: 2023-24 Commuter Survey vs. 2023 HaliTRAC Survey [15]

The HaliTRAC survey examined access to personal vehicles and bikes by asking respondents how many automobiles and bicycles they owned per household. 92.4% of HaliTRAC respondents owned at least one car, which is much higher than Dalhousie Commuter Survey respondents (70.5%) (Figure 8-12). Car owners in the HaliTRAC survey typically commute by car whilst Dalhousie car owners generally do not take their car as a primary transportation mode to campuses. 44.8% of Dalhousie car owners commute to campus by car while 84% of HaliTRAC commute with their vehicle. Household bicycle ownership was comparable between these groups; 43.9% of Dalhousie Commuter Survey respondents reported owning at least one bicycle, while HaliTRAC respondents reported 37.6% (Figure 8-13). In both cases, bicycle ridership for commuting purposes is low compared to ownership rates.

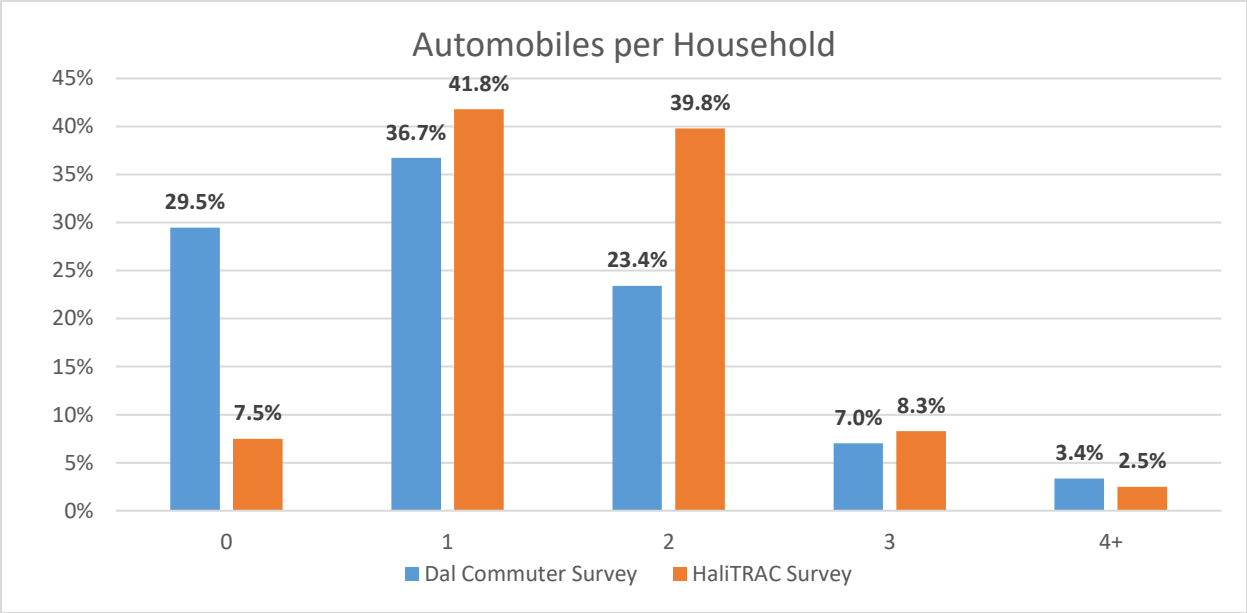


Figure 8-2. # of Automobiles per household: 2023-24 Commuter Survey vs. 2023 HaliTRAC Survey [15]

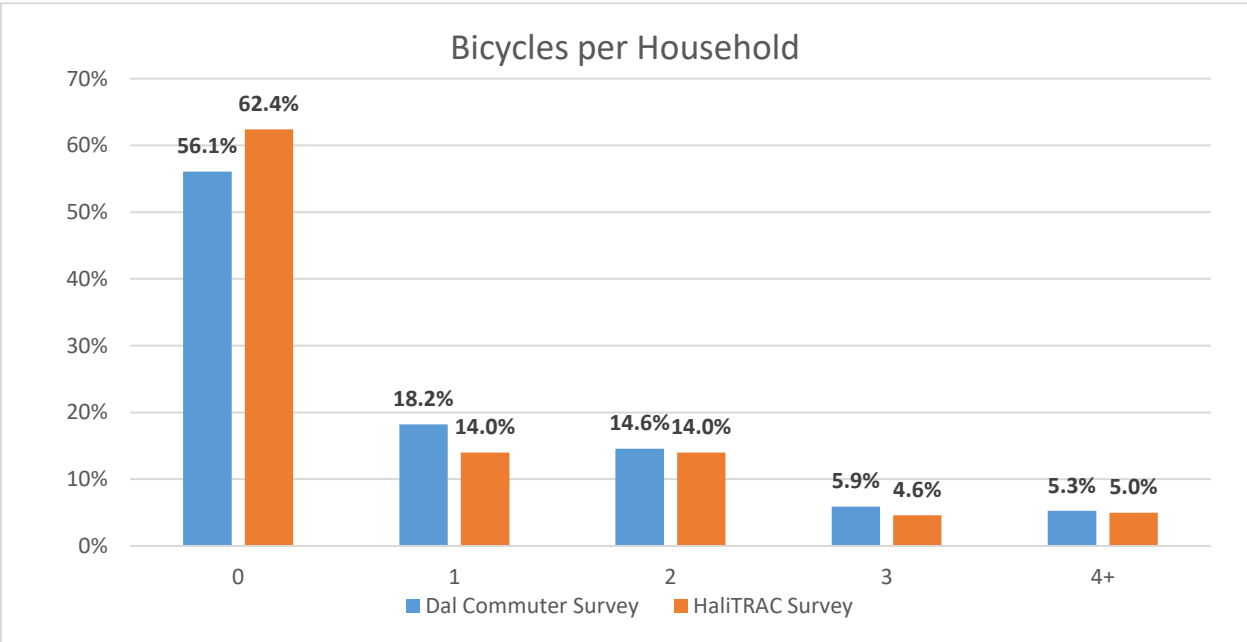


Figure 8-3. # of Bicycles per household: 2023-24 Commuter Survey vs. 2023 HaliTRAC Survey [15]

## 9. Sustainability

One of the Annual Transportation and Sustainability Survey's goals is to find data and analytics that can improve sustainability on its campuses and in the surrounding communities. To understand sustainability, it is important to gain information regarding participants' ideas, opinions, and understanding of sustainability. Respondents were asked about barriers that keep them from traveling more sustainably, their belief in the importance of sustainability for the university, the amount and quality of information about sustainability they receive from the university, and what the university could do to further engage the community in the future.

### 9.1. Sustainability on Campus

On campus, multiple initiatives have been launched to help Dalhousie University reach its transportation sustainability goals.

- The university created its Strategic Plan: Third Century Promise in 2021, which highlighted the goals and aspirations the institute wanted to achieve in the upcoming years [4].
- The Transportation Demand Management (TDM) Plan for Sustainable Commuting was updated in 2022, which focuses on mobility strategies that allow for sustainable transportation [11].
- Through partnership with SmartTrip, the Employee Transit Pass (XPass) was created to provide faculty and staff members with affordable public transportation options [7].
- The Dal Bike Centre offers maintenance services and free bike loans to Dalhousie University members, allowing people to use active transportation methods without any financial burden [16].

### 9.2. Sustainable travel barriers

Respondents were prompted to write the three main barriers that prevent them from choosing more sustainable transportation. It was determined which were the most common barriers through the analysis of multiple word and phrase frequency counters by using WordCounter and WriteWords.org.

**Time** – The most popular response to why survey takers do not choose a more sustainable transportation method was time. Respondents noted walking and taking public transportation would not be a time-effective commuting method. Those who live far away from campus who would require transferring between bus routes to get to Dalhousie state that transferring takes a lot of time out of their day, especially if either bus is late. Some explained that carpooling was also not a viable option due to the time it takes to coordinate.

**Money/Cost** – The second most popular response was the cost of traveling sustainability. Some who currently have a car explained that EVs are too expensive for them to purchase. Others mentioned purchasing a transit pass would not be cost-effective as they already own a vehicle. The cost of living was also mentioned, respondents explained how expensive it is to live in Halifax, especially on the peninsula near campus. The expense pushes those to live further away from the city and have longer commutes.

**Lack of Public Transit** – A lot of respondents talked about public transit, and most remarked on the inefficient and unreliable service of Halifax Transit. Respondents said they have opted not to take public transit after having poor experiences commuting via buses. Others labelled the crowded and uncomfortable buses during peak hours as reasons why they do not take public transit. Some stated that there is no public transit service available in their area. This was most common for Truro respondents, as there are no public transit operators in that area. Rural residents commuting to Halifax also stated they did not have public transit servicing their area.

**Distance** – Most stating that time is a barrier for them, also mentioned distance as a barrier. Respondents reported that their home location was too far away from Dalhousie for a sustainable alternative transportation method to be viable for them. Most noted not being able to walk or bike due to the distance. Some commented that they have too many things to bring between campus and home to be able to use active transportation.

**Lack of Bike Infrastructure**– Some respondents believe there is a wide range of bike infrastructure lacking around Dalhousie and Halifax. Many respondents said that they avoid using active transportation because they perceive Halifax’s streets as being unsafe for cyclists. Traffic can be unaccommodating to bikes and there are limited bike lanes. Of the bike lanes that exist on campus, many are not separated from traffic, allowing cars to turn into and park in them. Furthermore, bike lanes and networks are disconnected. Other respondents mentioned the lack of covered bike parking and bike maintenance tools on campus.

**Weather** – Respondents mentioned seasonal and daily weather patterns changing how they commute. Some state they rely on driving when the weather is poor. Some respondents said winter weather is a barrier to taking public transit. Others mentioned walking in the snow is challenging when sidewalks are not clear. Some stated they would not want to walk or bike while it is raining.

**Convenience** – Those who normally drive stated that there is not a feasible, sustainable transportation method that gives them the convenience that their car does. Some believe that giving up their vehicle would make their commute more time-consuming, especially those that have multiple activities or errands to run during the day.

### 9.3. Sustainability Importance



Most respondents (84.3%) agreed that sustainability and environmental responsibility should be a campus-wide goal (Figure 9-1). However, this is a conservative estimate, as there was an error in the survey where respondents were not given the option to choose 'strongly agree' and instead there were two 'strongly disagree' answers (See Appendix A.3.). Interestingly, there is a slight disparity between those who agree sustainability should be a campus-wide goal (84.3%) and those who actively use a sustainable transportation mode as their primary commuting mode (66.4%). It appears while most individuals agree with sustainability goals and actions by the university, they are not willing to change their own transportation choices.

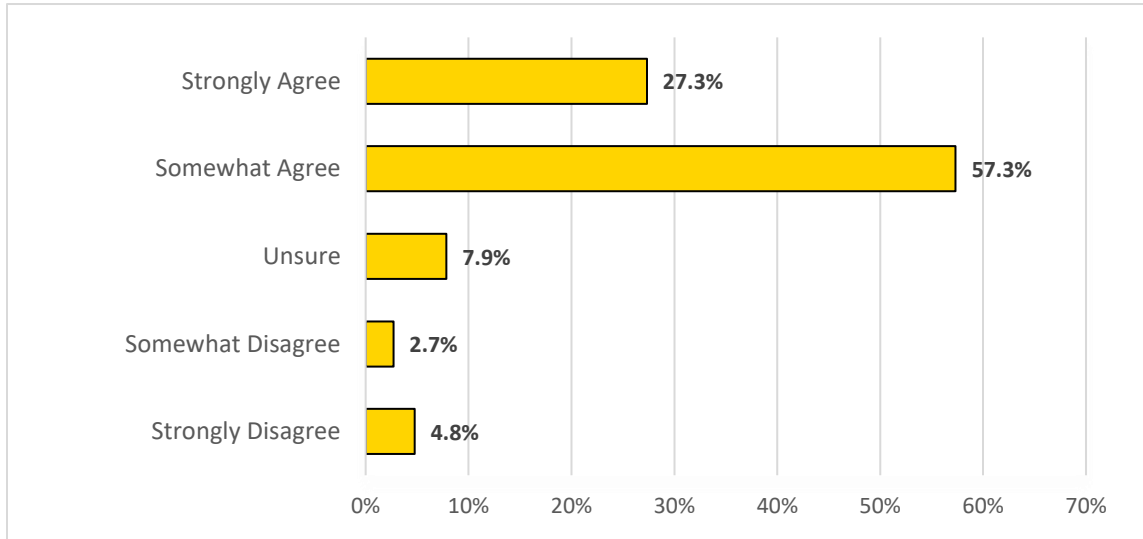


Figure 9-1. Importance of Sustainability and Environmental Responsibility being a Campus Wide Goal (n = 2177 responses, 558 non-responses)

#### 9.4. Sustainability Communication and Articulation

There is a very even distribution between those who agree (35.65%), disagree (30.95%), and were unsure (33.41%) if they receive regular communication from Dalhousie and the Office of Sustainability regarding sustainability events, issues, and campus initiatives (Figure 9-2). The difference between the amount that somewhat agree and strongly agree shows the lack of confidence in respondents.

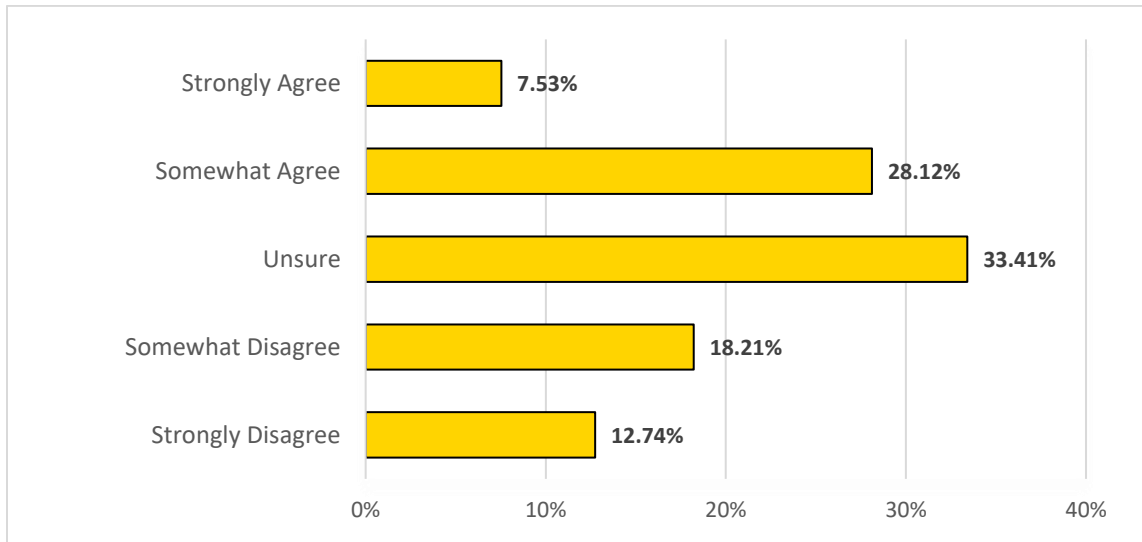


Figure 9-2. Respondents' perspective on if they receive regular communication about sustainability issues and campus initiatives (n = 2230 responses, 505 non-responses)

Respondents were asked whether they agreed or disagreed with Dalhousie's Sustainability Targets and Initiatives. 68.27% did not agree or were unsure if they knew what direction and goals Dalhousie was attempting to achieve regarding sustainability (Figure 9-3).

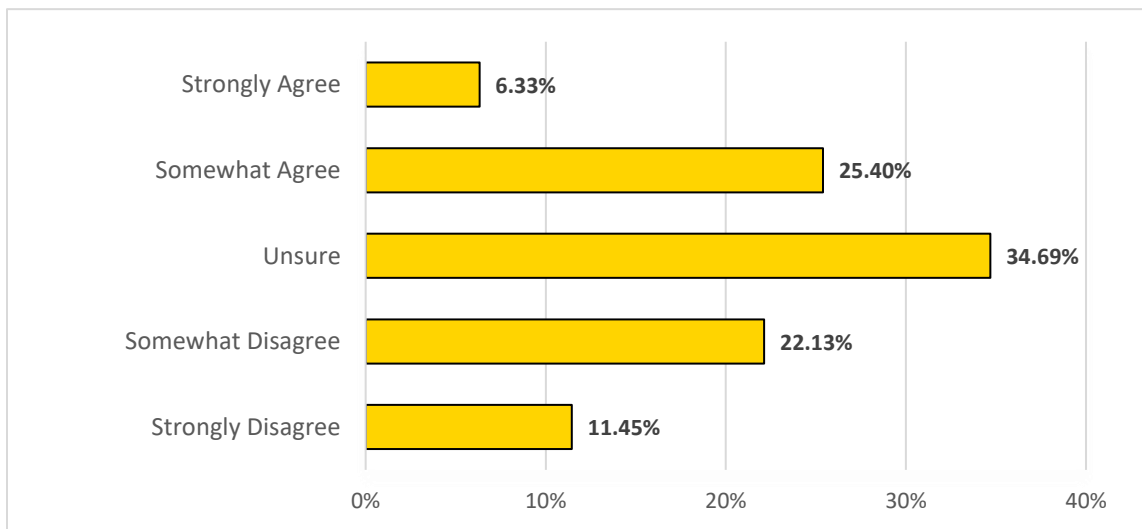


Figure 9-3. Respondents view on Dalhousie's Articulation of its Sustainability Targets and Initiatives (n = 2228 responses, 507 non-responses)

## 9.5. Crowdsourcing Ideas

To gain ideas from the Dalhousie community, the Commuter Survey prompted respondents to answer an open-ended question: what could Dalhousie do more of to engage campus and community members in sustainability action?



for people who do not bus as often. Respondents also called on Dalhousie University to work with Halifax Transit to enhance bus transportation services. Some respondents from Truro mentioned the complete lack of a public transit system and called for their area to start receiving access.

There were mixed answers regarding parking at/around Dalhousie. Some encouraged Dalhousie University to sell fewer parking passes and disincentivize automobile use, while others described the lack of parking spaces as a challenge when commuting via car. Some respondents mentioned that they would not cancel their parking pass as they would not receive financial compensation for canceling it during the year.

## 10. Conclusion

The 2023-24 Dalhousie Commuter Survey received 2,735 responses, having the fourth highest response rate. Through this engagement, data has revealed the commuting habits of Dalhousie University's students, staff, and faculty members. This data shows the transportation-related behaviours of Dalhousie University community members. This study also asked Dalhousie respondents about their views on the university's ecological actions and goals. Similar to last year, Dalhousie showed commitment to the United Nations Sustainable Development Goals (SDGs), allowing the institution to rank highly alongside other universities around the world.

Conclusions from the 2023-2024 survey:

- The most popular primary commute mode for the 2023-24 year was walking, followed by taking public transit.
- Since 2011, bicycling has become less popular as a commuting method. Students, who make up a large portion of the respondents, rarely biked as a primary means of transportation compared to faculty and staff members. Respondents described barriers affecting their decision to not cycle; they perceive cycling as unsafe in Halifax and believe the university and the city lack bike lanes and proper infrastructure. From here, there is the opportunity for the Office of Sustainability to collaborate with the Halifax Regional Municipality on creating more bike-focused infrastructure.
- Students are on average living closer to their respective campuses, showing that an increase of in-person activities and a decrease in remote learning is taking place.
- Compared to the HaliTRAC Survey, Dalhousie Commuter Survey respondents do not use cars as often as a primary commute option. HaliTRAC respondents who own a car are more likely to use it as their primary commute method compared to Dalhousie Commuter Survey respondents.
- Most Dalhousie members travel between Halifax campuses at some point during the year. The most common method of travel between Halifax campuses is walking. Not many Dalhousie

members travel between Halifax campuses and the Agricultural campus in Truro. Those who do make this trip are most likely to drive alone.

- Respondents attending/working at the Agricultural campus are more likely to commute via private vehicle. This is most likely due to these respondents living much further away on average than those who attend a Halifax campus. It could also be due to the lack of a traditional public transportation system in Truro.
- Students are more likely to use sustainable transportation methods such as walking and public transportation, whereas faculty and staff are more likely to drive their cars. This brings up the possibility of using students as the heart of sustainability efforts, showcasing them as an example that the rest of Dalhousie and Halifax should follow.
- Dalhousie members' monthly activities vary between groups and individuals. Their overall responses show a habit change in regard to living post-pandemic, as more people are engaging in in-person activities. Members are more likely to commute to work than to work from home, more likely to go shopping in person than order items online for pick-up or delivery, and are more likely to go out to a restaurant than to order delivery.
- The biggest barriers that keep respondents from traveling more sustainability are (in order): time, money, lack of adequate public transit, distance, lack of bike infrastructure, weather, and convenience.
- While most respondents agree that sustainability should be a priority for the university, not everyone receives regular communication about sustainability issues or is not clear about Dalhousie's current sustainability goals and initiatives.
- Suggestions provided by survey respondents need to be thoroughly considered and potentially adopted into Dalhousie's sustainability framework. Further engagement of Dalhousie members and the surrounding community should occur to brainstorm and build sustainable futures together.

The Annual Commuter Survey can help Dalhousie and the Office of Sustainability work towards long-term sustainability goals. By providing a public report examining commuting patterns, sustainability perspectives, and transportation disparities, the university and the greater community can access information that can help inform decision-making. Engagement of the surrounding community is crucial, as widening the scope for sustainability action will allow more people to become involved and lead to more conversations regarding the topic.

# Appendix. Summary of 2023 Survey Data

## A.1. Survey Questions

### Contents:

1. Which of these groups do you currently belong to? [Although you may belong to more than one group, please choose just one group and answer the rest of the survey from the perspective of that group.]
2. Are you a full-time or part-time staff, faculty, or student?
3. What is your primary department and/or faculty?
4. What is your primary campus or work/study location?
5. When you are engaged with campus activities such as work, class, studying, and/or research, are you commuting to the Halifax or Truro campuses on average:
6. On average how many hours per day do you use your electronic devices for telework purposes (e.g. working/class/studying/research from home)?
7. If you are coming to campus, what is your primary mode of transportation (most or all of the time – over 70%) for your commute to campus throughout the year?
8. What is your secondary mode of transportation (less than 30% of the time) for your daily commute to campus?
9. If your primary mode is automobile (drive alone or passenger), where do you generally park your car?
10. How many minutes, on average, does it take to get from your home to Dalhousie when you use your primary mode of transportation? Please enter numbers only.
11. At what time, on most days, do you arrive at Dalhousie? Please identify the time to the nearest hour.
12. At what time, on average, do you leave Dalhousie? Please identify the time to the nearest hour.
13. On a weekly basis, how many times do you perform each of the following activities?
  - a. Levels Travelling to work
  - b. Levels Working from home
  - c. Levels Shopping in store
  - d. Levels Shopping online for pickup at the store
  - e. Levels Shopping online for delivery
  - f. Levels Eating a meal at a restaurant/pub
  - g. Levels Ordering food for delivery
  - h. Levels Taking healthcare service remotely (e.g. over phone, video call)
  - i. Levels Visiting places in-person for other activities (e.g. recreational/religious)
  - j. Levels Other
14. Would you participate in a carpool program, administered by Dalhousie, that offers suggestions for carpool buddies based on your location?
15. What are your top three barriers preventing you from choosing more sustainable transportation options?

16. Which of the following best describes how often, if at all, you travel between the Halifax campuses? (Carleton, Sexton, and Studley)
17. What is your primary means of travel between Halifax campuses?
18. What is your primary means of travel between the Halifax and Truro campuses?
19. And which of the following best describes how often, if at all, you travel between the Halifax and Truro campuses?
20. How many bicycles does your household own and use regularly?
21. How many vehicles are available for regular use by members of your household?
22. I receive regular communications (via various channels such as Instagram, webpage, Dal News, etc.) from Dalhousie's Office of Sustainability about sustainability-related issues and campus initiatives.
23. Dalhousie's sustainability targets and initiatives are clearly articulated to the campus community.
24. It is important to me that Sustainability and Environmental Responsibility should be a campus-wide goal.
25. What, if anything, could Dalhousie do more of to engage campus and community members in sustainability action?
26. What is your age?
27. What is your gender?
28. What is your annual household income?
29. What is the postal code of your local residence (that is, the address from which you commute to Dalhousie. If you don't commute the postal code that you remote work or study from). Please provide it in six digit UPPERCASE format without a space. (that is, B3B1B9)
30. How did you hear about this survey? (Choose all that apply)

## A.2. Results

Question	n (total 2735)	% of total
<b>1. Which of these groups do you currently belong to?</b>		
Students	1754	64.13%
Faculty	201	7.35%
Staff	517	18.90%
Alumni	6	0.22%
Other	13	0.48%
Total	2491	91.08%
Not answered	244	8.92%
<b>2. Are you a full-time or part time staff, faculty, or student?</b>		
Full-time	2339	85.52%
Part-time	114	4.17%
Other (please specify):	32	1.17%
Total	2485	90.86%
Not answered	250	9.14%
<b>3. What is your primary department and/or faculty?</b>		
Ancillary Services	12	0.44%
Athletics and Recreational Services	7	0.26%
College of Continuing Education	9	0.33%
College of Sustainability	23	0.84%
Communications and Marketing	11	0.4%
Dalhousie Art Gallery & Arts Centre	3	0.11%
Dalhousie Libraries	20	0.73%
Environmental Health and Safety	7	0.26%
Facilities Management	56	2.05%
Faculty of Agriculture	126	4.61%
Faculty of Architecture and Planning	52	1.9%
Faculty of Arts and Social Sciences	204	7.46%
Faculty of Computer Science	222	8.12%
Faculty of Dentistry	26	0.95%
Faculty of Engineering	239	8.74%
Faculty of Graduate Studies	78	2.85%
Faculty of Health	243	8.88%
Faculty of Law	58	2.12%
Faculty of Management	116	4.24%
Faculty of Medicine	233	8.52%
Faculty of Science	529	19.34%
Financial Services	9	0.33%
Human Resources	22	0.8%
Information Technology Services	17	0.62%
Legal & Internal Audit Services	4	0.15%
Office of Advancement	14	0.51%
President's Office & Provost's Office	12	0.44%



Registrar's Office	16	0.59%
Research Services	26	0.95%
Student Services	28	1.02%
Prefer not to say	12	0.44%
Other	57	2.08%
Total	2491	91.08%
Not answered	244	8.92%

4. What is your primary campus or work/study location?

Studley	1447	52.91%
Carleton	326	11.92%
Sexton	297	10.86%
Agricultural	148	5.41%
Home Location (off campus remote work/study)	112	4.1%
Health facilities (off campus)	92	3.36%
Other (Please specify)	68	2.49%
Total	2490	91.04%
Not answered	245	8.96%

5. When you are engaged with campus activities such as work, class, studying, and/or research, are you commuting to the Halifax or Agricultural campuses on average.

All of the time (with perhaps a few off-campus sessions)	1276	46.65%
Most of the time	597	21.83%
About one-half of the time	263	9.62%
Less than one-half of the time	205	7.5%
None of the time (100% remote)	89	3.25%
None of the time (Study/Research at a health care)	52	1.9%
Total	2482	90.75%
Not answered	253	9.25%

6. On average how many hours per day do you use your electronic devices for telework purposes (e.g. working/class/studying/research from home)?

-4 – 6	1203	43.99%
7 – 17	978	35.76%
18 – 28	51	1.86%
29 – 39	27	0.99%
40 – 50	29	1.06%
51 – 61	7	0.26%
62 – 72	2	0.07%
73 – 83	4	0.15%
84 – 94	3	0.11%
95 – 105	2	0.07%
Total	2306	84.31%
Not answered	429	15.69%

7. If you are coming to campus, what is your primary mode of transportation (most or all of the time – over 70%) for your commute to campus throughout the year?

Automobile - Drive alone	521	19.05%
Automobile – Am the driver, usually or always with passengers	117	4.28%
Automobile – Am a Passenger (including carpooling)	89	3.25%
Public transit (including ferry services)	690	25.23%
Van Pool	1	0.04%
Bicycle	79	2.89%
Walk	761	27.87%
Skateboard/Longboard	4	0.15%
Scooter	5	0.18%
No primary mode of transportation	22	0.8%
Other (for example, Motorcycle)	14	0.51%
Total	2303	84.2%
Not answered	432	15.8%

8. What is your secondary mode of transportation (less than 30% of the time) for your daily commute to campus?

Automobile - Drive alone	394	14.41%
Automobile – Am the driver, usually or always with passengers	93	3.4%
Automobile – Am a Passenger (including carpooling)	325	11.88%
Public transit (including ferry services)	668	24.42%
Van Pool	5	0.18%
Bicycle	111	4.06%
Walk	575	21.02%
Skateboard/Longboard	10	0.37%
Scooter	9	0.33%
Other (for example, Motorcycle)	39	1.43%
Total	2229	81.5%
Not answered	506	18.5%

9. If your primary mode is automobile (drive alone or passenger), where do you generally park your car?

Park in Dalhousie lots	514	18.79%
Using on-street metered parking	114	4.17%
Using on-street free parking	156	5.7%
Parking in Halifax Regional Municipality carpool locations	17	0.62%
Parking spot in a residential driveway	24	0.88%
Not applicable (i.e. automobile is not my primary mode)	1162	42.49%
Other	84	3.07%
Total	2071	75.72%
Not answered	664	24.28%

10. How many minutes, on average, does it take to get from your home to Dalhousie when you use your primary mode of transportation?

Maximum		
0 – 35	1372	50.16%
36 – 71	622	22.74%
72 – 107	164	6%
108 – 143	44	1.61%

144 – 179	4	0.15%
180 – 215	7	0.26%
216 – 251	1	0.04%
288 – 323	1	0.04%
324 – 359	1	0.04%
Total	2216	81.02%
Not answered	519	18.98%

Minimum		
<hr/>		
0 – 29	1674	61.21%
30 – 59	451	16.49%
60 – 89	73	2.67%
90 – 119	12	0.44%
120 – 149	4	0.15%
150 – 179	2	0.07%
180 – 209	1	0.04%
240 – 269	1	0.04%
270 – 299	1	0.04%
Total	2219	81.13%
Not Answered	519	18.87%

11. At what time, on most days, do you arrive at Dalhousie? Please identify the time to the nearest hour.

<hr/>		
01:00	7	0.26%
02:00	12	0.44%
03:00	6	0.22%
04:00	3	0.11%
05:00	3	0.11%
06:00	25	0.91%
07:00	137	5.01%
08:00	653	23.88%
09:00	651	23.8%
10:00	369	13.49%
11:00	152	5.56%
12:00	82	3%
13:00	59	2.16%
14:00	34	1.24%
15:00	5	0.18%
16:00	8	0.29%
17:00	4	0.15%
18:00	4	0.15%
19:00	1	0.04%
20:00	1	0.04%
21:00	1	0.04%
22:00	1	0.04%
23:00	1	0.04%
Total	2219	81.13%
Not answered	516	18.87%

12. At what time, on average, do you leave Dalhousie? Please identify the time to the nearest hour

01:00	6	0.22%
02:00	8	0.29%
03:00	35	1.28%
04:00	104	3.8%
05:00	103	3.77%
06:00	53	1.94%
07:00	25	0.91%
08:00	13	0.48%
09:00	3	0.11%
10:00	7	0.26%
11:00	10	0.37%
12:00	39	1.43%
13:00	38	1.39%
14:00	98	3.58%
15:00	200	7.31%
16:00	449	16.42%
17:00	465	17%
18:00	273	9.98%
19:00	103	3.77%
20:00	77	2.82%
21:00	37	1.35%
22:00	28	1.02%
23:00	28	1.02%
24:00	9	0.33%
Total	2211	80.84%
Not answered	524	19.16%

13. On a weekly basis, how many times do you perform each of the following activities?

Levels Travelling to work		
Never	462	16.89%
A few times per month	130	4.75%
1-2 times per week	402	14.7%
3-4 times per week	600	21.94%
5 or more times per week	670	24.5%
Total	2264	82.78%
Not answered	471	17.22%

Levels Working from home		
Never	623	22.78%
A few times per month	405	14.81%
1-2 times per week	512	18.72%
3-4 times per week	392	14.33%
5 or more times per week	319	11.66%
Total	2251	82.3%
Not Answered	484	17.7%

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Levels Shopping in store

Never	79	2.89%
A few times per month	851	31.12%
1-2 times per week	1054	38.54%
3-4 times per week	218	7.97%
5 or more times per week	52	1.9%
Total	2254	82.41%
Not Answered	481	17.59%

---

Levels Shopping online for pickup at the store

Never	1451	53.05%
A few times per month	635	23.22%
1-2 times per week	124	4.53%
3-4 times per week	25	0.91%
5 or more times per week	9	0.33%
Total	2244	82.05%
Not Answered	491	17.95%

---

Levels Shopping online for delivery

Never	708	25.89%
A few times per month	1186	43.36%
1-2 times per week	274	10.02%
3-4 times per week	65	2.38%
5 or more times per week	20	0.73%
Total	2253	82.38%
Not Answered	482	17.62%

---

Levels eating a meal at a restaurant/pub

Never	295	10.79%
A few times per month	1490	54.48%
1-2 times per week	416	15.21%
3-4 times per week	55	2.01%
5 or more times per week	8	0.29%
Total	2264	82.78%
Not Answered	471	17.22%

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Levels Ordering food for delivery

Never	900	32.91%
A few times per month	1031	37.7%
1-2 times per week	256	9.36%
3-4 times per week	50	1.83%
5 or more times per week	16	0.59%
Total	2253	82.38%
Not Answered	482	17.62%

Levels Taking healthcare service remotely (e.g. over phone, video call)

Never	1229	44.94%
A few times per month	933	34.11%
1-2 times per week	71	2.6%
3-4 times per week	18	0.66%
5 or more times per week	4	0.15%
Total	2255	82.45%
Not Answered	480	17.55%

Levels Visiting places in-person for other activities (e.g. recreational/religious)

Never	215	7.86%
A few times per month	752	27.5%
1-2 times per week	690	25.23%
3-4 times per week	429	15.69%
5 or more times per week	177	6.47%
Total	2263	82.74%
Not Answered	472	17.26%

Levels Other

Never	608	22.23%
A few times per month	268	9.8%
1-2 times per week	172	6.29%
3-4 times per week	49	1.79%
5 or more times per week	70	2.56%
Total	1167	42.67%
Not Answered	1568	57.33%

14. Would you participate in a carpool program, administered by Dalhousie, that offers suggestions for carpool buddies based on your location?

Yes	557	20.37%
No	1013	37.04%
Maybe	708	25.89%
Total	2278	83.29%
Not answered	457	16.71%

16. Which of the following best describes how often, if at all, you travel between the Halifax campuses? (Carleton, Sexton, and Studley).

Daily	243	8.88%
3-4 times a week	257	9.4%
1-2 times a week	233	8.52%
A few times a month	262	9.58%
Once a month	122	4.46%
A few times a year	454	16.6%
Never	705	25.78%
Total	2276	83.22%
Not answered	459	16.78%

17. What is your primary means of travel between Halifax campuses?

Walk	971	35.5%
Bicycle	51	1.86%
Bus	327	11.96%
Private car	129	4.72%
Taxi	12	0.44%
Scooter	6	0.22%
Not applicable	62	2.27%
Other (please specify):	17	0.62%
Total	1575	57.59%
Not answered	1160	42.41%

18. What is your primary means of travel between the Halifax and Truro campuses?

Bus	119	4.35%
Carpool	85	3.11%
Drive alone	189	6.91%
Van Pool	11	0.4%
Train	2	0.07%
Taxi	6	0.22%
Not applicable	1859	67.97%
Total	2271	83.03%
Not answered	464	16.97%

19. And which of the following best describes how often, if at all, you travel between the Halifax and Truro campuses?

Daily	14	0.51%
3-4 times a week	21	0.77%
1-2 times a week	31	1.13%
A few times a month	37	1.35%
Once a month	21	0.77%
A few times a year	116	4.24%
Rarely	181	6.62%
Never	1835	67.09%
Total	2256	82.49%
Not answered	479	17.51%

20. How many bicycles does your household own and use regularly?

0 – 2	1977	72.29%
3 – 5	231	8.45%
6 – 8	14	0.51%
9 – 11	1	0.04%
15 – 17	1	0.04%
21 – 23	1	0.04%
Total	2225	81.35%
Not answered	510	18.65%

21. How many vehicles are available for regular use by members of your household?

0	658	24.06%
1	820	29.98%
2	523	19.12%
3	157	5.74%
4	59	2.16%
5	11	0.4%
6	3	0.11%
7	1	0.04%
8	1	0.04%
Total	2233	81.65%
Not answered	502	18.35%

22. I receive regular communications (via various channels sch as Instagram, webpage, Dal News, etc.) from Dalhousie's Office of Sustainability about sustainability-related issues and campus initiatives.

Strongly disagree	284	10.38%
Somewhat disagree	406	14.84%
Unsure	745	27.24%
Somewhat agree	627	22.93%
Strongly agree	168	6.14%
Total	2230	81.54%
Not answered	505	18.46%

23. Dalhousie's sustainability targets and initiatives are clearly articulated to the campus community

Strongly disagree	255	9.32%
Somewhat disagree	493	18.03%
Unsure	773	28.26%
Somewhat agree	566	20.69%
Strongly agree	141	5.16%
Total	2228	81.46%
Not answered	507	18.54%

24. It is important to me that Sustainability and Environmental Responsibility should be a campus-wide goal  
\* - Option Typo: should be 'strongly agree' instead of 'strongly disagree'

Strongly disagree	104	3.8%
Somewhat disagree	59	2.16%
Unsure	171	6.25%
Somewhat agree	1248	45.63%
Strongly disagree*	595	21.76%
Total	2177	79.6%
Not answered	558	20.4%

26. What is your age?

15-19	335	12.25%
20-24	774	28.3%



25-34	481	17.59%
35-44	260	9.51%
45-54	213	7.79%
55-64	122	4.46%
65 or above	29	1.06%
Prefer not to say	27	0.99%
Total	2241	81.94%
Not answered	494	18.06%

27. What is your gender? OPTIONAL

Man	626	22.89%
Woman	1438	52.58%
Non-binary	49	1.79%
Prefer not to say/Not sure	81	2.96%
Another gender not listed here (Optional, please specify)	8	0.29%
Total	2202	80.51%
Not answered	533	19.49%

28. What is your annual household income? OPTIONAL

Less than \$10,000	324	11.95%
\$10,000-19,999	213	7.79%
\$20,000-39,999	198	7.24%
\$40,000-59,999	164	6%
\$60,000-79,999	157	5.74%
\$80,000-99,999	118	4.31%
\$100,000 or more	447	16.34%
Prefer not to say	467	17.07%
Total	2088	76.34%
Not answered	647	23.66%

31. How did you hear about this survey? (Choose all that apply)

\* - Percentages are relative to those who answered

Faculty/departmental administrator	110	7.86%
Office of sustainability website	8	0.57%
LCD screen	10	0.71%
Word of mouth	12	0.86%
Direct email	1058	75.63%
"Today at Dal"	65	4.65%
"My Dal announcement"	42	3%
Student society	14	1%
Departmental newsletter	33	2.36%
DalMobile	13	0.93%
Other	34	2.43%
Total	1399	100%
Not answered	1431	52.32%

### A.3. Data Cleaning, Errors, and Extent

#### Data Cleaning :

Respondents mistakenly reported their departure times in the 'AM' instead of 'PM'. For example, a range of answers claimed they would leave the Dalhousie campus between 1:00 am and 6:00 am. These answers were adjusted respectively to PM times.

#### Question Typo :

Question 24 – It is important to me that Sustainability and Environmental Responsibility should be a campus wide goal.

There are two 'strongly disagree' options and no 'strongly agree' option. A lot of respondents inputted text noting this error. Respondents who were going to respond 'strongly agree' either decided to play it safe and selected 'somewhat agree' or they selected the 'strongly disagree' answer next to the 'somewhat agree' answer, either assuming that this error would be fixed post-survey, or they did not notice. There is also a possibility that those trying to respond with 'strongly disagree' selected the one next to 'somewhat agree'. In this case, their response would have also been edited to 'strongly agree'.

#### Extent :

Distance of Respondents – The proximity of respondents to their respective campuses was calculated via a network analysis on ArcGIS using respondents' postal codes. To acquire a proper average, certain postal codes were ignored as these were far enough away that it was assumed the respondent worked remotely or provided the postal code of an alternative address. Across the board, all postal codes that did not start with B## ### (ergo, not Nova Scotia) were thrown out. Additionally, postal codes over 150 kilometers from the respondent's most frequented campus were also dismissed for data cleaning purposes. The following postal codes listed are not used in the study; however, it is plausible that the respondent does commute from that address to campus.

- Amherst, NS -> Studley Campus (~200 km)
- Liverpool, NS -> Truro Campus (~230 km)
- New Germany, NS -> Truro Campus (~220 km)
- Aylesford, NS -> Truro Campus (~180 km)
- Barton, NS -> Carleton Campus (~260 km)
- Antigonish, NS -> Carleton Campus (~220 km)
- Trenton, NS -> Sexton Campus (~160 km)

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