



Travel Behaviour of Dalhousie University Commuters

***An Analysis of Dalhousie Sustainability Survey 2014 and
Comparison to 2009, 2010, 2011, 2012 and 2013
Commuter Survey Analyses***

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1. INTRODUCTION

Since 2009, the Office of Sustainability at Dalhousie University has been conducting an online anonymous sustainability survey. This survey is distributed among students, faculty members and staff, and is designed to understand the travel behaviour of the Dalhousie community. The questionnaire is designed and analysis is performed using the strategy outlined in the University Transportation Demand Management Plan (2011). This report summarizes and analyzes the data from the 2014 Dalhousie University Sustainability Survey and compares results to previously conducted surveys (2009-2013).

1.1 Sustainable Transportation at Dalhousie University

Dalhousie University developed a Sustainability Operation Plan in 2011 to promote and support sustainable initiatives across Dalhousie campuses (Carleton, Sexton, Studley, and Agricultural). Several aspects of sustainability are considered in this plan such as: travel behaviour, transportation infrastructure, energy consumption, etc. Upgrades to bicycle facilities, promoting active transportation and a transportation demand management program are some of the major transportation related strategies of the Dalhousie Sustainability Operation Plan. A comprehensive Transportation Demand Management (TDM) plan was developed in 2011 to manage Dalhousie's transportation infrastructure and travel behaviour outlined in the Sustainability Operation Plan. The TDM plan's mission is to *"promote a balanced, multi-modal transportation system that promotes choices for students, faculty and staff and influences the demand for a limited transportation supply. Transportation Demand Management (TDM) will provide information and education about travel options and offer incentives and programs that discourage Single Occupant Vehicle (SOV) travel. TDM is an essential component of an overall sustainable transportation solution for the campus"* (IBI Group in association with UrbanTrans, 2011, p. 2).

1.2 Previous Surveys

The Dalhousie Sustainability Survey has been conducted annually since 2009. Every year a new set of questions are added or modified in the questionnaire to improve the quality of broad sustainability and travel behaviour analysis. A series of consistent questions are repeated each year to enable a trend analysis and better identify relationships between numerous travel behaviour components. This section provides a summary of previous Dalhousie Sustainability Surveys (2009-2013).

1.2.1 2009 Survey

The Dalhousie Sustainability Survey was first conducted by Dalhousie University in 2009. Respondents included students, faculty members and staff. The majority of the respondents lived within 5 kilometres of Dalhousie Halifax campuses, where commuting time was less than 20 minutes. Walking and travel by car were the first and second most popular commuting modes among all of the 2009 survey respondents. Students walked or used public transportation to commute to the Dalhousie campuses, whereas faculty members and staff traveled more by car.

1.2.2 2010 Survey

In 2010, traveling by car was the most popular commuting mode among all survey respondents, with walking being the second most popular. Similar to the 2009 survey, faculty members and staff commuted more by car to Dalhousie University compared to students. Students more commonly commuted by walking to Dalhousie University. Unlike 2009, the majority of respondents lived within 2 kilometres of Dalhousie Halifax Campuses. However, similar to 2009, the majority of commuting time was less than 20 minutes.

1.2.3 2011 Survey

Traveling by car and walking were the two most popular primary commuting modes among all of the 2011 survey respondents. A high percentage of students lived close to the Dalhousie Campuses on the Halifax Peninsula, whereas faculty members and staff lived more in suburban areas and farther from the city centre. The majority of the respondents traveled less than 10 minutes to and from Dalhousie campuses. Public transportation and walking were the two most popular secondary commuting modes. The majority of students walked to and from Dalhousie campuses, whereas faculty members and staff traveled more by car to and from Dalhousie University. Around half of the survey respondents were interested in the carpool initiative, whereas more than 60% of respondents owned a car. Over two thirds of survey respondents agreed that a University shuttle bus was desired for commuting between Dalhousie campuses. Finally, the majority of the survey respondents were interested in having a summer bus pass.

1.2.4 2012 Survey

The 2012 Dalhousie Sustainability Survey was the first to be distributed among students, faculty members and staff at the Agricultural campus in Truro, as Dalhousie merged with the Agricultural College that year. Similar to the previous surveys, travel by car to and from Dalhousie University campuses was the most

popular primary commuting mode among all of the 2012 survey respondents. Walking was the second most popular primary commuting mode. Using public transportation for commuting to and from Dalhousie campuses was the most popular secondary mode. The majority of the 2012 survey respondents owned a car and bicycle, but most of them used a car for traveling to and from Dalhousie campuses. Few respondents had frequently travelled between the Halifax and Truro campuses. Similar to the 2011 survey, the majority of the respondents were interested in a carpool initiative program, and ride-share program on the Agricultural campus. Also, the majority of the survey respondents from the Halifax campuses were interested in receiving a summer bus pass. In 2013, a summer bus pass and an employee bus pass were approved by Dalhousie University.

1.2.5 2013 Survey

Similar to the 2010 survey, the majority of the 2013 survey respondents lived within 2 kilometres of Dalhousie University campuses and commute time to and from Dalhousie campuses was less than 20 minutes. Traveling by car and walking were the most popular primary commuting modes among all of the 2013 survey respondents. Using public transportation and travelling by car were the most popular secondary modes. Approximately 60% of respondents indicated that they are not involved in the carpool program and approximately the same percentage owned a car. Most of the survey respondents used general parking at Dalhousie parking lots. Similar to the 2012 survey, only a small percentage of the survey respondents had frequently travelled between the Halifax and Truro campuses.

1.3 2014 Survey Summary

The 2014 Dalhousie Sustainability Survey is the sixth Sustainability Survey to be conducted at Dalhousie. This survey had a total of 1949 respondents, with 1508 respondents fully completing the survey. Figure 1-1 shows the locations of the Dalhousie University campuses where the survey was distributed among students, faculty members and staff. The survey asked several questions regarding socio-demographics (age, gender, income, etc.) and travel behaviour (commuting mode, commuting distances, commuting time, etc.).

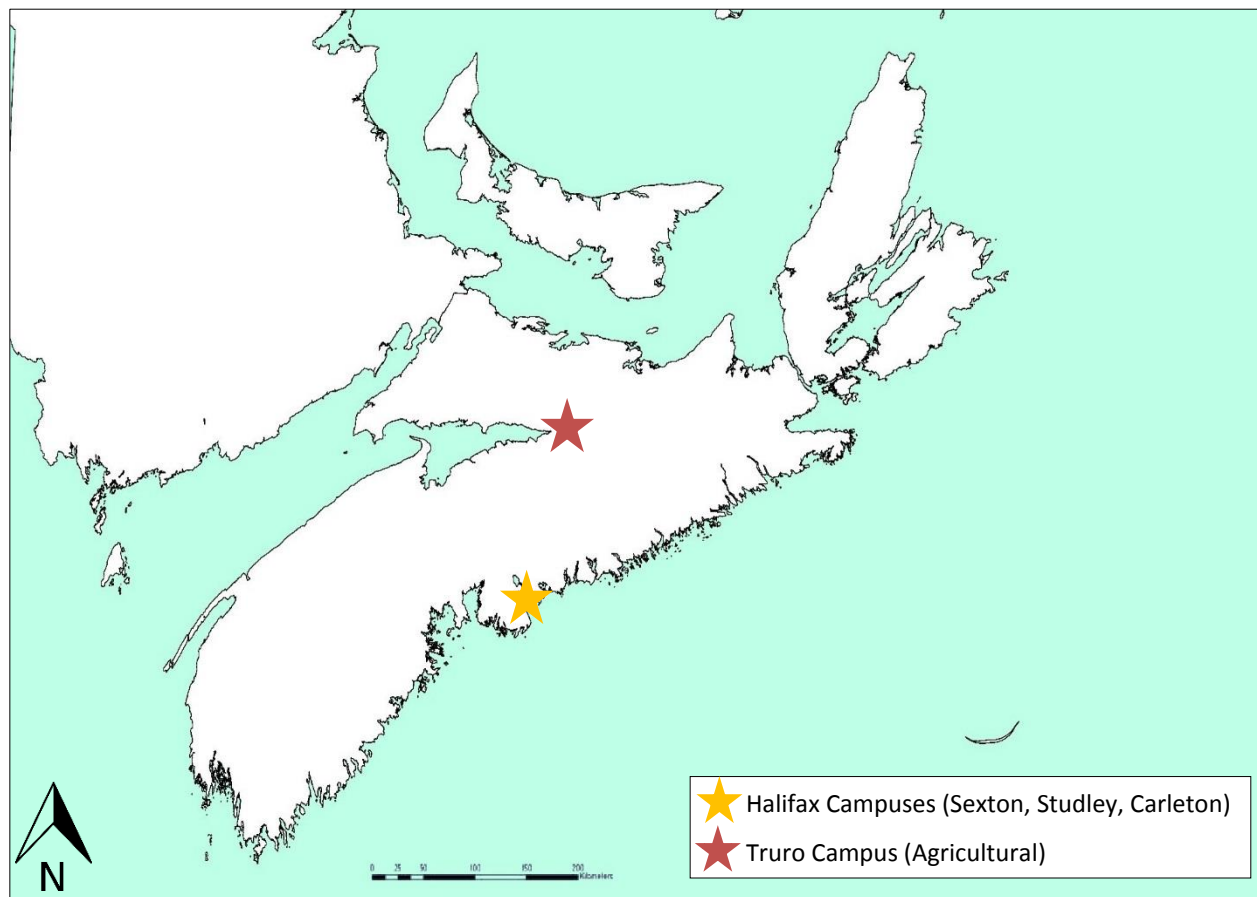


Figure 1-1 Context Map Showing Locations of Dalhousie Campuses

2. DEMOGRAPHICS OF SURVEY RESPONDENTS

The 2014 Dalhousie Sustainability Survey asked a set of socio-demographic questions including gender, age, income, primary campus, and residential location, to help survey researchers conclude what factors may affect a respondent's answers. In total, there were 1508 survey respondents that fully completed the survey.

2.1 Respondent Classification

Figure 2-1 shows the classification of respondents (students, staff and faculty members) for the 2014 Sustainability Survey. Students had the highest proportion of responses with 47.7%. Staff were second, with 40.1%, and faculty members, with 12.3%, had the lowest proportion of responses.

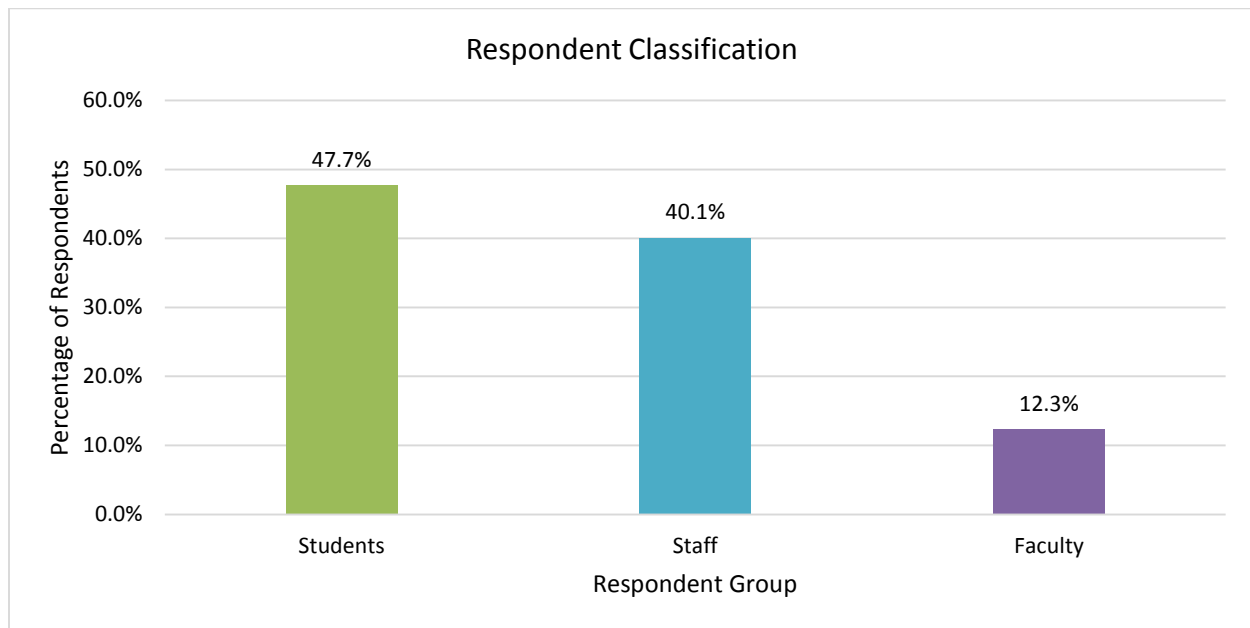


Figure 2-1 Respondent Classification (2014)

2.2 Age

Figure 2-2 shows the age classification of respondents for the 2014 Sustainability Survey. The age group 20 to 24 years old had the highest proportion of respondents (27.4%) among all age groups, due to the high proportion of student respondents (Figure 2-1). The age group of 65 years old and above had the lowest proportion of respondents with less than a 2% response rate.

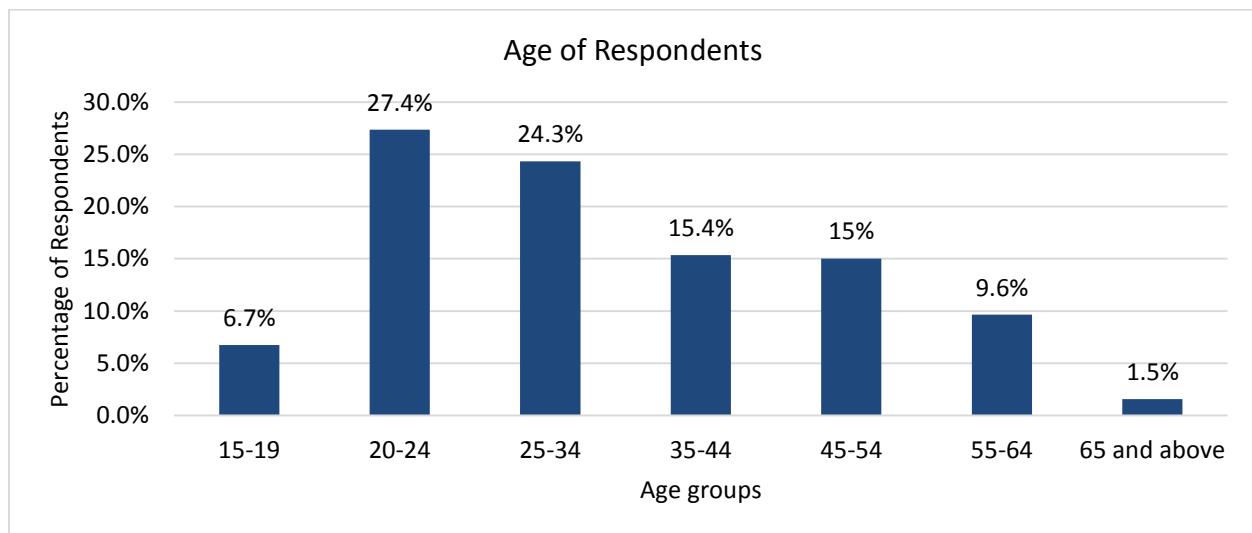


Figure 2-2 Age of Respondents (2014)

2.3 Gender

Respondents who identify as female accounted for approximately 71% of the sample population, followed by respondents who identify as male with 27%. Survey respondents who identify as transgender or other, or those who preferred not to say accounted for 2% of the responses (Figure 2-3).

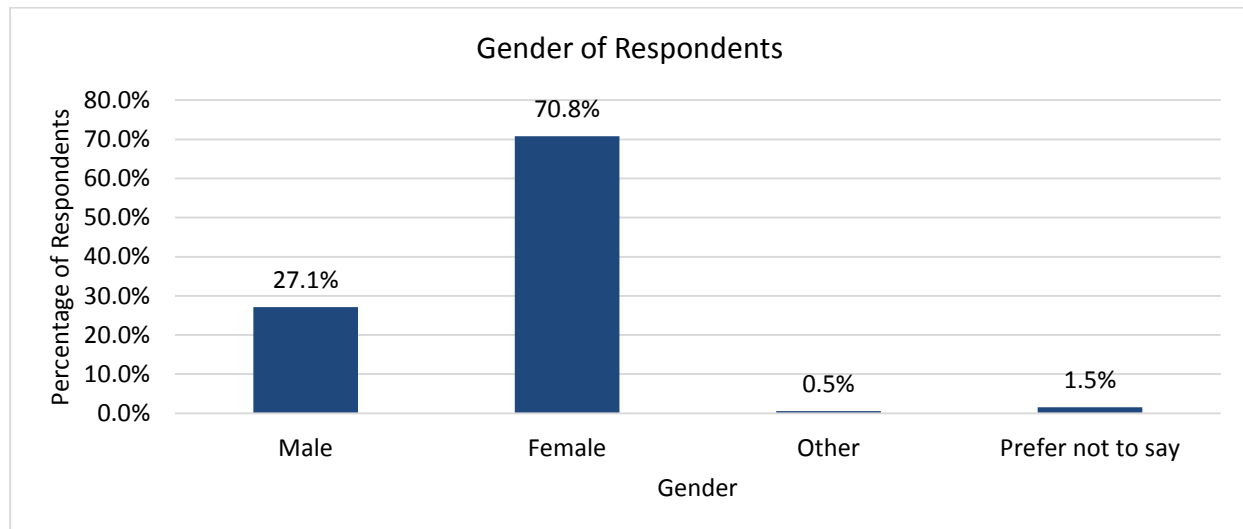


Figure 2-3 Gender of Respondents (2014)

2.4 Income

Figure 2-4 shows annual household income of all respondents and Figure 2-5 shows annual household income based on the respondent's classification. The income group earning less than \$19,999 per year had the highest proportion among all of the annual household income groups (21.4%). This could be due to the high proportion of student respondents to the survey (see Figure 2-1). This result is consistent with Figure 2-5 where the highest proportion of those belonging to the income group earning less than \$19,999 per year were students. The second highest annual household income group is those with an income above \$100,000 per year. Figure 2-5 reveals that this group was primarily faculty members. Staff respondents had more variation in their annual household income compared to students and faculty members (Figure 2-5).

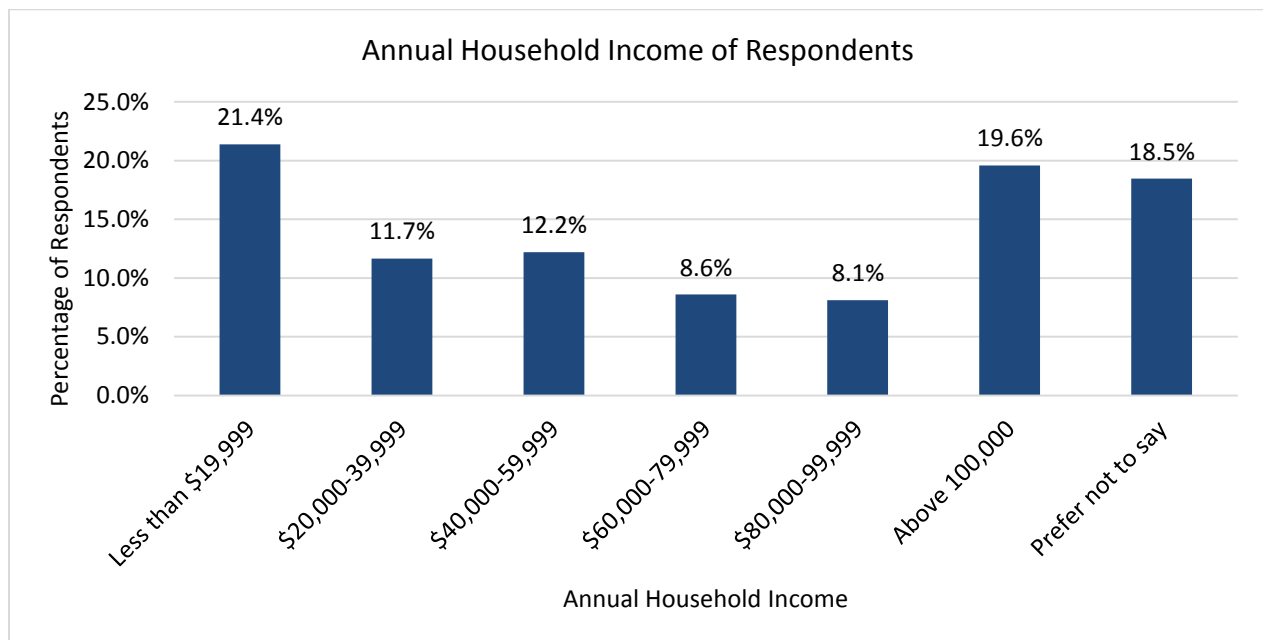


Figure 2-4 Annual Household Income of Respondents (2014)

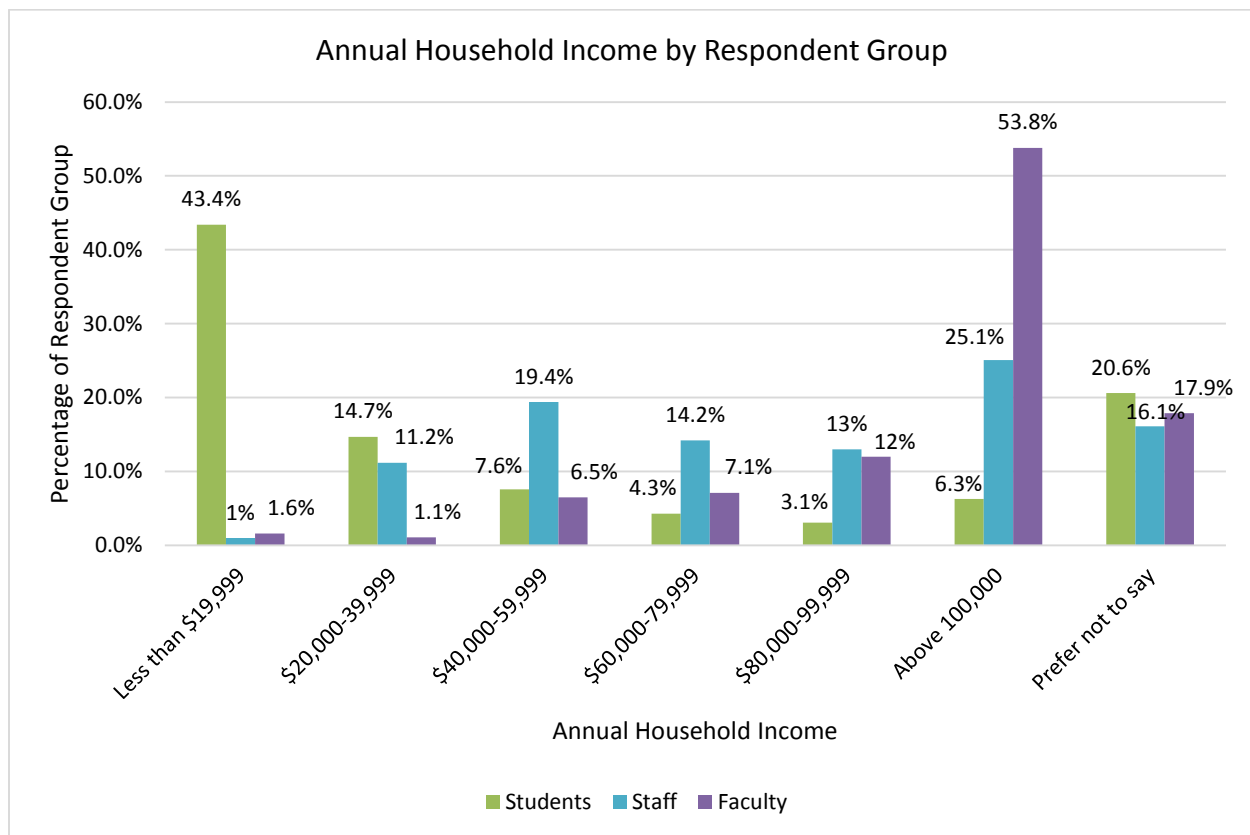


Figure 2-5 Annual Household Income by Respondent Group (2014)

2.5 Primary Campus

Figure 2-6 shows the primary campus classification of respondents for the 2014 Sustainability Survey. Among all of Dalhousie University's campuses, the Studley campus had the highest proportion of respondents in the survey (64.1%). Carleton campus had the second highest proportion of respondents (16.4%) and Sexton campus had 13.2% of respondents. The lowest proportion of survey respondents belonged to the Agricultural campus with 6.3%. The response by primary campus is consistent with the actual Dalhousie population at these campuses.

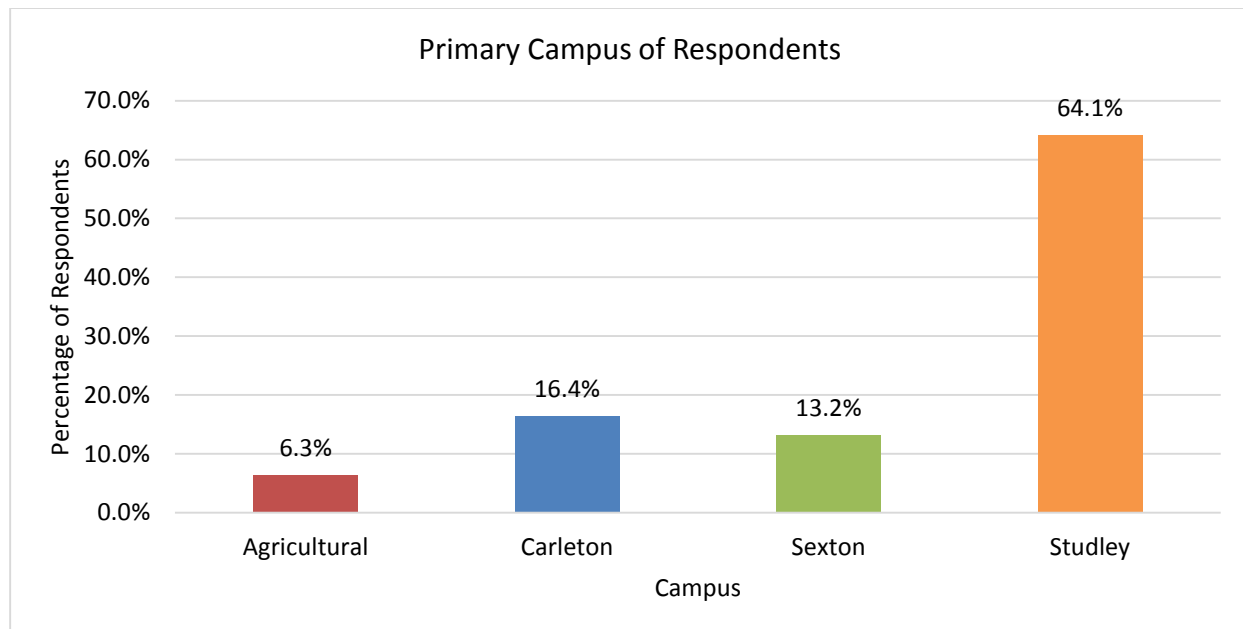


Figure 2-6 Primary Campus of Respondents (2014)

3. TRIP TO AND FROM CAMPUS

3.1 Distance between Home and Campus

Figure 3-1 shows the commute distance to campus for all respondents and Figure 3-2 shows cumulative commute distance to campus for all respondents for the 2014 Sustainability Survey. Commute distance directly influences several travel behaviours such as: mode choice, departure time, travel time, etc. As is shown in Figure 3-1, over 25% of respondents were within 2 km of their primary campus.

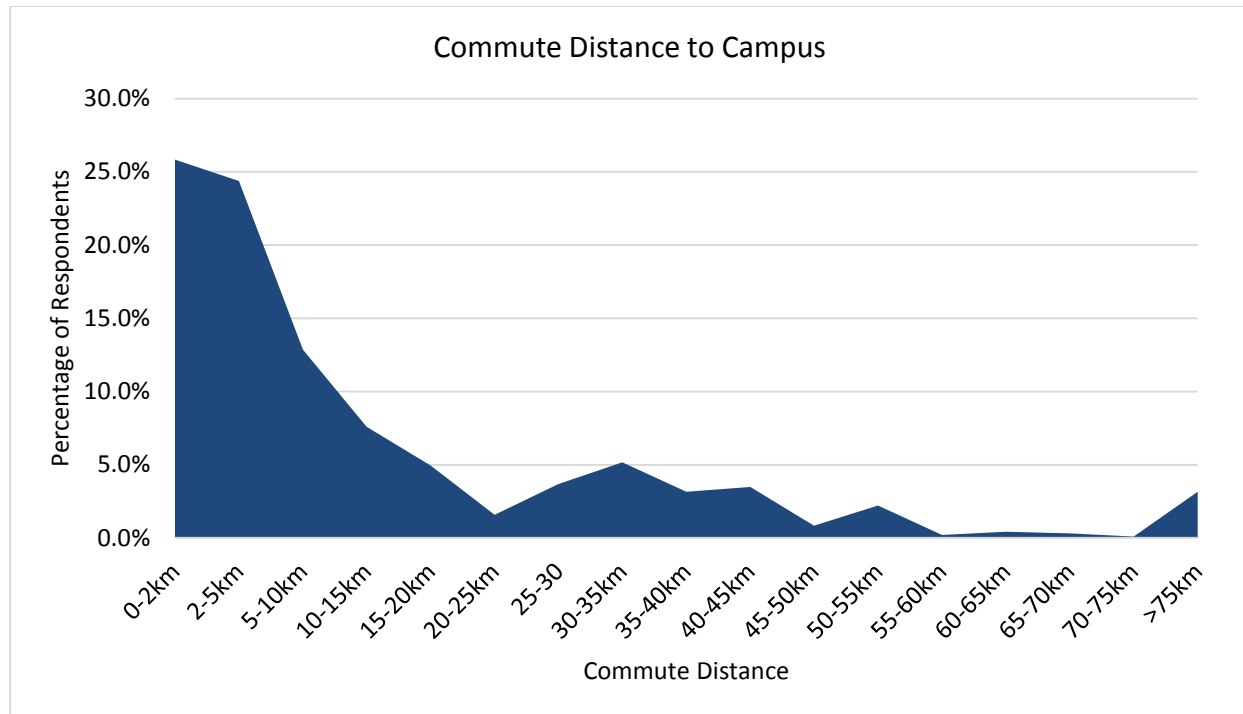


Figure 3-1 Commute Distance to Campus for all Respondents (2014)

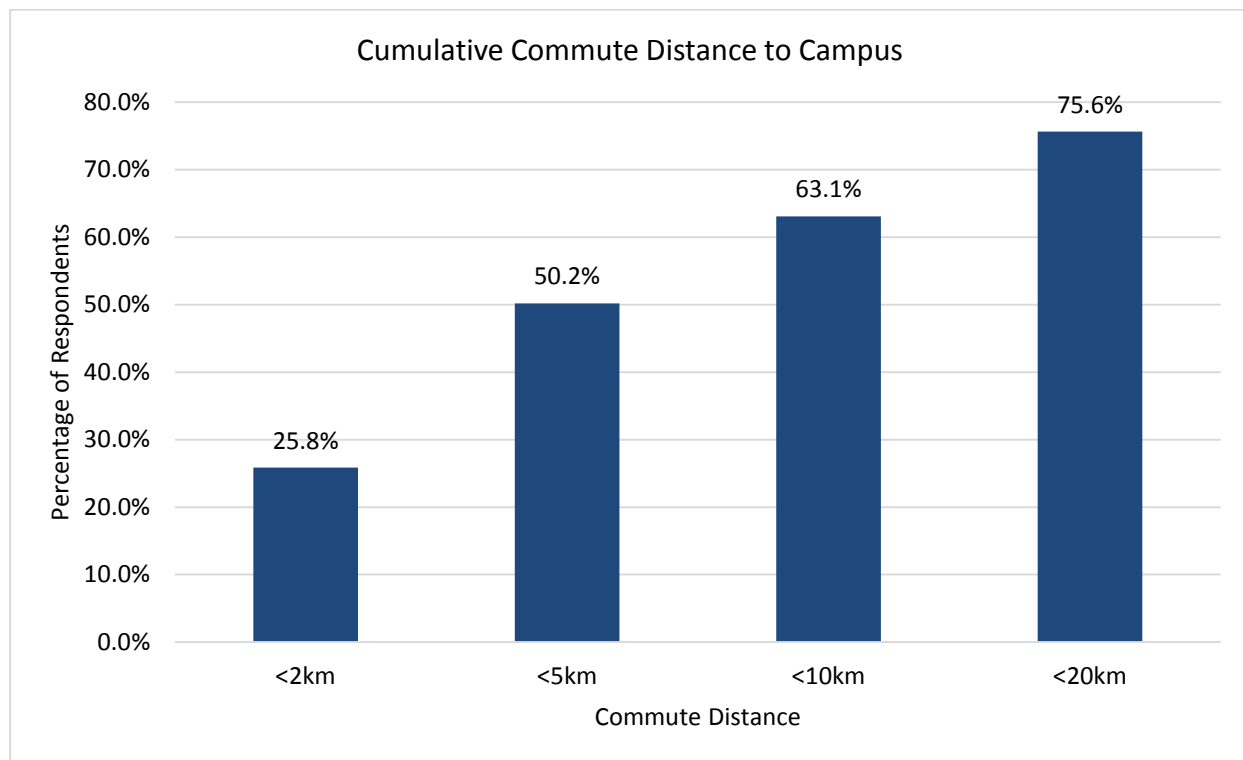


Figure 3-2 Cumulative Commute Distance to Campus for all Respondents (2014)

Figure 3-3 shows commute distance by respondent group and Figure 3-4 shows cumulative commute distance by respondent group. Students, with 47.3%, had the highest proportion of respondents commuting within 2 km of their primary campus. Largely, staff and faculty members commute 2 to 10 km to their primary campuses. However, faculty members have a shorter commute distance compared to staff.

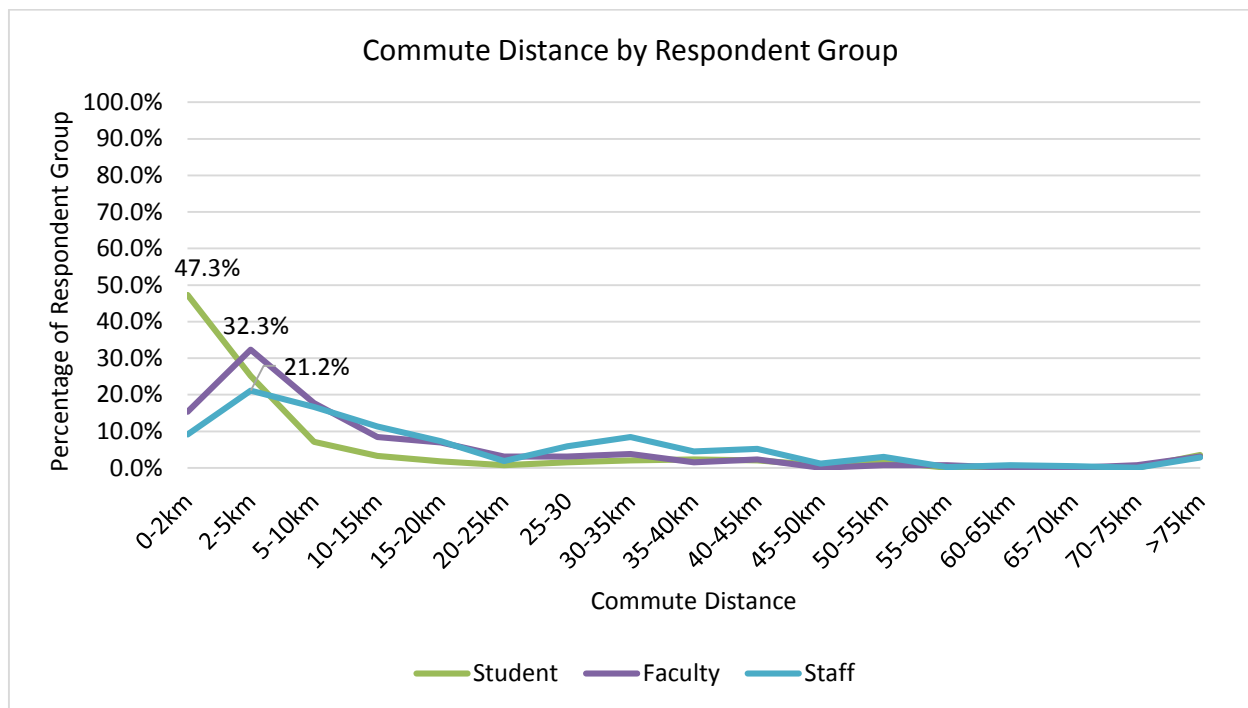


Figure 3-3 Commute Distance by Respondent Group (2014)

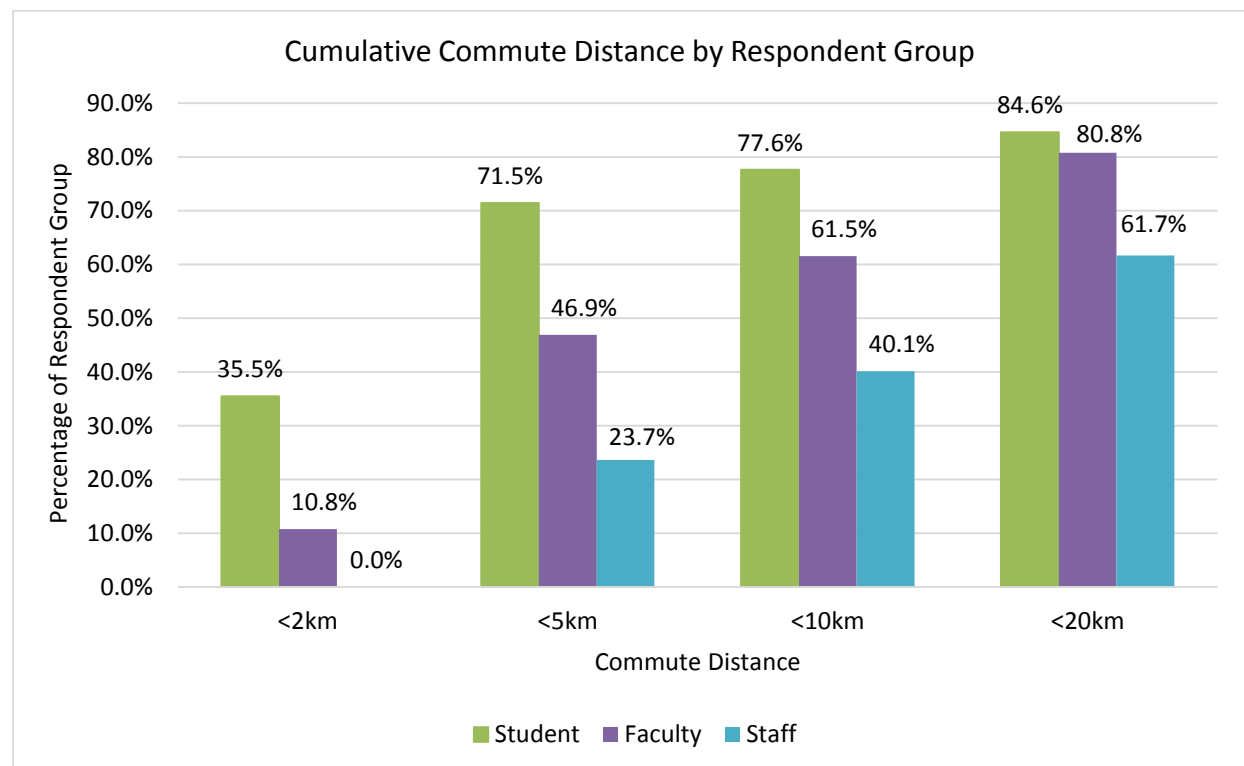


Figure 3-4 Cumulative Commute Distance by Respondent Group (2014)

3.2 Arrival and Departure Time

The majority of respondents arrived on campus between 7:30am and 9:30am and departed between 3:30pm and 5:30pm (Figure 3-5). However, there is a small proportion of respondents who departed between 5:00am and 6:00am, which could be the night shift staff at Dalhousie University.

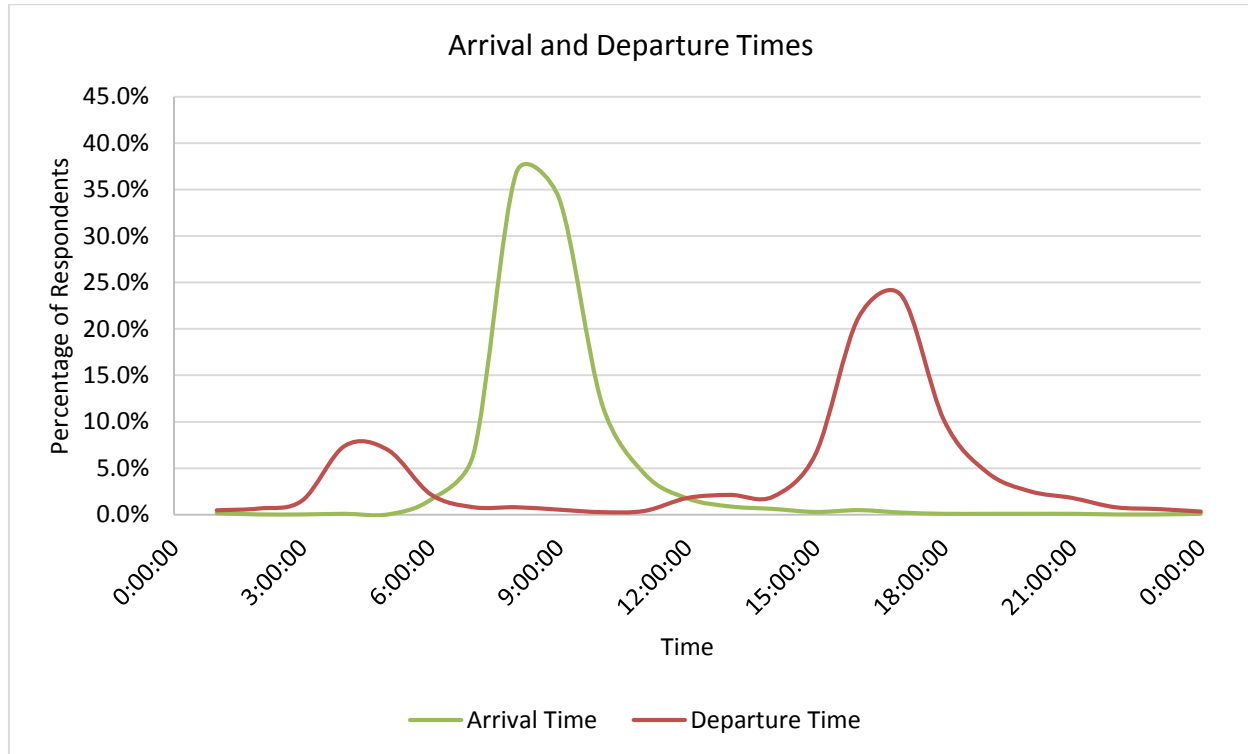


Figure 3-5 Arrival and Departure Times of Respondents from their Respective Campuses (2014)

3.3 Commute Time

The greatest percentage (30.1%) of respondents commute between 10 and 20 minutes to their primary campus. The smallest percentage of respondents (3.6%) commute between 50 and 60 minutes (Figure 3-6). Approximately 65% of total respondents commute time was less than 30 minutes, whereas 27.2% of total respondents commute time was between half an hour and one hour, and 7.1% of total respondents commute time was more than 1 hour (Figure 3-6). As it is highlighted in Figure 3-7, most of the students and faculty members spend about 10 to 20 minutes commuting to Dalhousie University campuses. Comparatively, most of the staff spend about 40 to 50 minutes commuting to Dalhousie campuses. These results are consistent with commute distance (Figure 3-1, Figure 3-3), where students and faculty members had the shortest commute to Dalhousie campuses compared to staff.

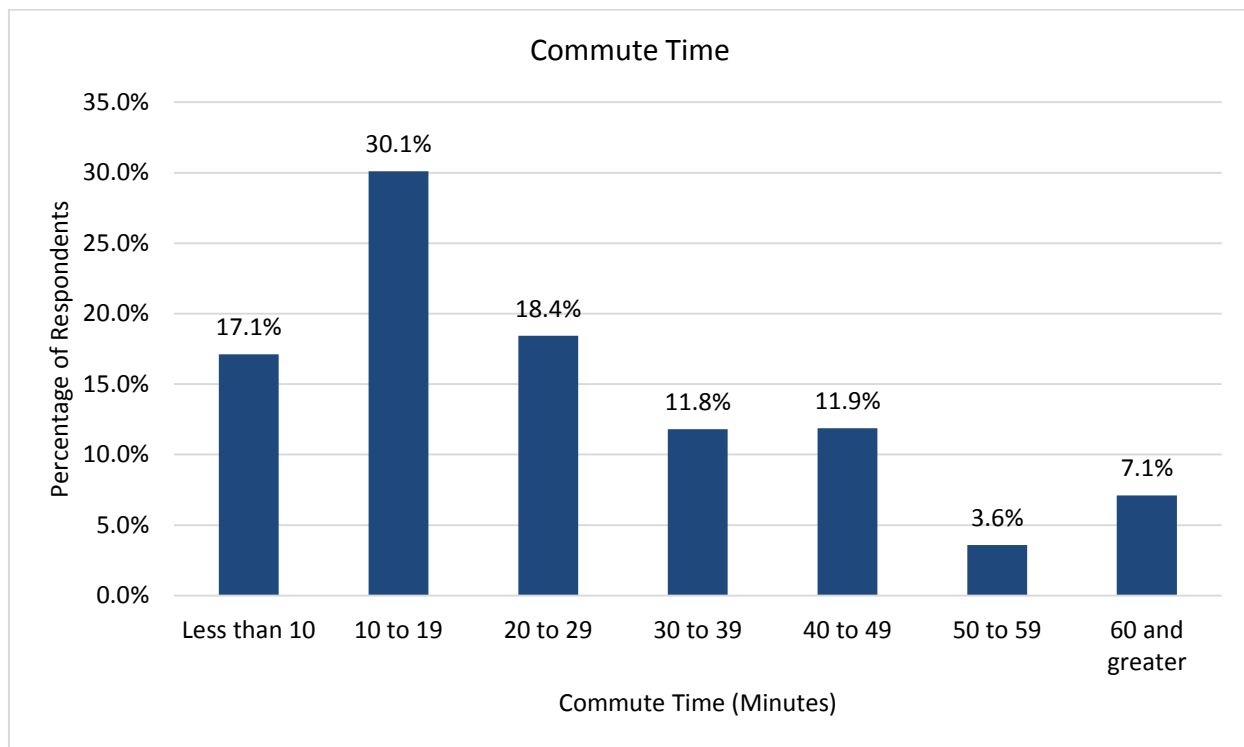


Figure 3-6 Commute Time between the Home and Campus of Respondents (2014)

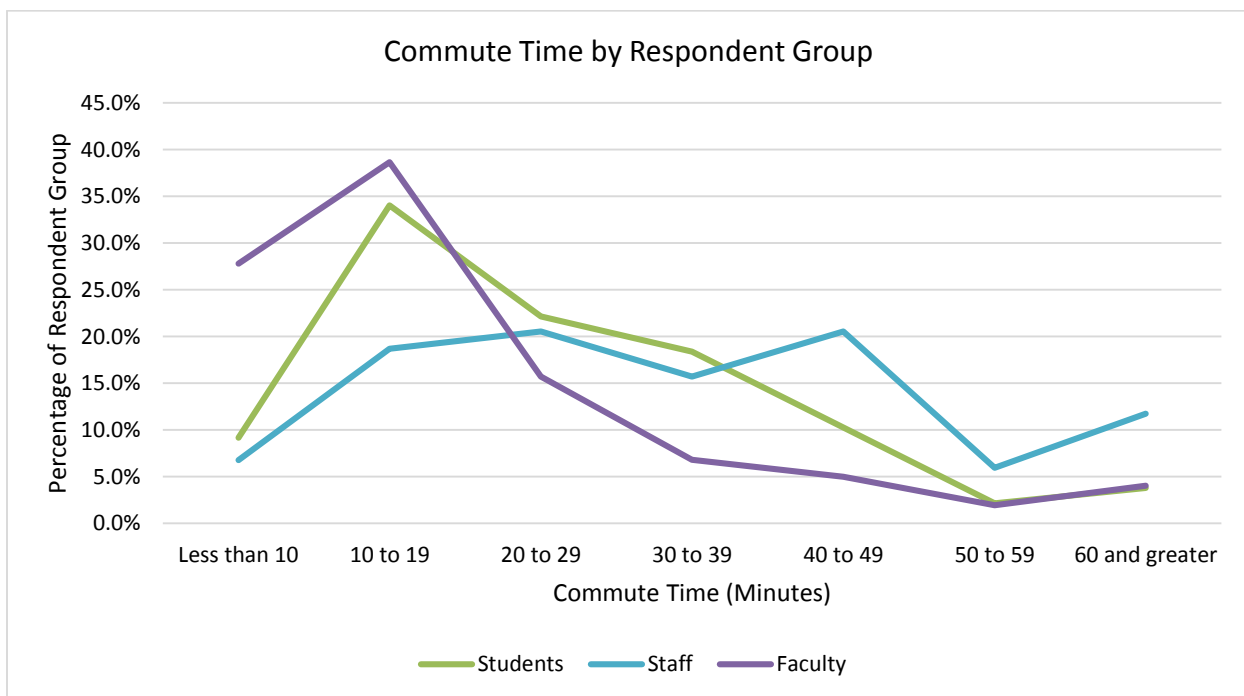


Figure 3-7 Commute Time by Respondent Group (2014)

4. MODAL SPLIT

Respondents of Dalhousie's 2014 Sustainability Survey were asked to choose their primary and secondary travel mode to and from their primary campus. Commuting modes include: automobile – drive alone, automobile – passenger, public transit, van pool, bicycle and walking.

4.1 Primary Mode

Figure 4-1 shows the primary commuting mode of respondents for the 2014 Sustainability Survey. Automobile, including both driving alone and passenger, and walking were the two most popular commuting modes to and from the respondent's primary campuses. This result is consistent with the results of commute distance and time (Figure 3-1 and Figure 3-6). A short commute distance resulted in an increase of walking to and from Dalhousie campuses. Public transit was the primary commuting mode of 21.3% of respondents. Smaller percentages of respondents used bicycle and van pool as their primary commuting mode to Dalhousie campuses, with 9.4% and 0.3% respectively.

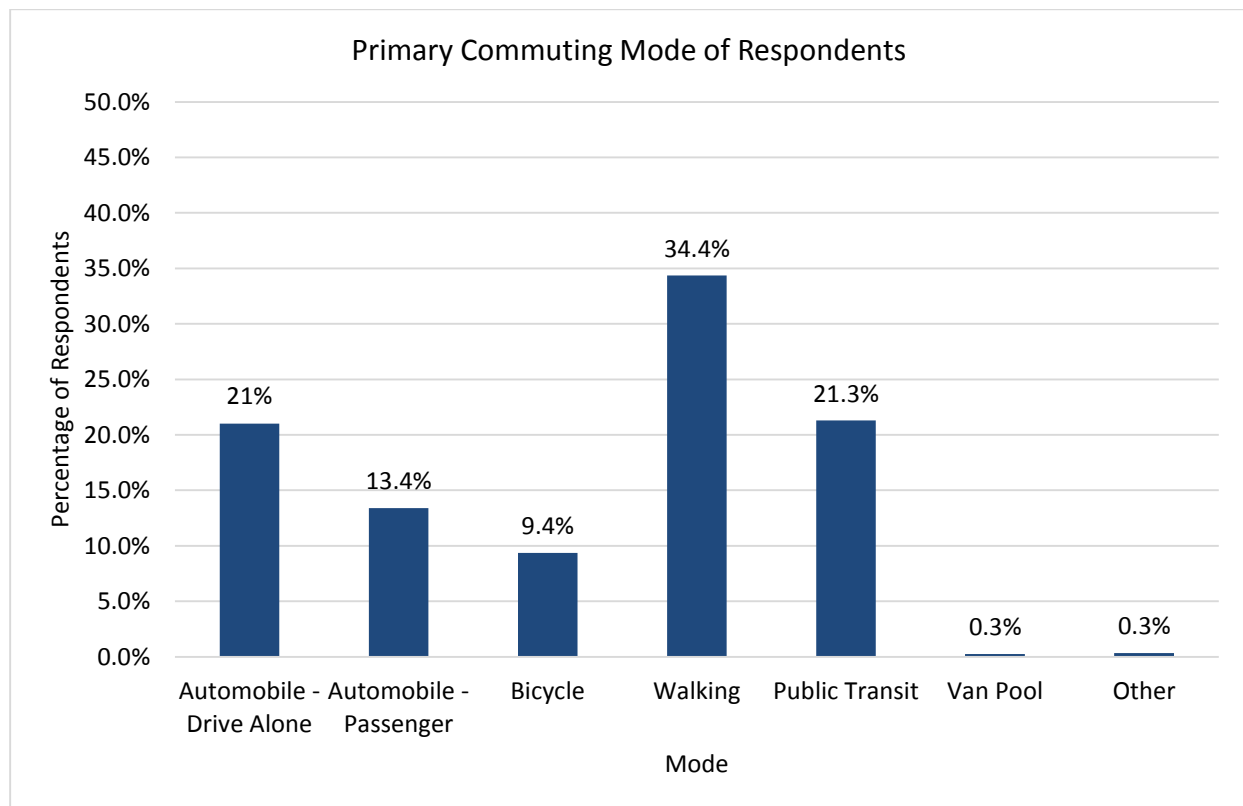


Figure 4-1 Primary Commuting Mode of all Survey Respondents (2014)

Figure 4-2 shows primary commuting mode by respondent group for the 2014 Sustainability Survey. Staff were more likely to use automobiles (58.77%), including driving alone and passenger, for their primary commuting mode as compared to students and faculty members. Students primarily used walking as their primary commuting mode (51.32%). This result is consistent with commute distance (Figure 3-3) and income level (Figure 2-5) of the student group. Faculty members also had a reasonable percentage (26.49%) of respondents that walk.

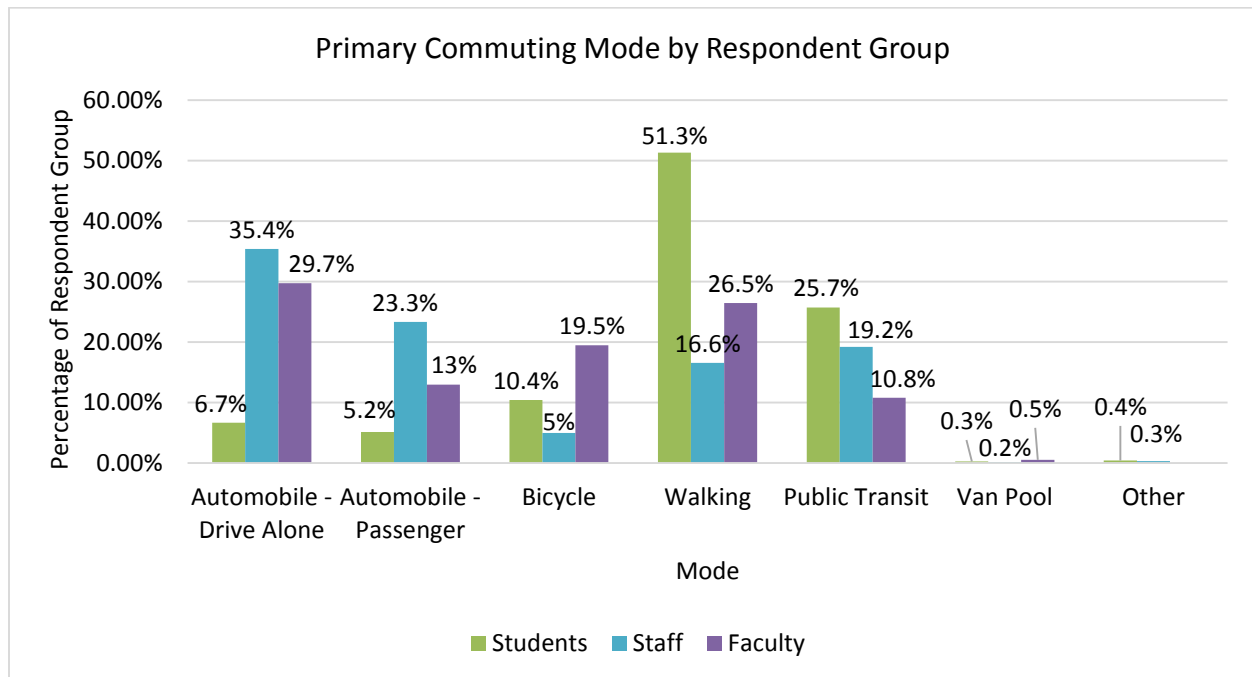


Figure 4-2 Primary Commuting Mode by Respondent Group (2014)

4.2 Secondary Mode

Figure 4-3 shows the secondary commute mode of respondents for the 2014 Sustainability Survey. Note that 21.9% of respondents used only their primary commute mode for commuting to campus. Public transit was the most used secondary commute mode (26.9%). Commuting by automobile, including driving alone and passenger, was used as a secondary commuting mode by 21.1% of respondents. Active transportation modes, including walking and bicycle, were used by 19.8% and 8.2% of respondents respectively.

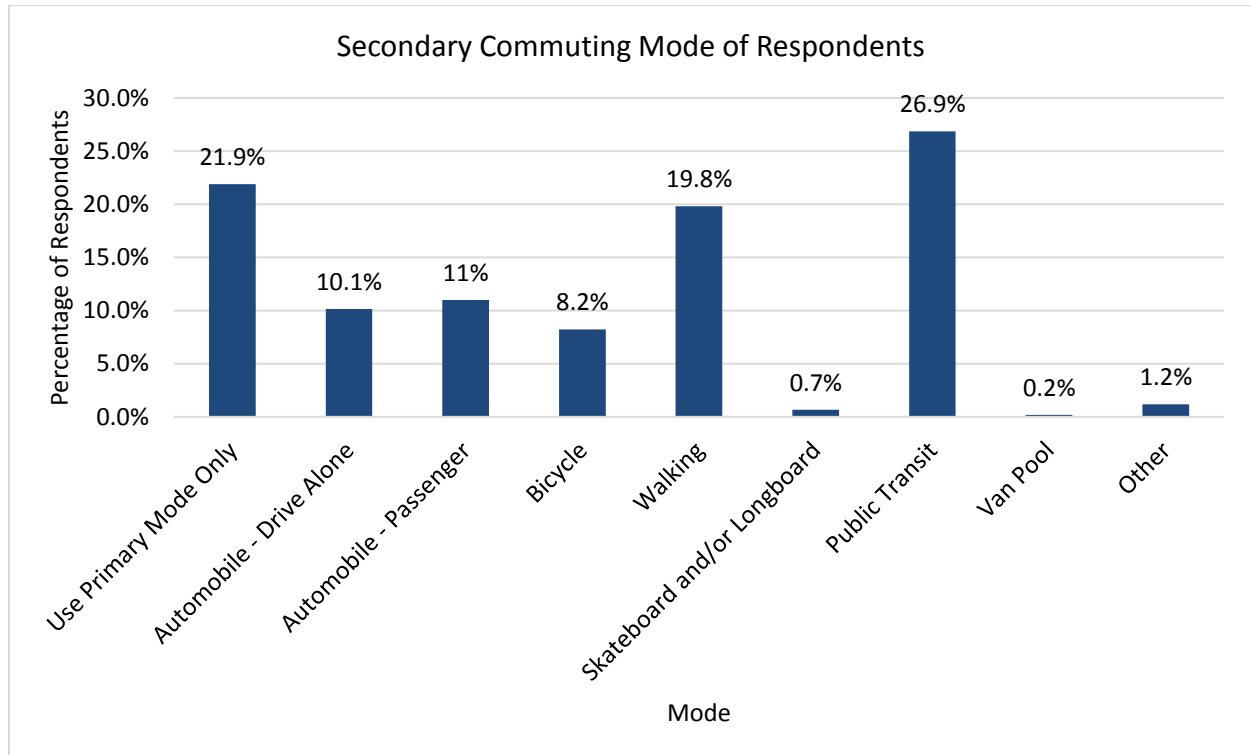


Figure 4-3 Secondary Commuting Mode for all Survey Respondents (2014)

Students had the highest percentage of respondents using public transit as their secondary mode compared to staff and faculty members (Figure 4-4). This is similar for active transportation (bicycle and walking modes). Staff had the highest percentage of respondents who used only their primary commuting mode (32.3%). Staff also used public transportation as a popular secondary mode for commuting. Faculty members primarily chose walking as their secondary commuting mode (25.4%).

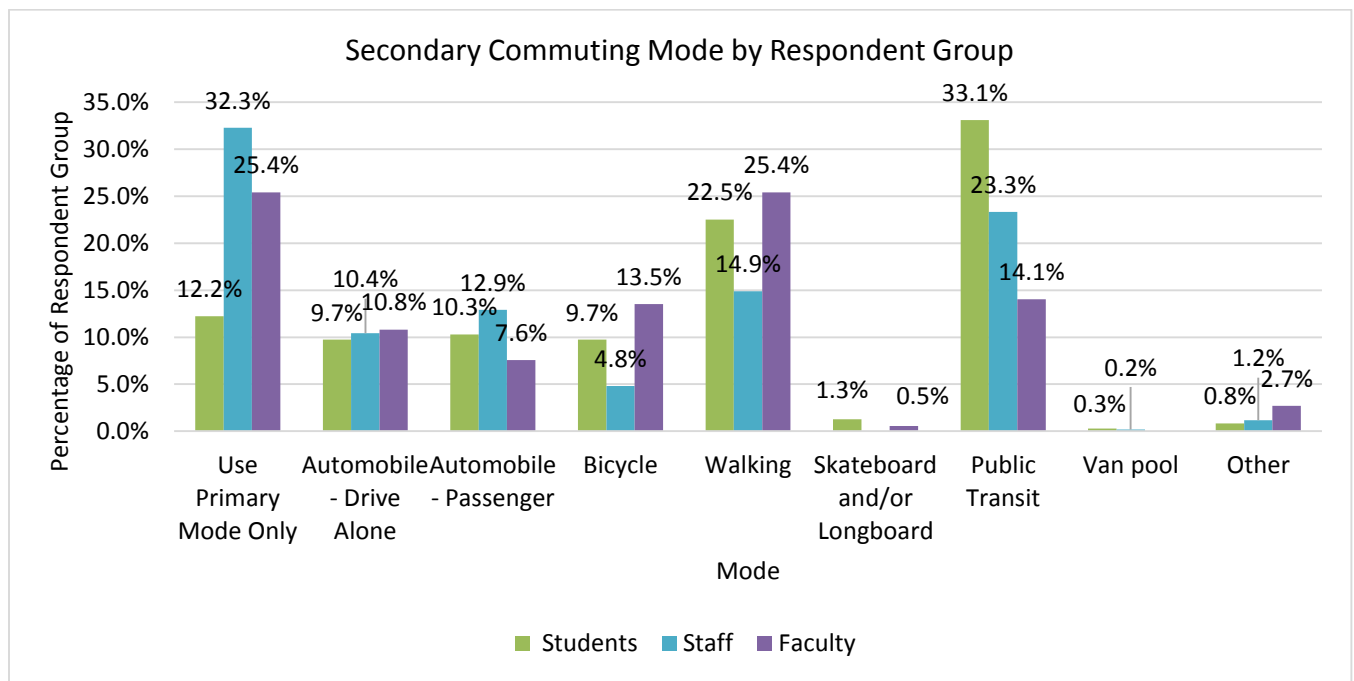


Figure 4-4 Secondary Commuting Mode by Respondent Group (2014)

4.3 Vehicle Access and Ownership

Figure 4-5 shows vehicle access or ownership for all respondents and Figure 4-6 shows vehicle access or ownership by respondent group for the 2014 Sustainability Survey. Around three quarters of all survey respondents owned or had access to a vehicle for commuting to and from Dalhousie campuses. Figure 4-6 shows that those who own or have access to a vehicle are primarily faculty members and staff. This is consistent with previous results (Figure 4-2) where faculty members and staff chose the automobile as the most popular primary mode for commuting to and from Dalhousie campuses.

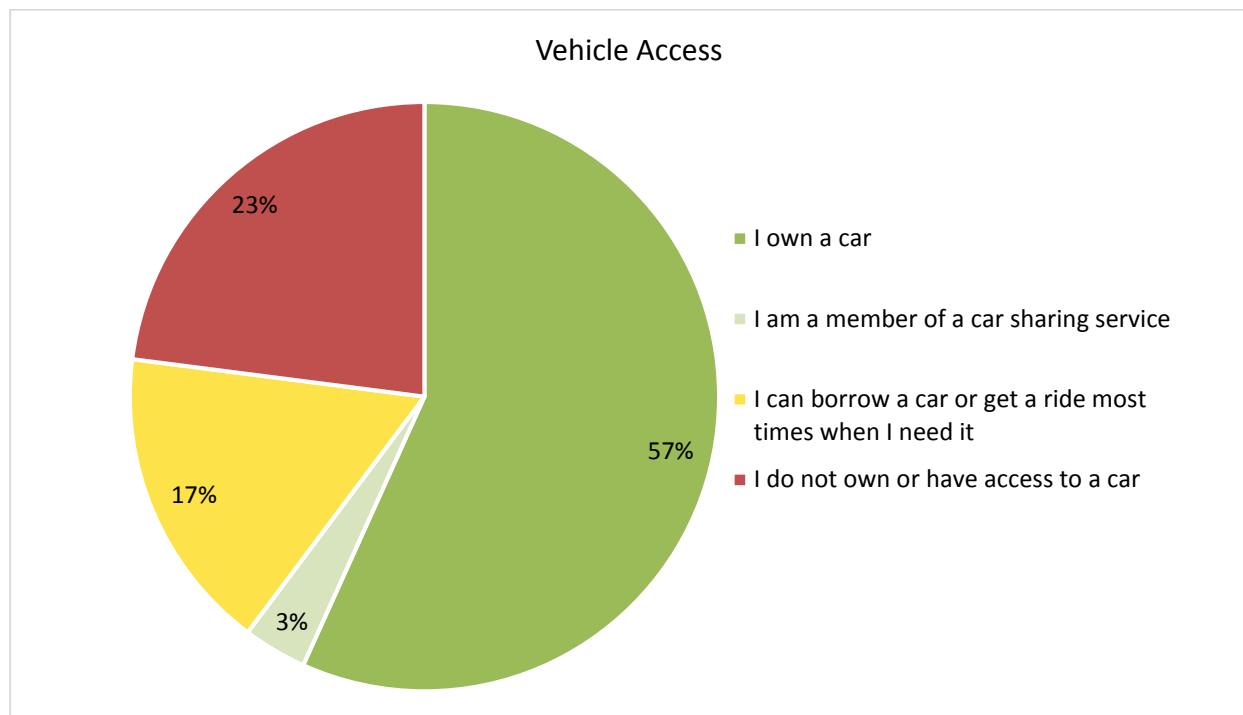


Figure 4-5 Vehicle Access or Ownership for all Respondents (2014)

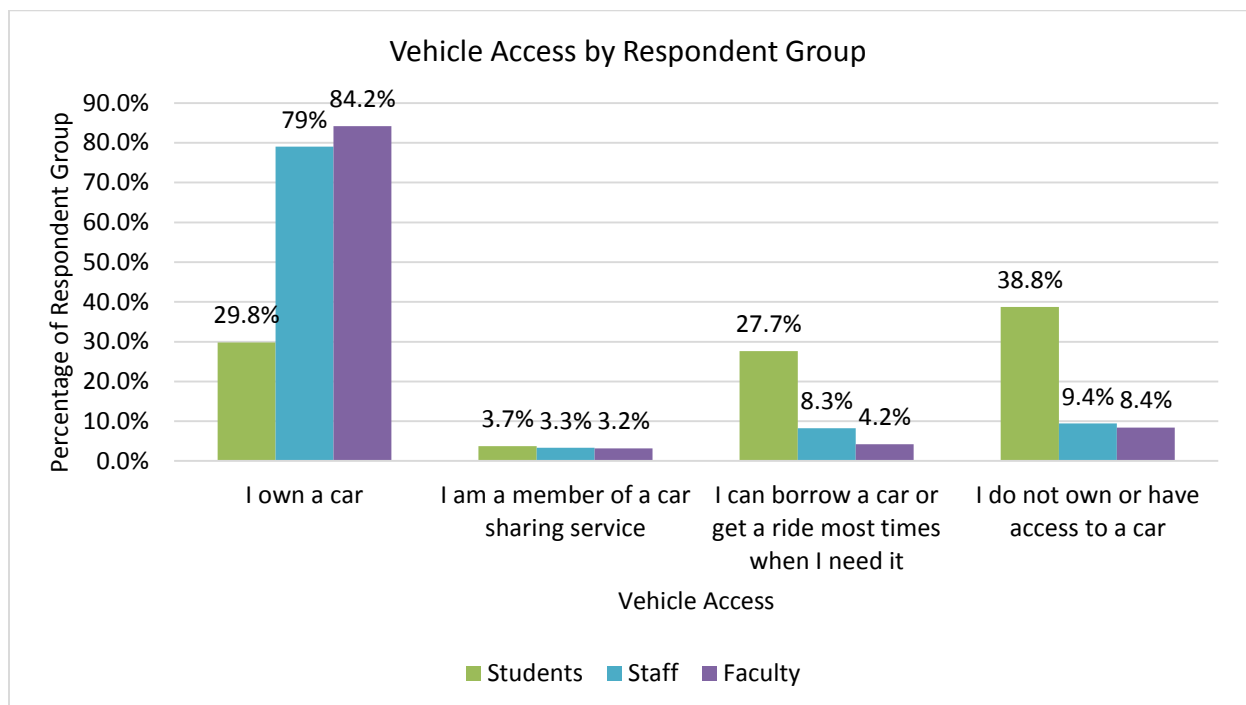


Figure 4-6 Vehicle Access or Ownership by Respondent Group (2014)

4.4 Bicycle Access and Ownership

Figure 4-7 shows bicycle access for all respondents and Figure 4-8 shows bicycle access by respondent group for the 2014 Sustainability Survey. Approximately half of the survey respondents indicated that they owned a bicycle. Around 9% of respondents indicated that they have access to a bicycle when they need it. The majority of faculty members and staff own a bicycle.

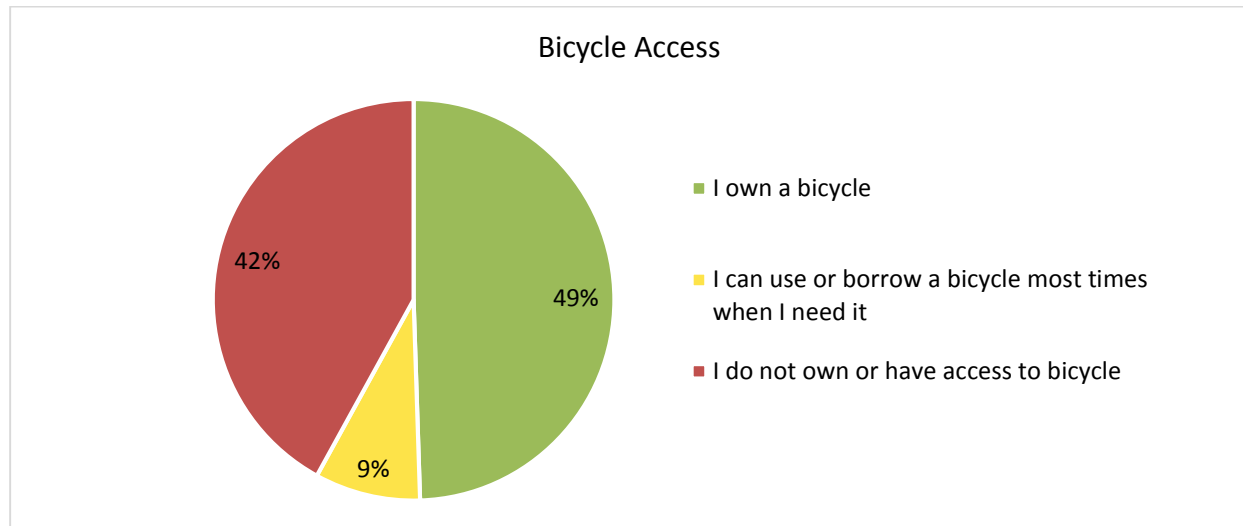


Figure 4-7 Bicycle Access or Ownership for all Respondents (2014)

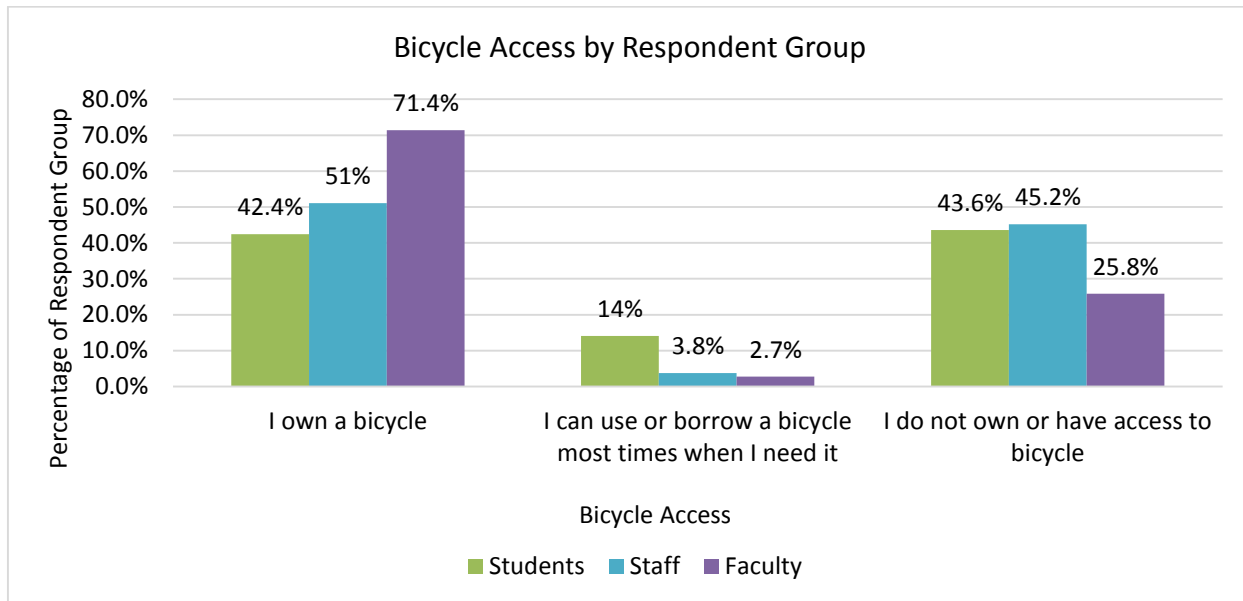


Figure 4-8 Bicycle Access or Ownership by Respondent Group (2014)

4.5 Travel Expenditure

Figure 4-9 shows the percentage of respondents within each monthly travel expenditure category and Figure 4-10 shows a disaggregated analysis based on the respondent group for percentage of total survey respondents within monthly expenditure categories for the 2014 Sustainability Survey. Approximately two thirds of survey respondents spend less than \$100 per month on travel to and from Dalhousie campuses. Students had the lowest average monthly travel expenditures. Around two thirds of students spent less than \$50 on commuting to and from Dalhousie campuses. This result is consistent with Figure 4-2 which shows that the majority of students use walking as their primary commuting mode. Further, students had the shortest travel distance and travel time to and from Dalhousie campuses (Figures 3-4 and 3-7). Comparatively, faculty members spent the second least on transportation, where more than 50% of faculty members spent less than \$100 on traveling to and from Dalhousie campuses. Finally, staff spent the highest amount among all of the respondent groups on traveling to and from Dalhousie campuses. This result is consistent with commuting distance and travel time where staff live farther from the Dalhousie campuses compared to students and faculty members.

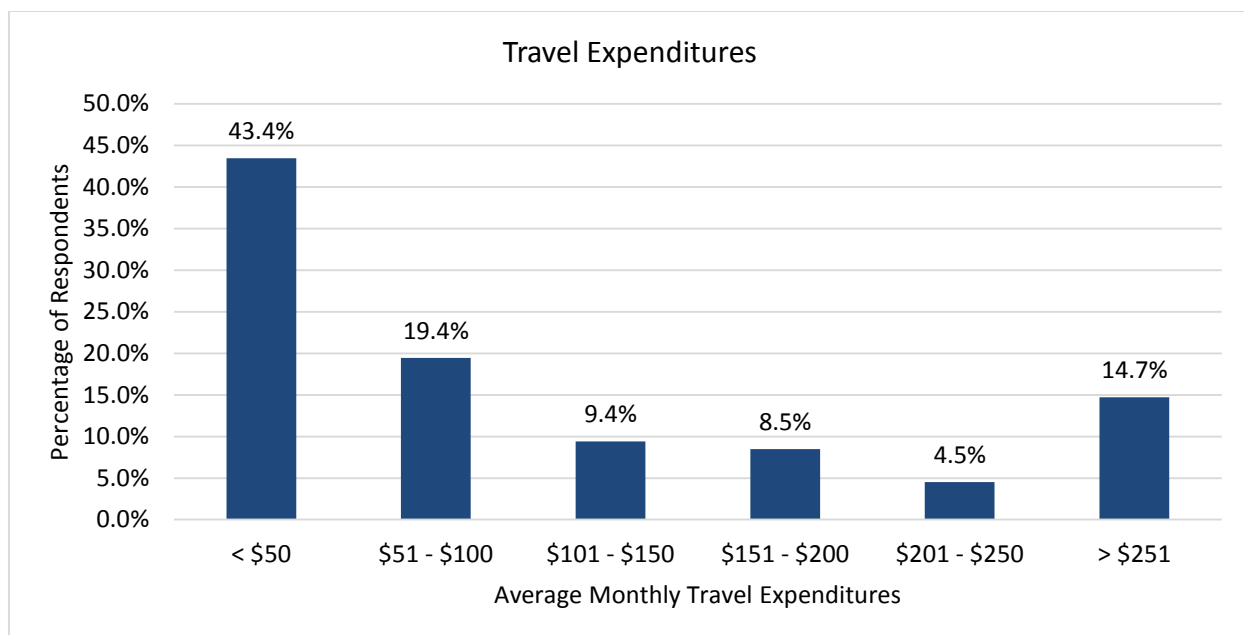


Figure 4-9 Percentage of Respondents within each Monthly Travel Expenditure Category (2014)

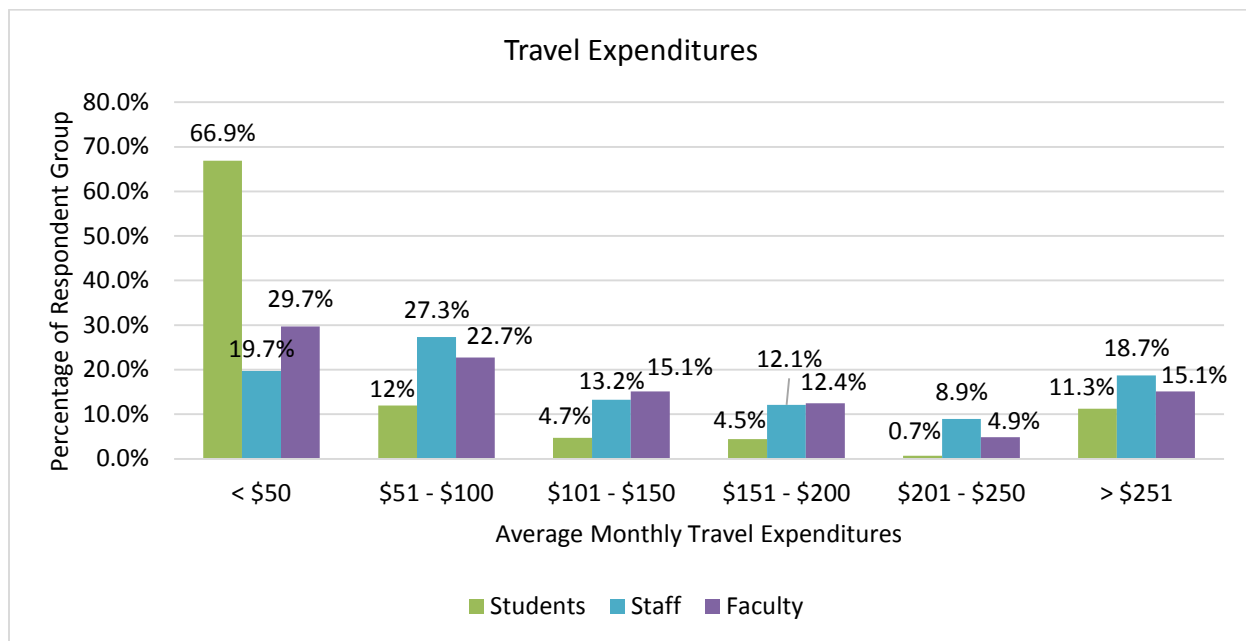


Figure 4-10 Percentage of Respondents within each Monthly Travel Expenditure Category by Respondent Group (2014)

4.6 Mode Changes

Figure 4-11 shows the changes in primary commuting mode between 2013 and 2014 of respondents for the 2014 Sustainability Survey. There are slight changes in most modes. Interestingly, automobile usage decreased in 2014 compared to 2013. Walking increased in 2014 compared to 2013. This result may be due to changes in commuting distances and car ownership between the 2013 and 2014 Dalhousie commuter respondents.

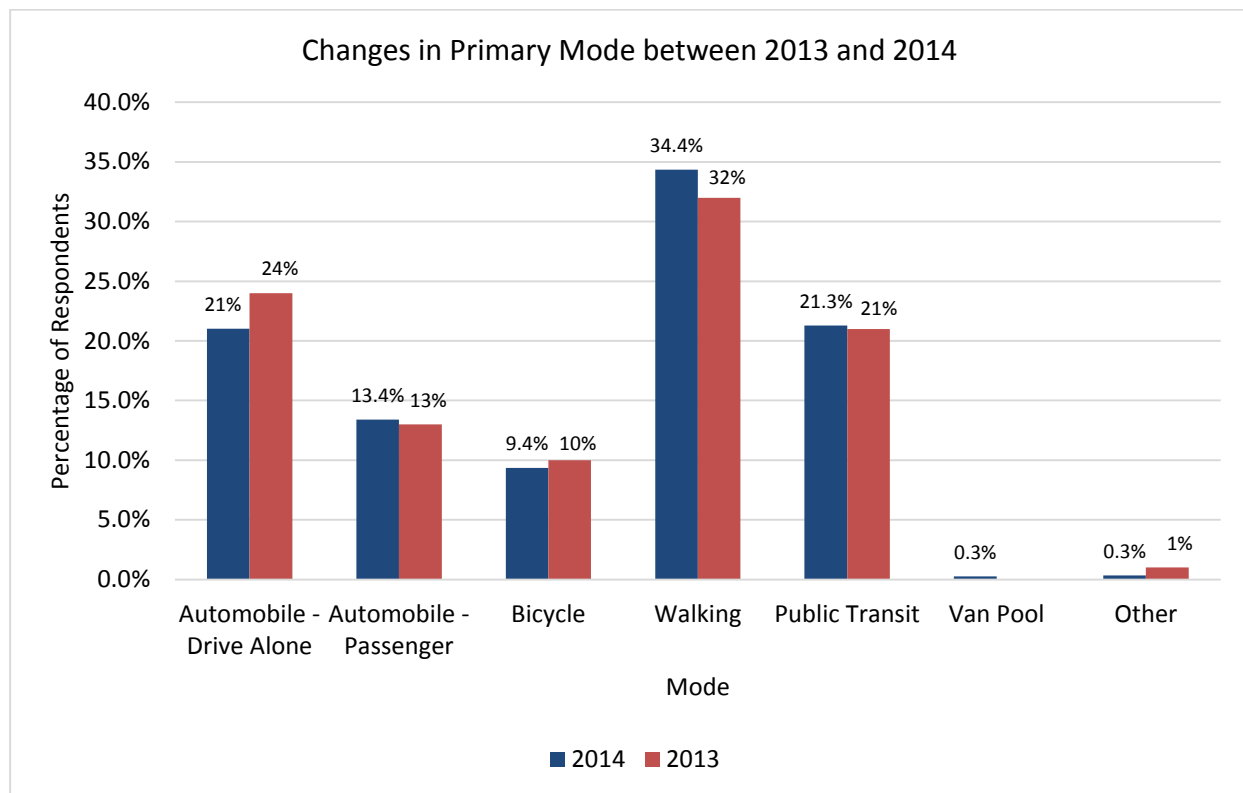


Figure 4-11 Changes in Primary Mode between 2013 and 2014

4.7 Intercampus Travel

4.7.1 Travel Frequency between Halifax Campuses

Figure 4-12 shows intercampus travel frequency for all respondents and Figure 4-13 shows travel frequency between the Halifax and Truro campuses for all respondents for the 2014 Sustainability Survey. Around 75% of total survey respondents have traveled between Dalhousie's Halifax campuses (Carleton, Sexton and Studley), however only 6.3% travel between Halifax campuses daily (Figure 4-12). More than 80% of survey respondents never travelled between the Halifax and Truro campuses (Figure 4-13).

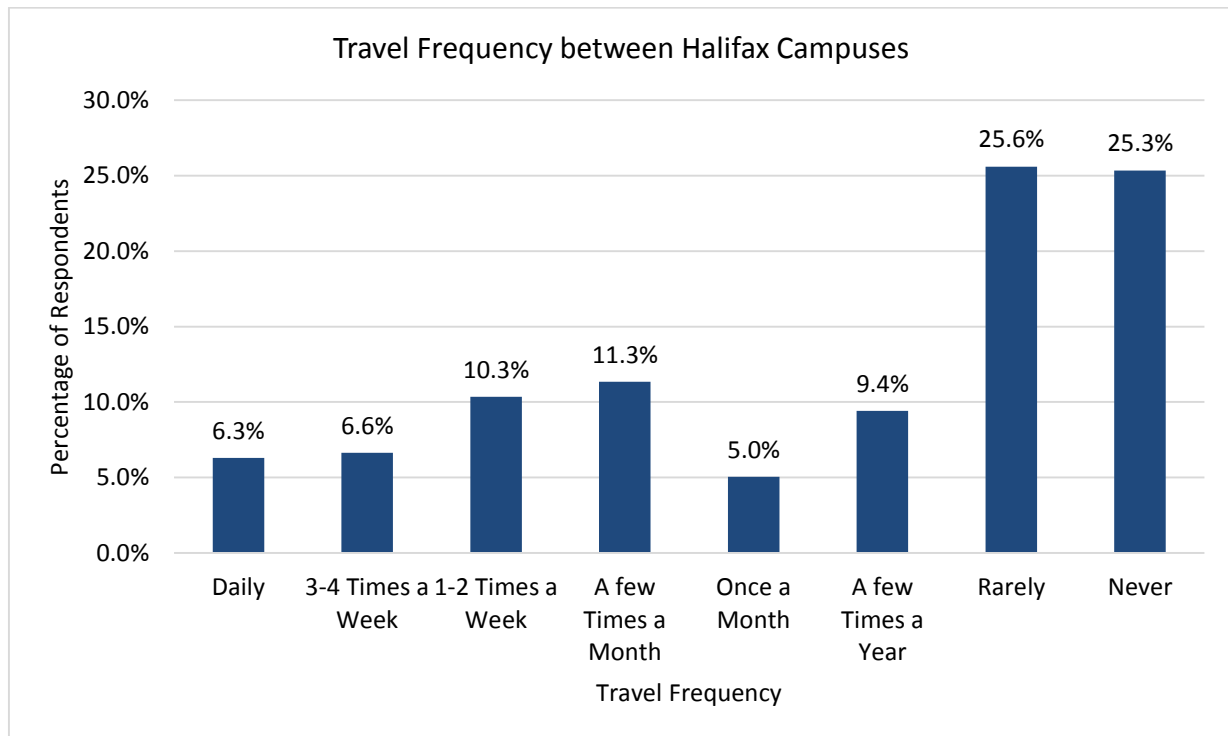


Figure 4-12 Travel Frequency between Halifax Campuses for all Respondents (2014)

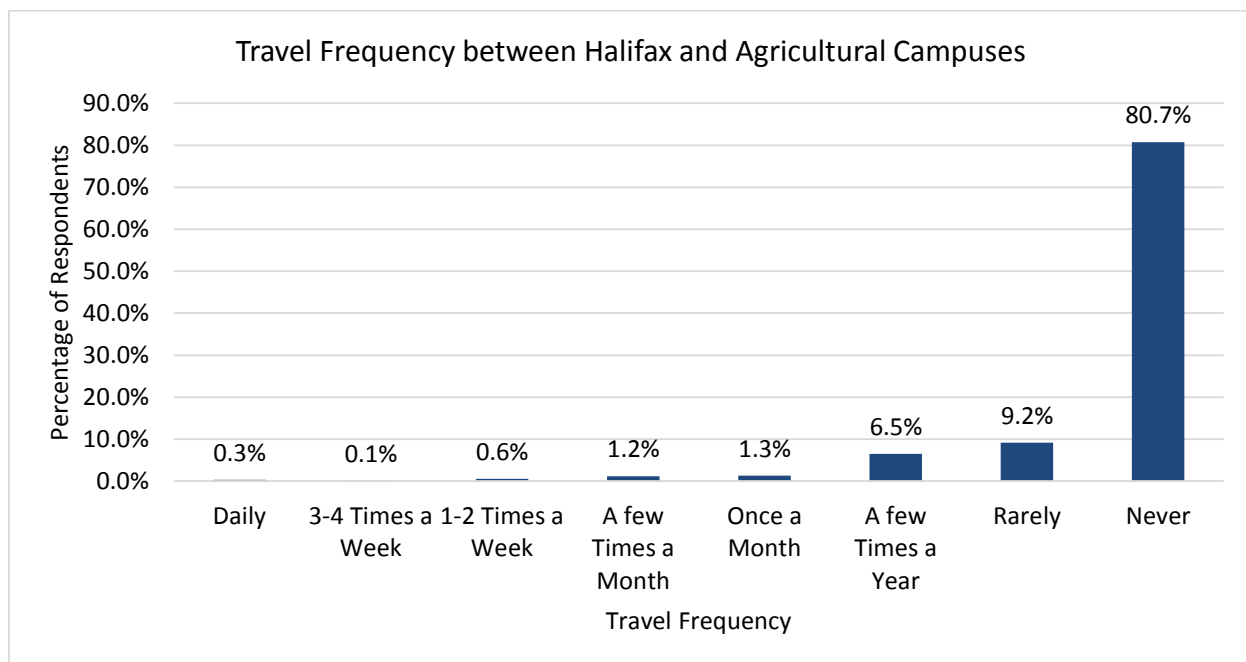


Figure 4-13 Travel Frequency between Halifax and Agricultural Campuses for all Respondents (2014)

4.7.2 Intercampus Modal Split

Figure 4-14 shows travel modes used by respondents to travel between Dalhousie campuses and Figure 4-15 shows travel modes used by respondents to travel between the Halifax and Truro campuses for the 2014 Sustainability Survey. Active transportation, including walking and bicycle, was the most popular travel mode (81.6%) between Halifax campuses (Carleton, Sexton and Studley). Around 10.0% of respondents used public transportation and 7.1% of respondents used a car for traveling between Halifax campuses. The low percentage of car usage could be due to the close proximity of the campuses, the availability of public transit and limited parking spaces. The primary travel mode used by respondents to travel between Halifax and Agricultural campuses was by automobile (51.7% drive alone and 37.2% carpool). Around 10.7% of respondents used public transportation for traveling between Halifax and Agricultural campuses (Figure 4-15).

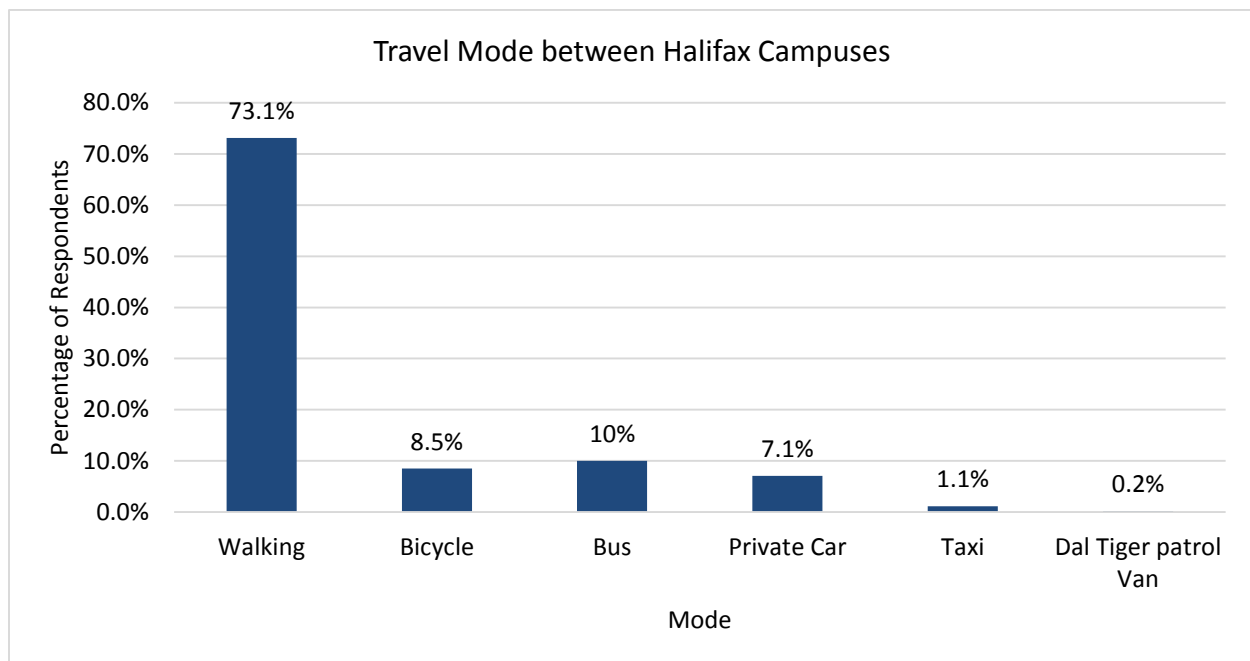


Figure 4-14 Travel Mode between Halifax Campuses (2014)

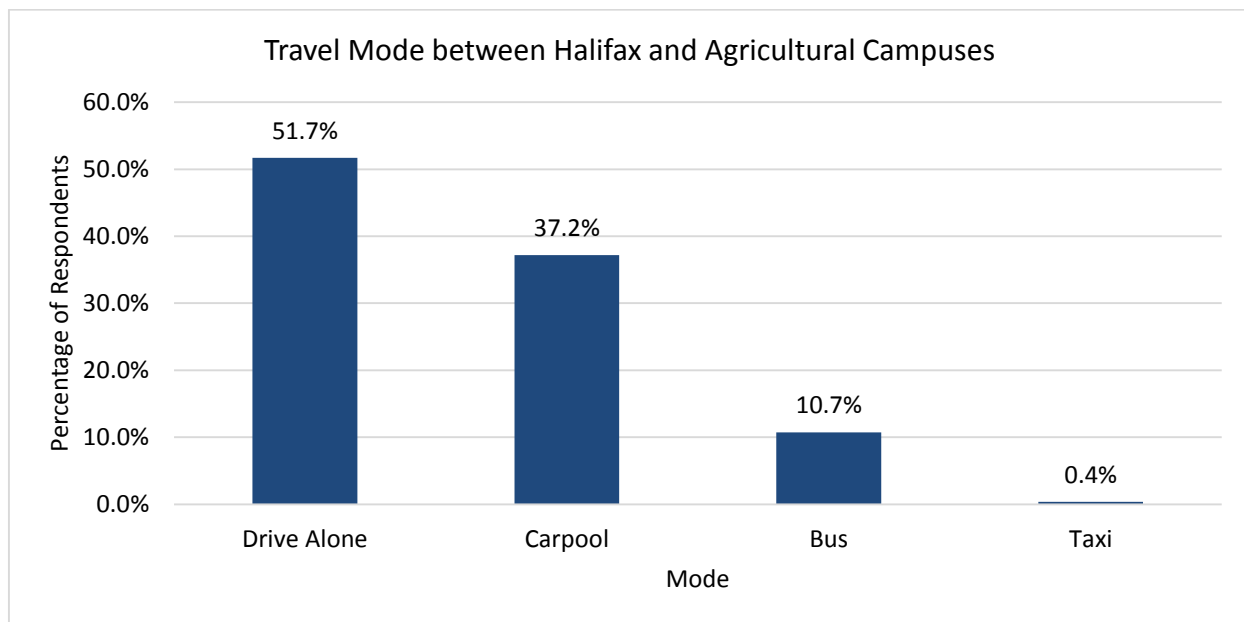


Figure 4-15 Travel Mode between Halifax and Agricultural Campuses (2014)

4.8 Carpooling

Figure 4-16 shows the percentage of respondents that carpool for the 2014 Sustainability Survey. Approximately 68% of respondents that commuted primarily using automobile passenger did not carpool. The other 32% of survey respondents were involved in carpooling.

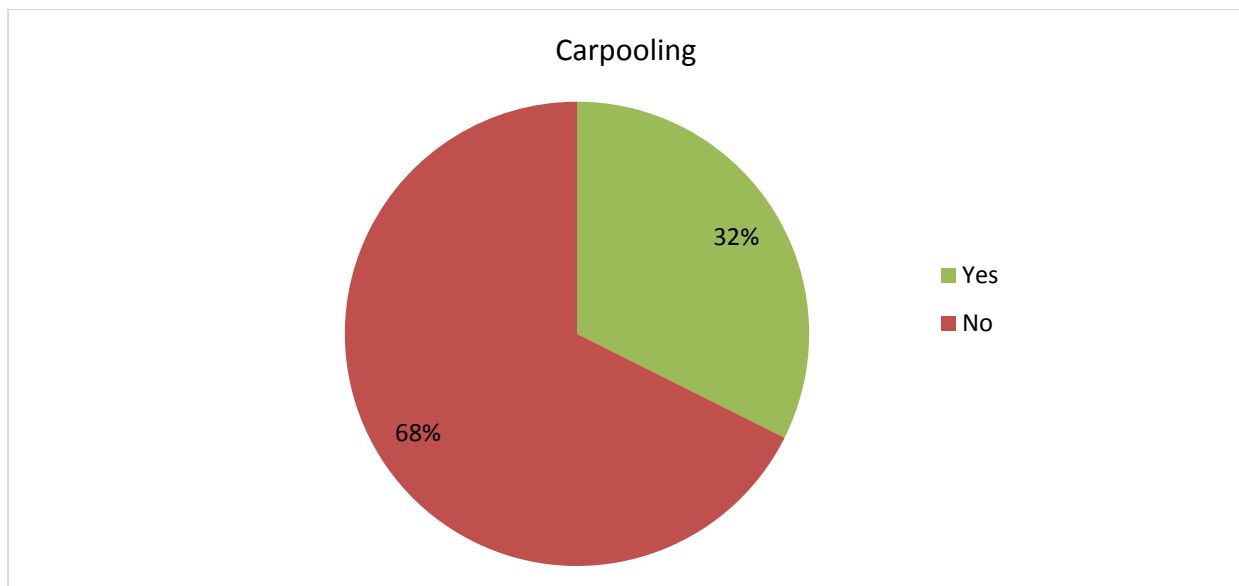


Figure 4-16 Percentage of Auto Passengers that Carpooled (2014)

5. PARKING BEHAVIOUR

Figure 5-1 shows where respondents choose to park their cars and Figure 5-2 shows the percentage of total respondents that purchased parking permits at Dalhousie University. Around two thirds of survey respondents parked their cars in Dalhousie parking lots. Using on-street free parking was the second most popular parking location and only 5.7% of total survey respondents used metered parking. Around three quarters of respondents did not purchase any parking permit. The remaining respondents bought different types of parking permits, with the general annual parking permit being the most popular type.

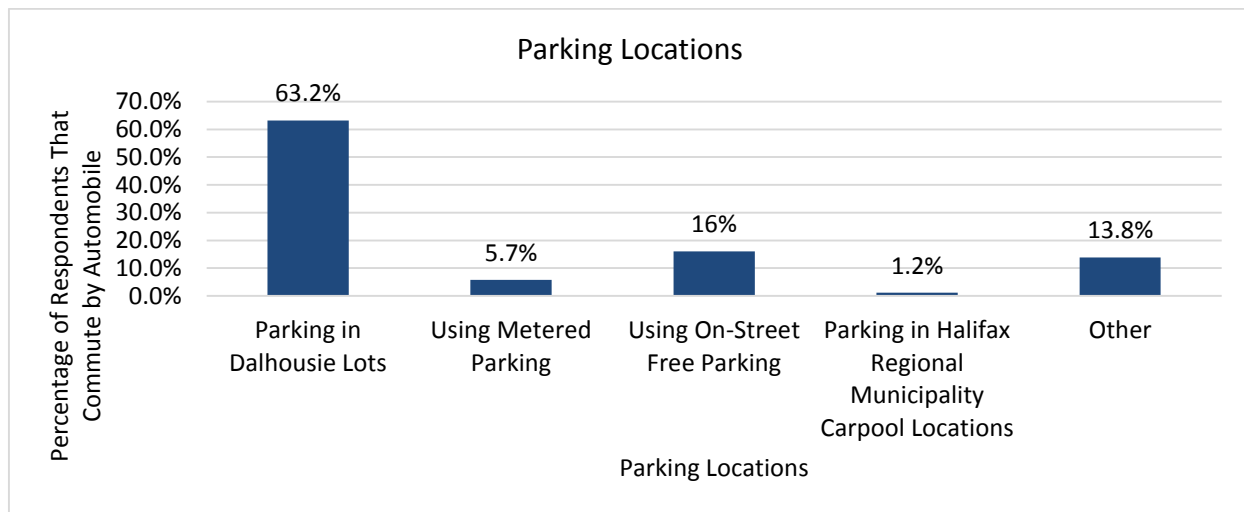


Figure 5-1 Parking Locations of Automobile Commuters (Drive Alone or Auto Passenger, 2014)

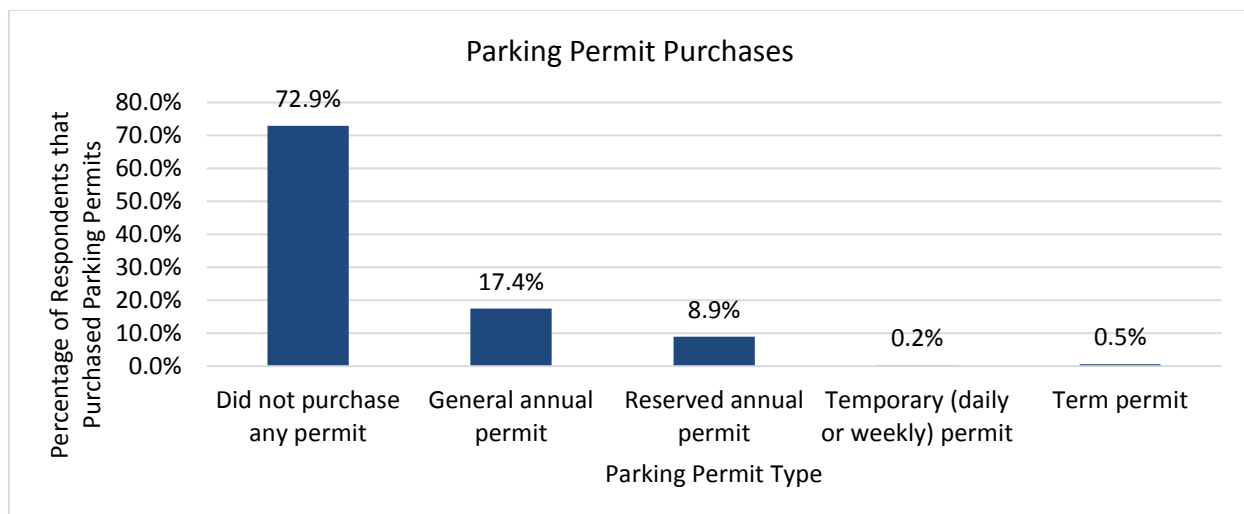


Figure 5-2 Percentage of Total Respondents Purchasing Parking Permits at Dalhousie University (2014)

5.1 Shared Mobility

5.1.1 Interest in Carpool Initiatives

Figure 5-3 shows carpooling interest among all of the respondents for the 2014 Sustainability Survey. Around two fifths of respondents were interested in carpool initiatives. Carpooling with friends was the most popular type of carpooling initiative, followed by carpooling with anyone and with co-workers. Around two fifths of survey respondents were not interested in any carpool initiative. Subsequently, 21.4% of respondents were not sure about their interest in carpool initiatives, which could be due to a lack of sufficient information.

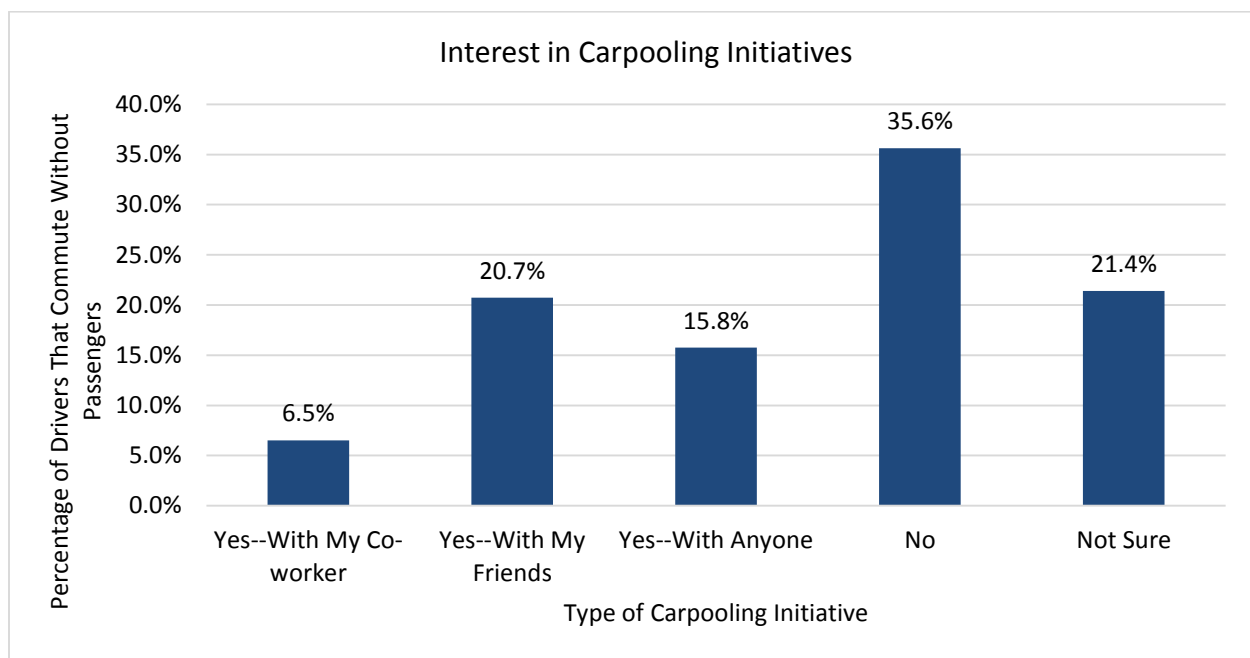


Figure 5-3 Respondents who Drive Alone that are Interested in Carpooling Initiatives (2014)

6. CAMPUS DIFFERENTIATION

Each of Dalhousie University's campuses has unique commuting behaviour. Understanding the needs of each campus will aid in planning and designing sustainable transportation programs for Dalhousie University.

6.1 Modal Split by Campus

6.1.1 Primary Mode

Figure 6-1 compares the primary commuting mode for all four Dalhousie campuses (Agricultural, Carleton, Sexton and Studley) for respondents of the 2014 Sustainability Survey. Figure 6-2 compares the primary commuting mode between the Truro and Halifax campuses. Automobile (drive alone and passenger) was the most used primary commuting mode to the Agricultural campus by survey respondents, compared to the Halifax campuses where the primary mode was walking. Public transportation was not used as a commuting mode for Agricultural campus survey respondents, as it is not serviced by public transit. More survey respondents from the Halifax campuses commuted by bicycle as a primary mode to and from campuses compared to the Agricultural campus.

To better understand and analyze the primary commuting mode comparison by campus, a disaggregated analysis was performed based on the respondent groups. Figure 6-3 shows the primary mode by respondent group for the Halifax campuses and Figure 6-4 shows the primary mode by respondent group for the Agricultural campus for the 2014 Sustainability Survey. Broadly, walking was the most used primary commuting mode of students for both the Halifax and Agriculture campuses. Automobile (drive alone and passenger) was the most used primary commuting mode of staff and faculty members for both the Halifax and Agricultural campuses. More faculty members than staff commuted to and from the Dalhousie campuses by active transportation (walking and bicycle).

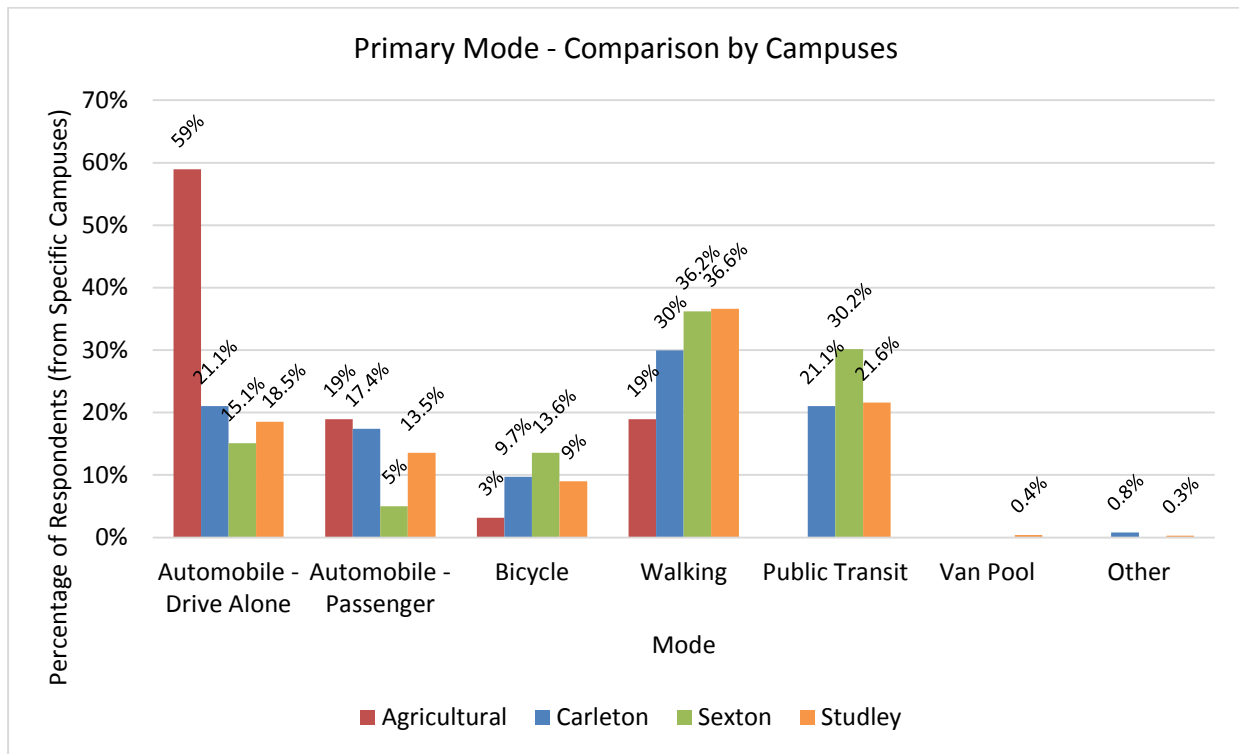


Figure 6-1 Primary Mode - Comparison by Campuses (2014)

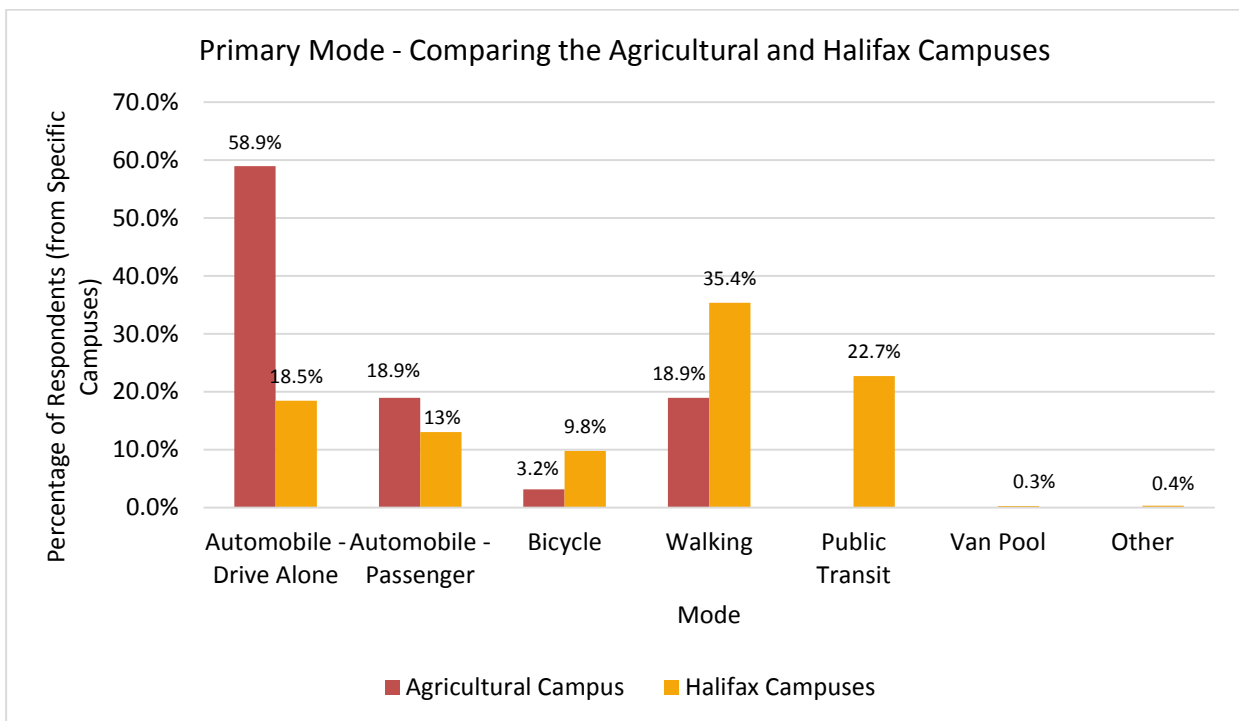


Figure 6-2 Primary Mode - Comparing the Agricultural and Halifax Campuses (2014)

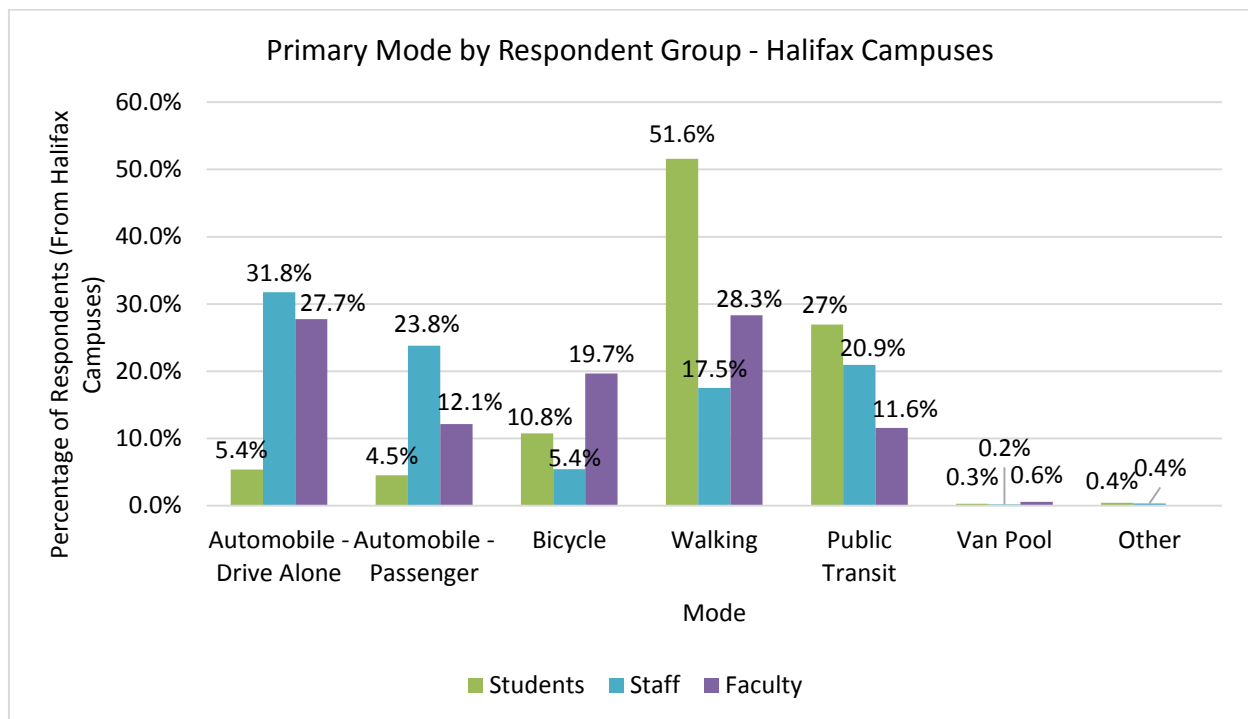


Figure 6-3 Primary Mode by Respondent Group for the Halifax Campuses (2014)

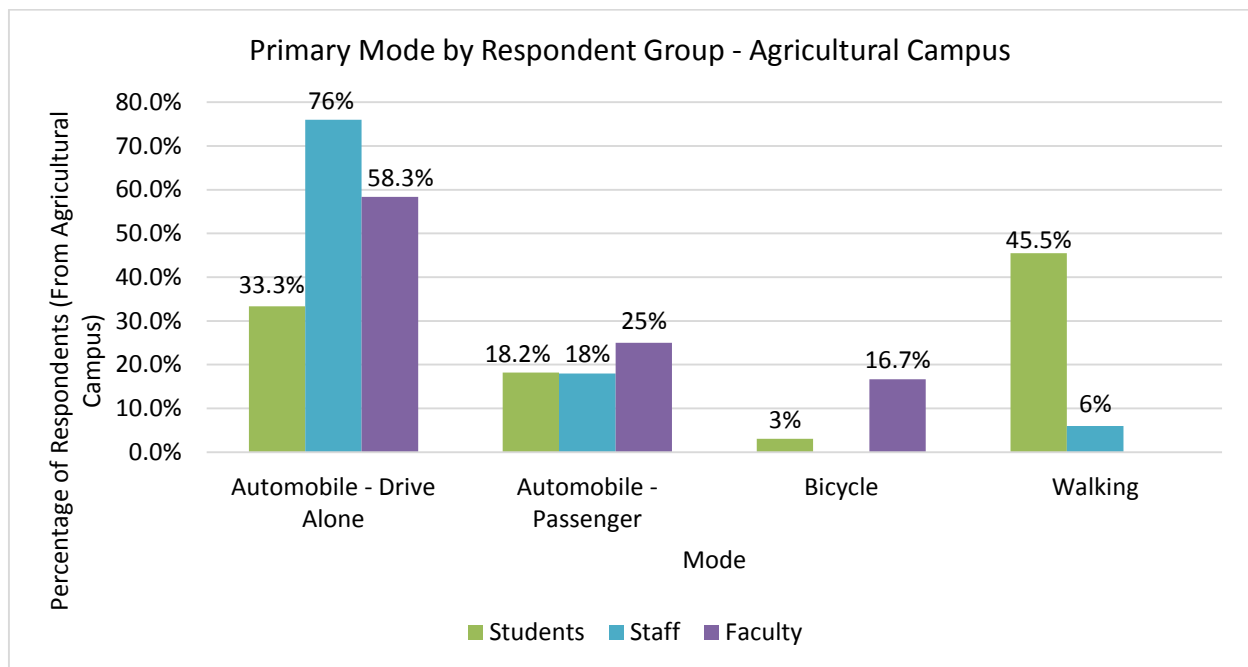


Figure 6-4 Primary Mode by Respondent Group for the Agricultural Campus (2014)

6.1.2 Secondary Mode

Figure 6-5 compares the secondary commuting mode for all four Dalhousie campuses (Agricultural, Carleton, Sexton and Studley) and Figure 6-6 compares the secondary commuting mode between the Truro and Halifax campuses of respondents for the 2014 Sustainability Survey. Walking and public transit were the two most popular secondary modes used by survey respondents commuting to and from Dalhousie campuses. Public transportation was not popular on the Agricultural campus for respondents commuting to and from campus, due to the lack of a public transit service. Commuting by automobile (drive alone and auto passenger) was more popular than using a bicycle. Broadly, active transportation (walking and bicycle) and public transportation were more frequently used as the secondary commuting mode to and from the Halifax campuses, where commuting by automobile (drive alone and auto passenger) was primarily used as the secondary commuting mode to and from the Agricultural campus.

Figure 6-7 shows the secondary mode by respondent group for the Halifax campuses and Figure 6-8 shows the secondary mode by respondent group for the Agricultural campus of respondents for the 2014 Sustainability Survey. Active transportation (walking and bicycle) was the mode used most by all respondent groups as the secondary commuting mode to and from Dalhousie campuses. Walking was the most used secondary commuting mode for students, faculty members and staff in both Halifax and Agricultural campuses.

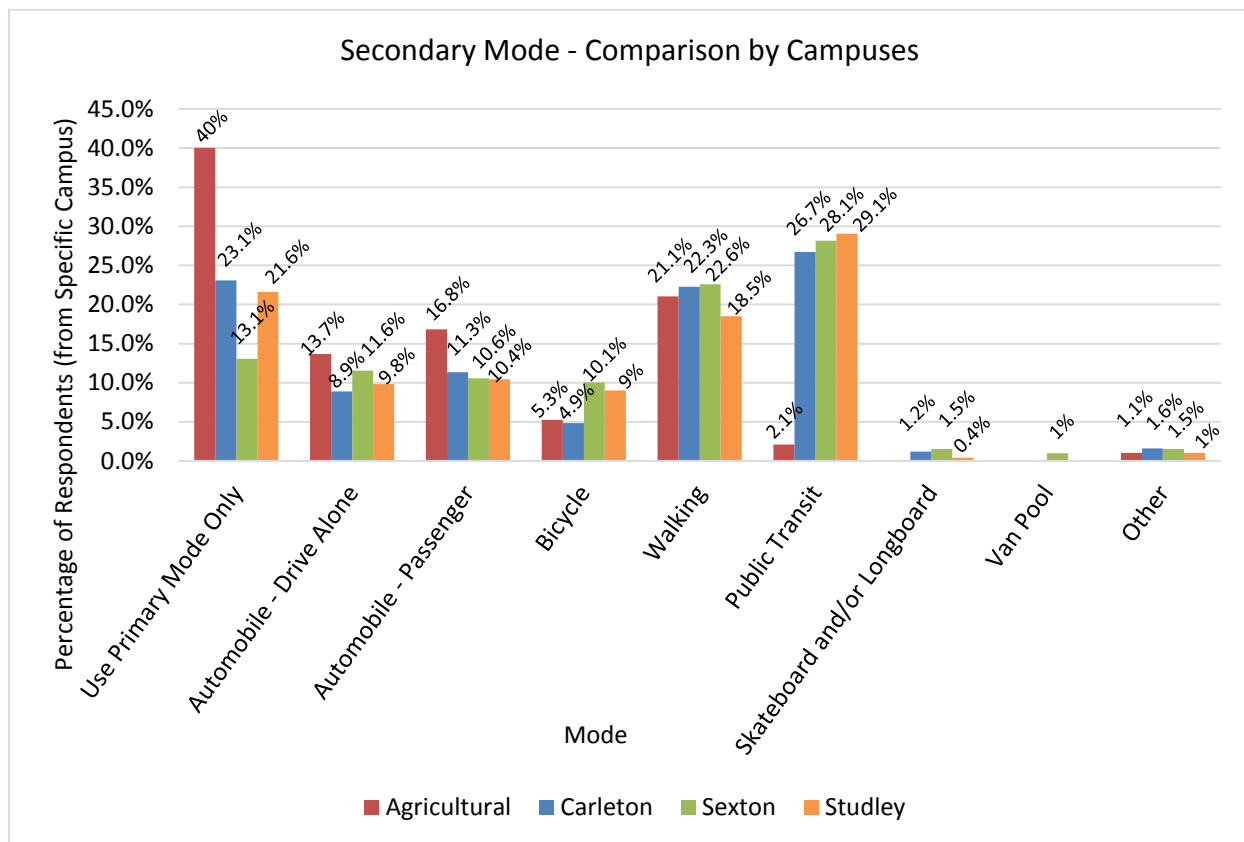


Figure 6-5 Secondary Mode - Comparison by Campuses (2014)

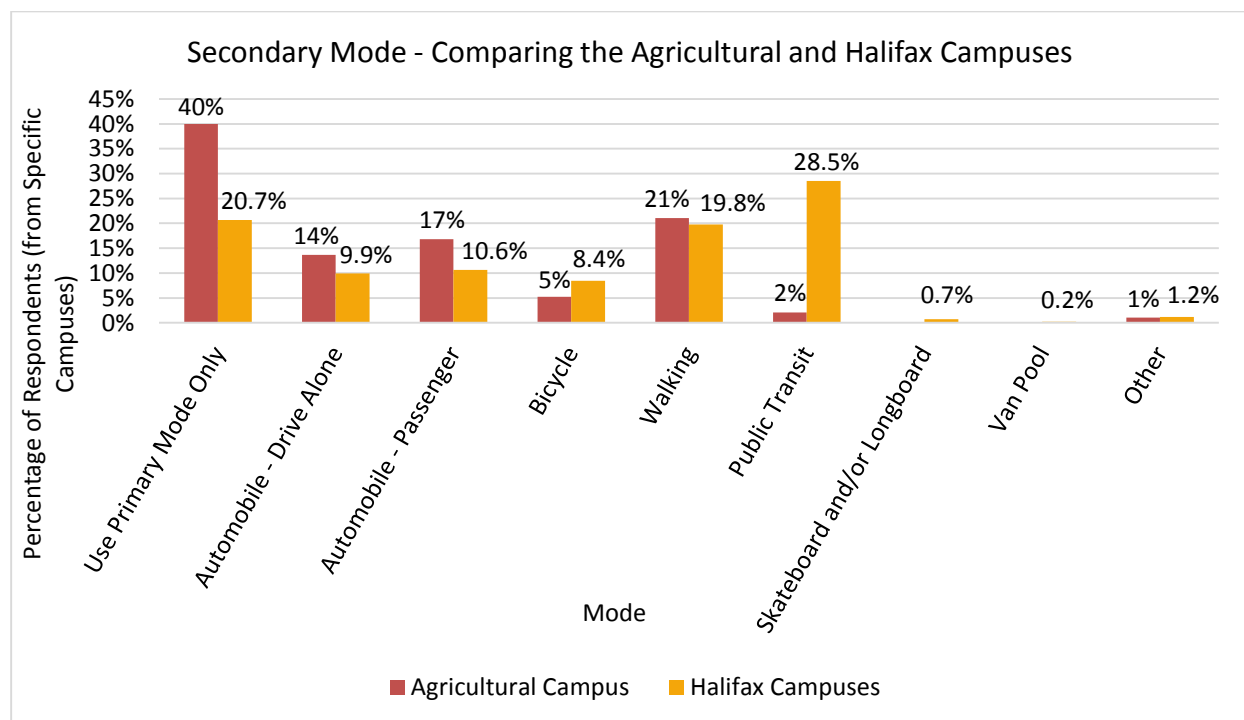


Figure 6-6 Secondary Mode - Comparing the Agricultural and Halifax Campuses (2014)

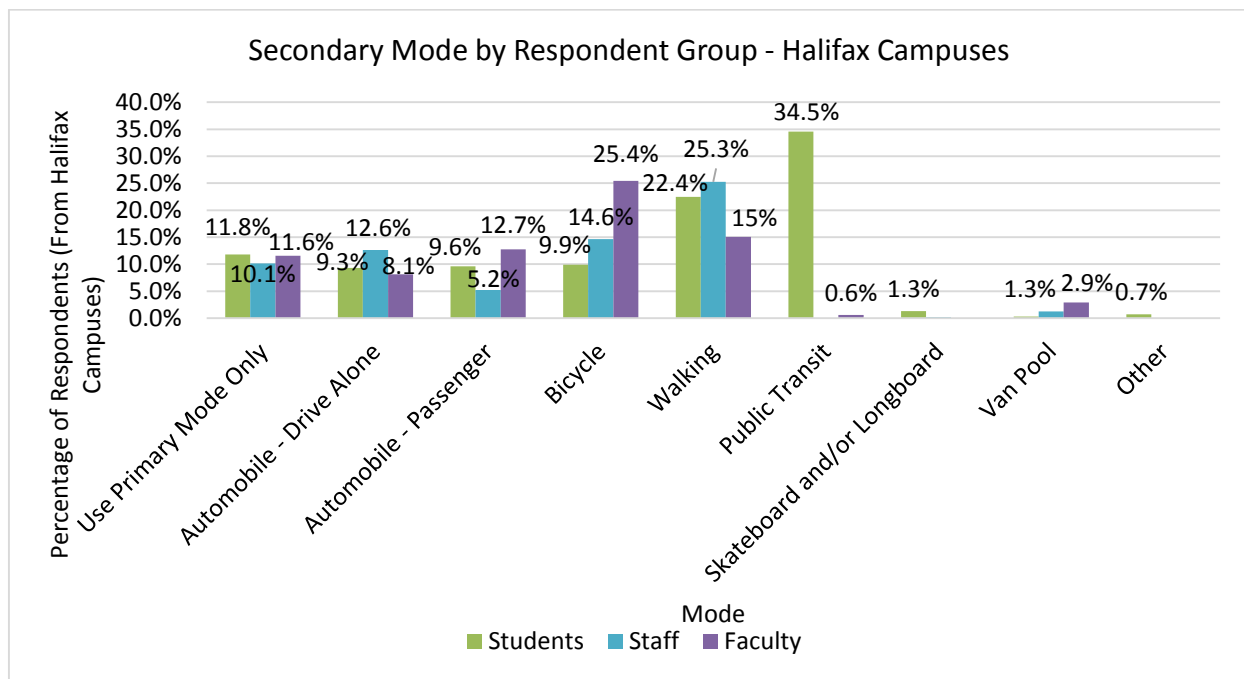


Figure 6-7 Secondary Mode by Respondent Group for the Halifax Campuses (2014)

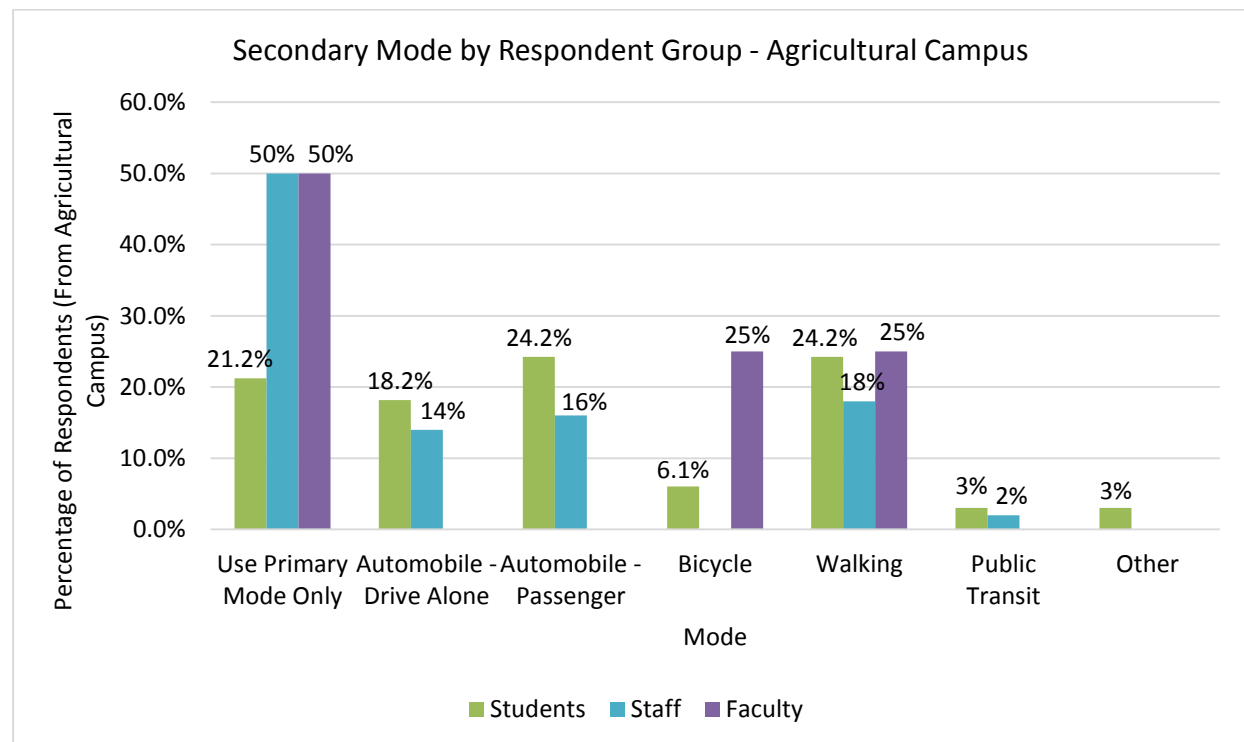


Figure 6-8 Secondary Mode by Respondent Group for the Agricultural Campus (2014)

6.2 Car Ownership and Access by Campus

Figure 6-9 shows car ownership and access by campus for respondents of the 2014 Sustainability Survey. Most of the survey respondents owned a car with respondents from the Agriculture campus having the highest percentage of car ownership (83.2%). A small percentage of respondents have membership in a car sharing service at all of Dalhousie's campuses. There are no car sharing programs near the Agricultural campus.

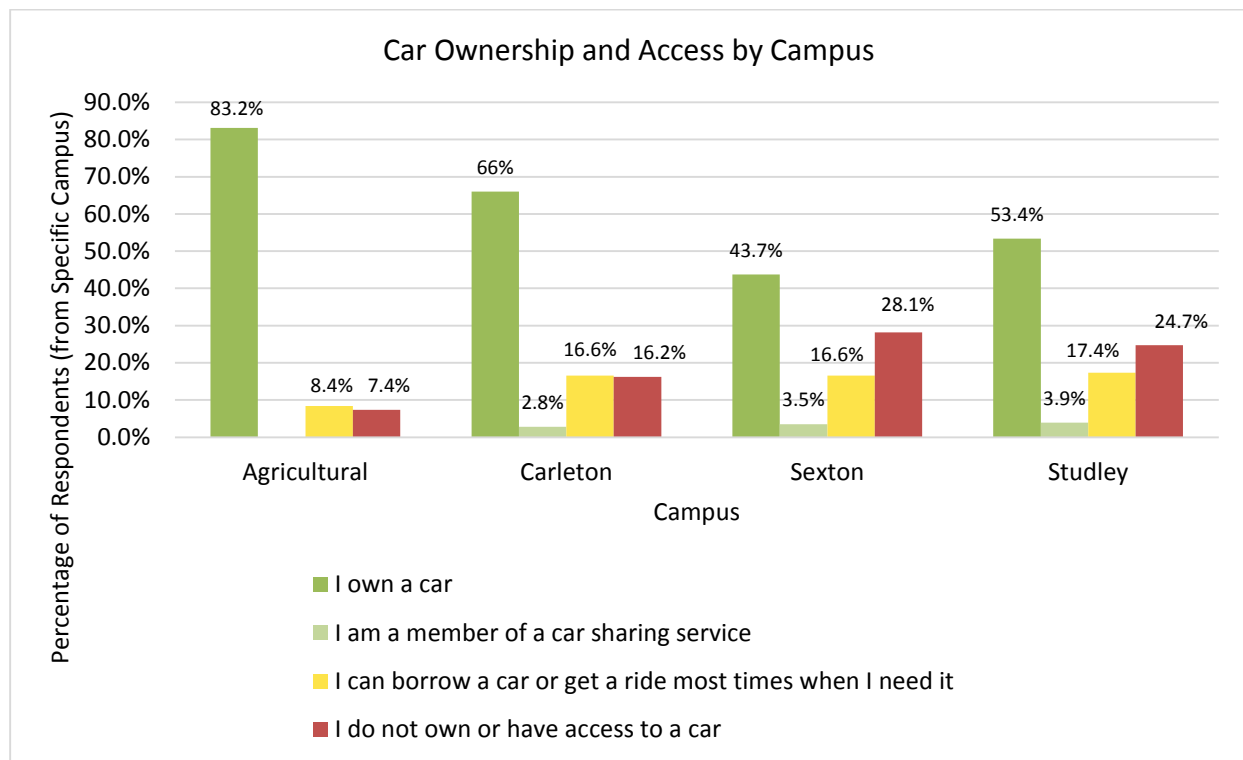


Figure 6-9 Car Ownership and Access by Campus (2014)

6.3 Bicycle Ownership and Access by Campus

Figure 6-10 shows bicycle ownership and access by campus for respondents of the 2014 Sustainability Survey. Survey respondents from the Agricultural campus have the highest percentage of bicycle ownership among all of Dalhousie's campuses. Respondents from the Sexton campus have the highest percentage of bicycle ownership among all of Halifax's campuses.

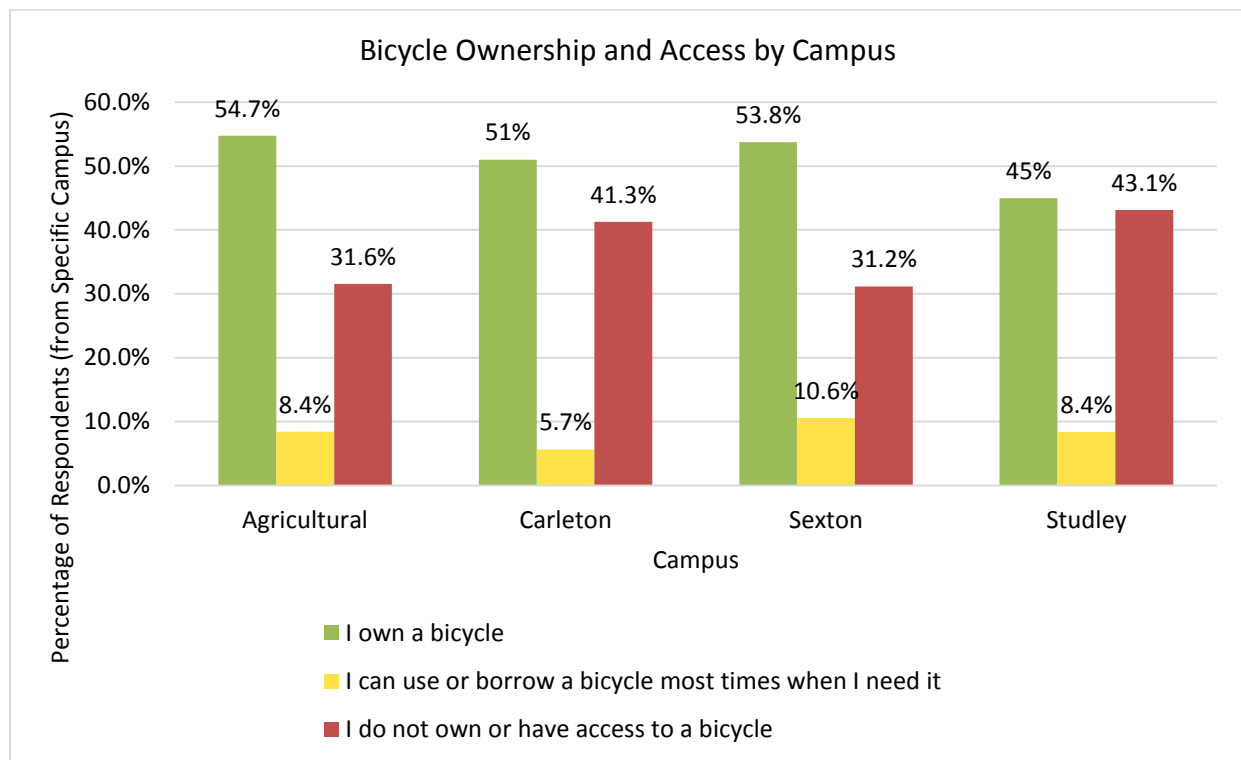


Figure 6-10 Bicycle Ownership and Access by Campus (2014)

6.4 MacDonald Bridge Usage

Due to MacDonald bridge construction expected to begin in 2015, new questions were added to the survey to determine if there would be any disruption to Dalhousie University students, staff and faculty during bridge closure times. Figure 6-11 shows respondent's MacDonald Bridge use on evenings and Figure 6-12 shows respondent's MacDonald Bridge use on weekends. Over half of the survey respondents used the MacDonald Bridge occasionally on evenings and weekends. Around one third of respondents never used the Macdonald Bridge for commuting to and from Dalhousie campuses. The result of this analysis indicates that the MacDonald Bridge construction may not significantly affect many commuting students, faculty members and staff of Dalhousie University.

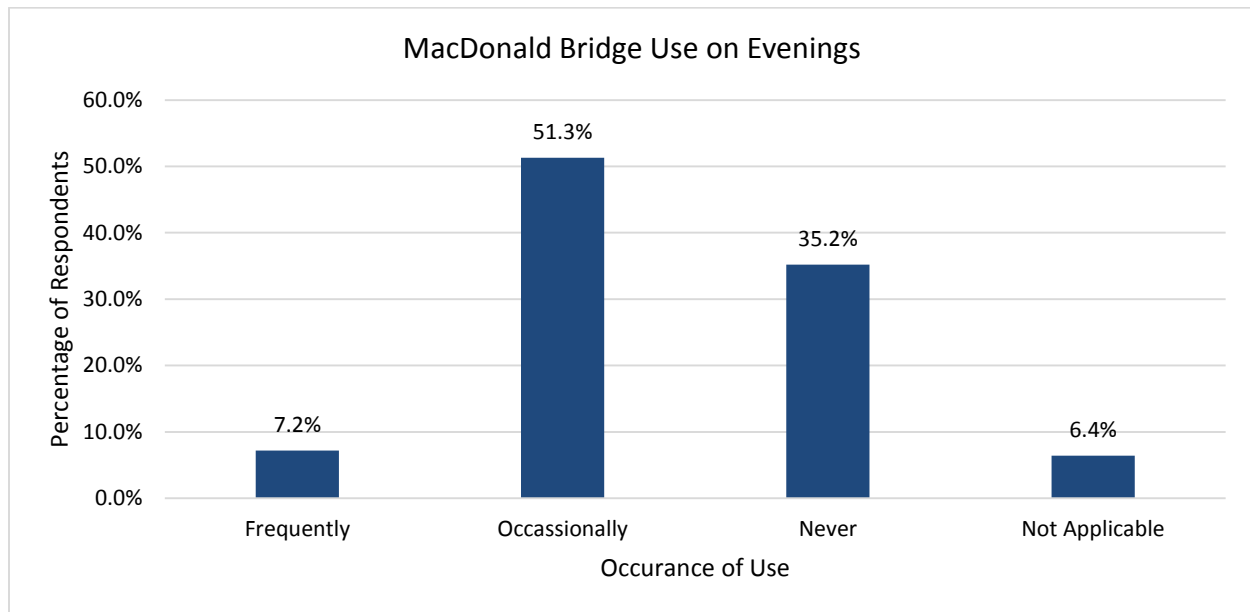


Figure 6-11 MacDonald Bridge Use on Evenings (2014)

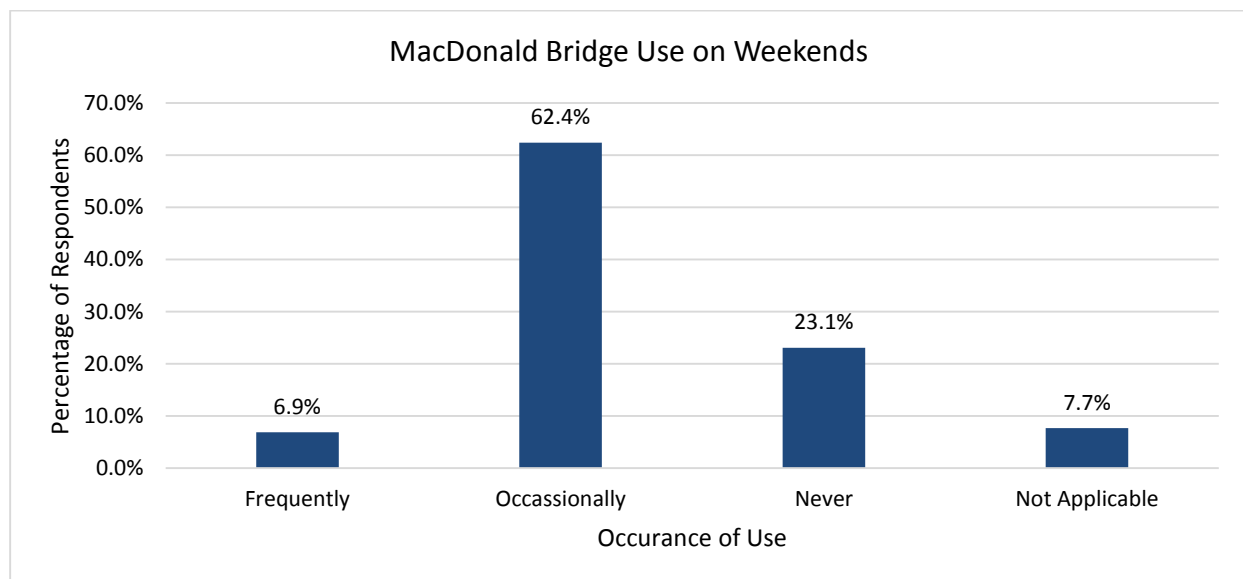


Figure 6-12 MacDonald Bridge Use on Weekends (2014)

6.5 Distance between Respondent Homes and Campuses

6.5.1 Studley Campus Respondents

Figure 6-13, shows that approximately half of Studley campus respondents lived within 5 kilometres of campus, with the highest concentration of these respondents living on the Halifax peninsula.

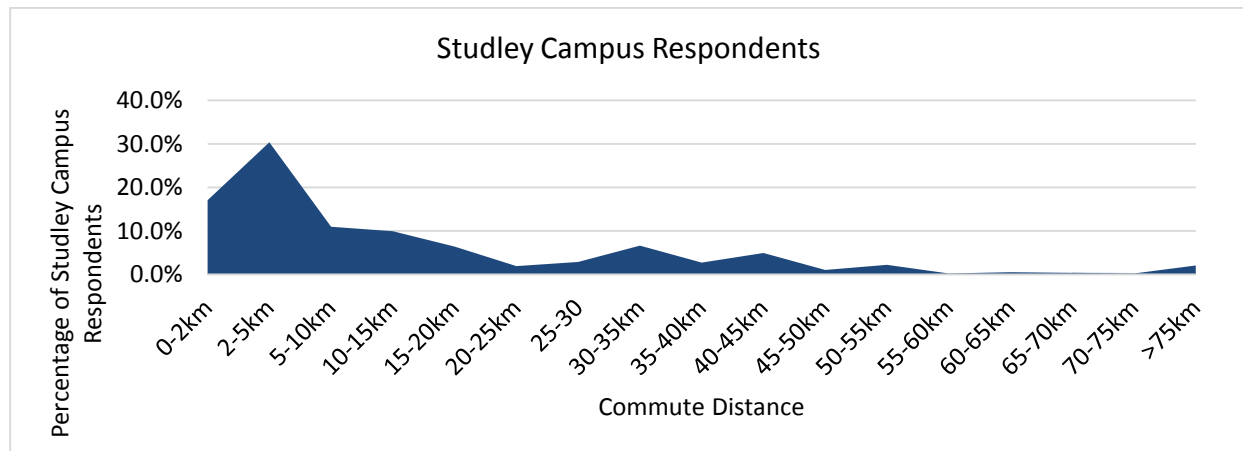


Figure 6-13 Distance Travelled by Studley Campus Respondents (2014)

6.5.2 Sexton Campus Respondents

Most of the Sexton campus respondents lived on the Halifax peninsula, with approximately two thirds living within 5 kilometres of campus (Figure 6-14).

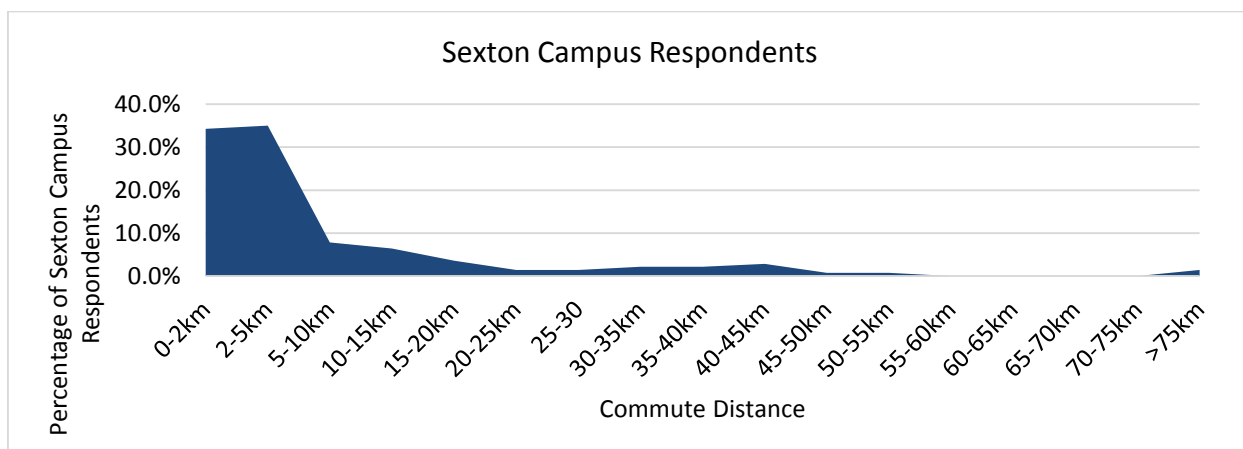


Figure 6-14 Distance Travelled by Sexton Campus Respondents (2014)

6.5.3 Carleton Campus Respondents

Unlike respondents from Studley and Sexton campuses, respondents from Carleton campus were the most geographically dispersed, with under half of Carleton campus respondents living within 5 kilometres of campus (Figure 6-15).

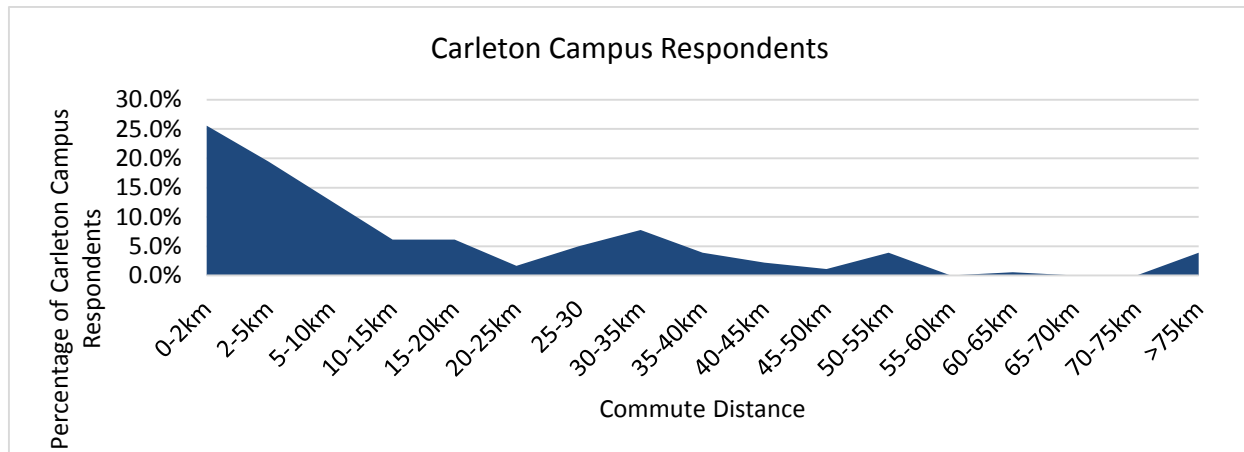


Figure 6-15 Distance Travelled by Carleton Campus Respondents (2014)

6.5.4 Agriculture (Truro) Campus Respondents

Approximately two thirds of the Agricultural campus respondents lived within 5 kilometres of campus (Figure 6-16).

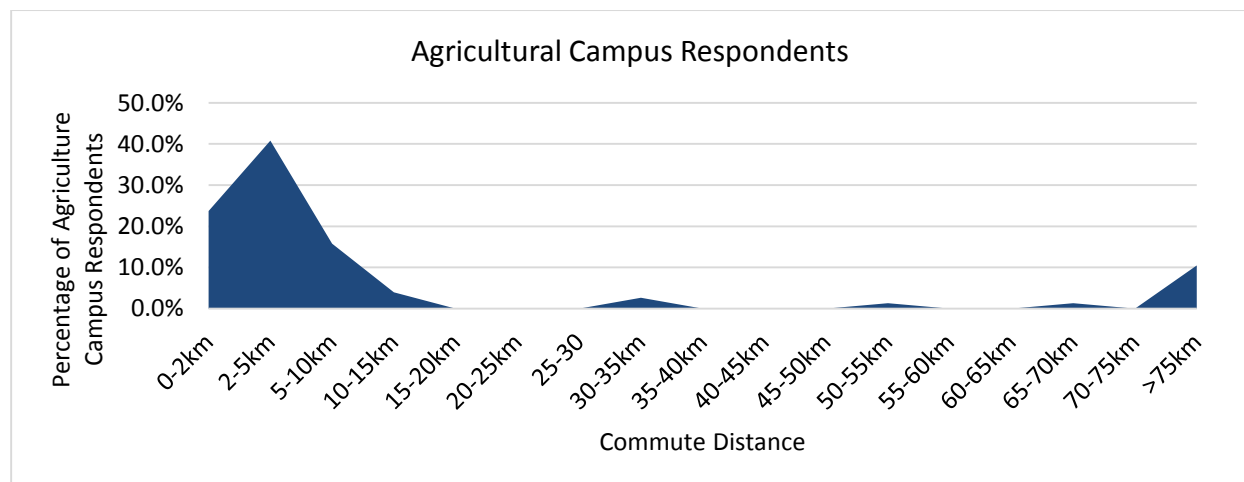


Figure 6-16 Distance Travelled by Agricultural Campus Respondents (2014)

In comparison to respondents from Halifax campuses, the Agricultural campus respondents were living closer to the University campus. However, around 10% of respondents from the Agricultural campus lived over 75km from campus (Figure 6-17).

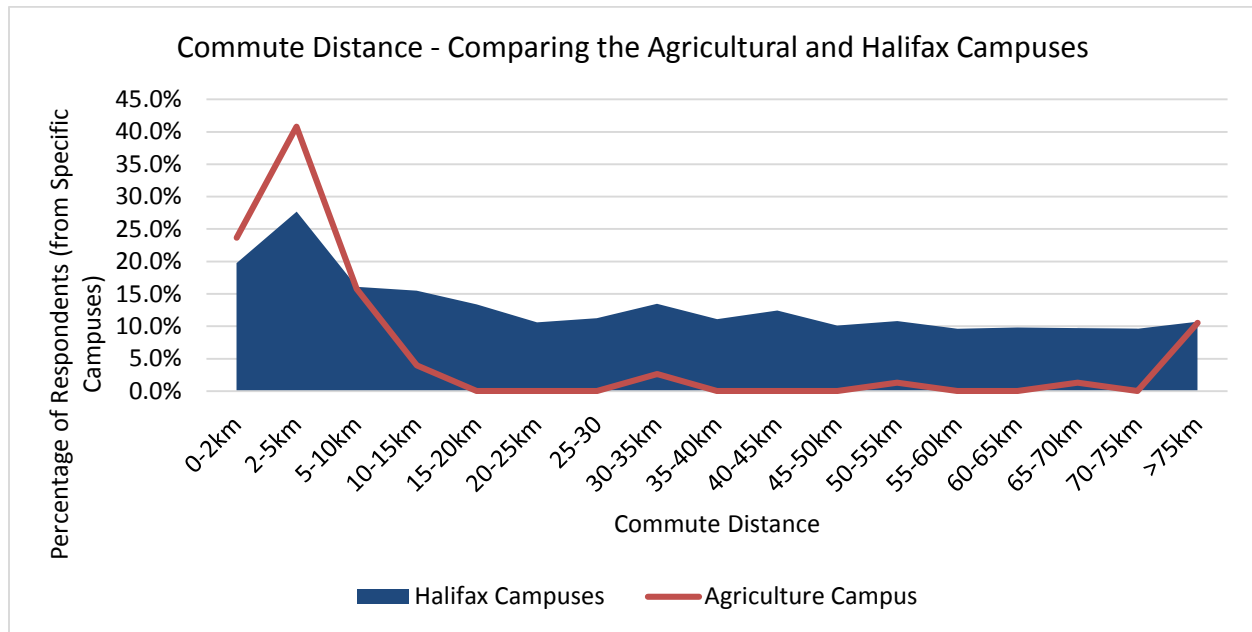


Figure 6-17 Comparing the Average Commuting Distances of Agricultural and Halifax Campuses (2014)

7. COMPARISON BY YEAR

The Dalhousie Sustainability Survey has been conducted since 2009. To achieve consistent analysis for Dalhousie campuses, each year a series of consistent questions are asked, such as: primary and secondary modes, and commuting distances and times (Appendix A). Analysis of questions over time can provide an opportunity to observe changes in the travel behaviour of the commuters over time (Appendix B).

7.1 Modal Split Comparison (2009-2014)

7.1.1 Comparison of Primary Mode

Figure 7-1 shows the comparison of primary commute modes over time (2009 to 2014). Figure 7-2 and Figure 7-3 show the comparison of the primary commute modes by respondent group. With a few exceptions, over the past six years, the order of the primary mode has not changed. The most popular primary mode is walking. Auto drive (alone) is slightly more popular among survey respondents in comparison with public transit. This result is the same for auto passenger in comparison with bicycle. Disaggregate analysis by respondent group shows that walking is still the most popular primary mode for students. Auto drive (alone) and public transport have a similar percentage rate as the second most popular primary mode for students. Auto drive (alone and passenger) is the most popular primary mode for faculty members and staff. Walking, public transportation and bicycle, respectively, are the next most popular secondary mode for faculty members and staff.

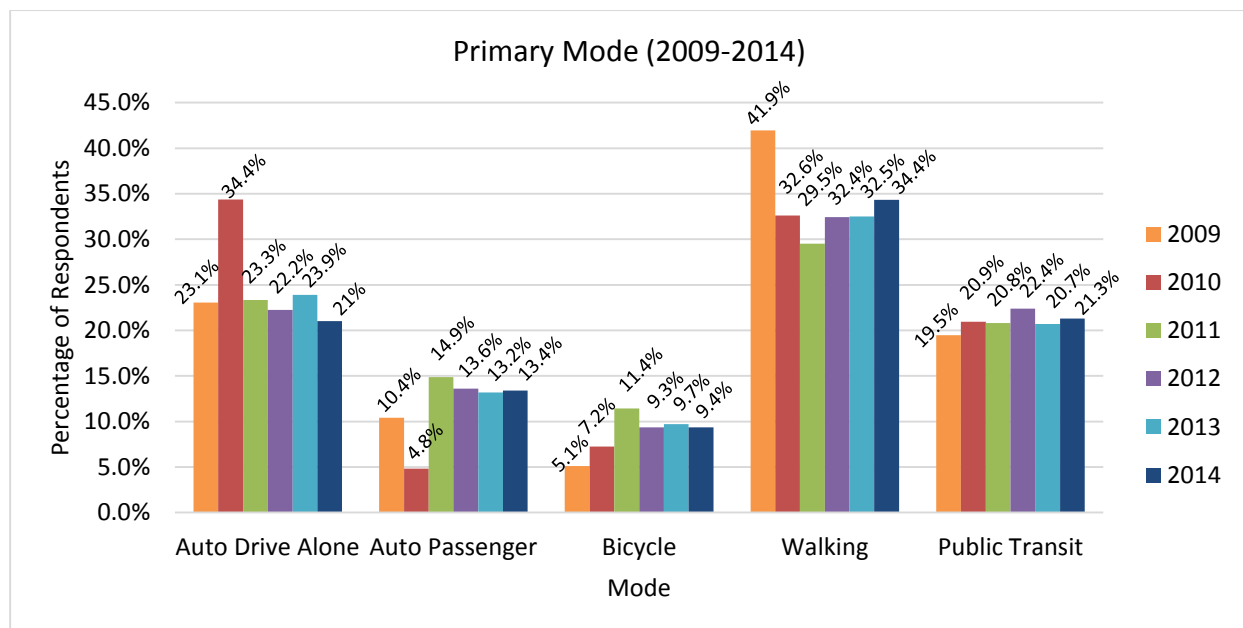


Figure 7-1 Comparing Primary Commute Modes over Time (2009 to 2014)

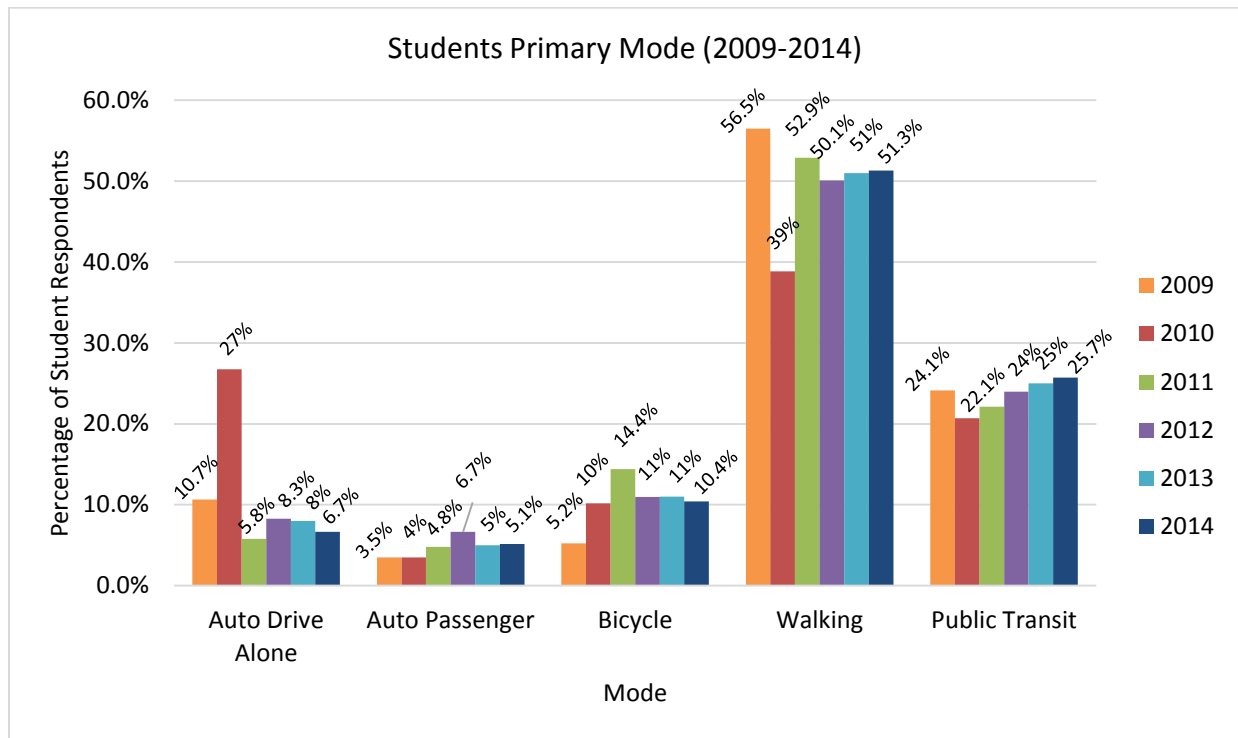


Figure 7-2 Comparing the Primary Commute Modes of Students over Time (2009 to 2014)

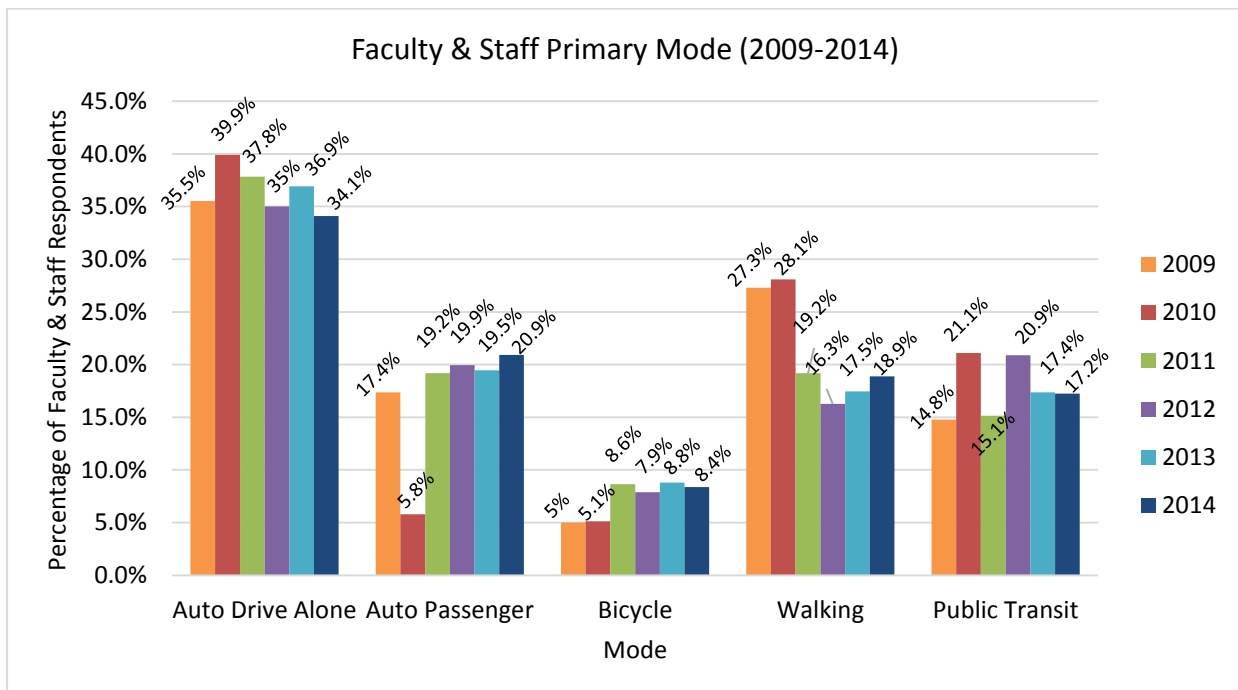


Figure 7-3 Comparing the Primary Commute Modes of Faculty and Staff over Time (2009 to 2014)

7.1.2 Comparison of Secondary Mode

Figure 7-4 shows the comparison of secondary commute modes over time (2009 to 2014). Figure 7-5 and Figure 7-6 show the comparison of the secondary commute modes by respondent group. With a few exceptions, over the past six years, the order of the secondary mode has not changed. Public transit is the most popular secondary mode, followed by walking. Auto drive (alone and passenger) is the third most popular secondary mode. Bicycle mode has the lowest percentage of the secondary mode over time. Public transit and walking remain the most used secondary commute modes for students, faculty and staff over time, when the results are disaggregated by respondent group.

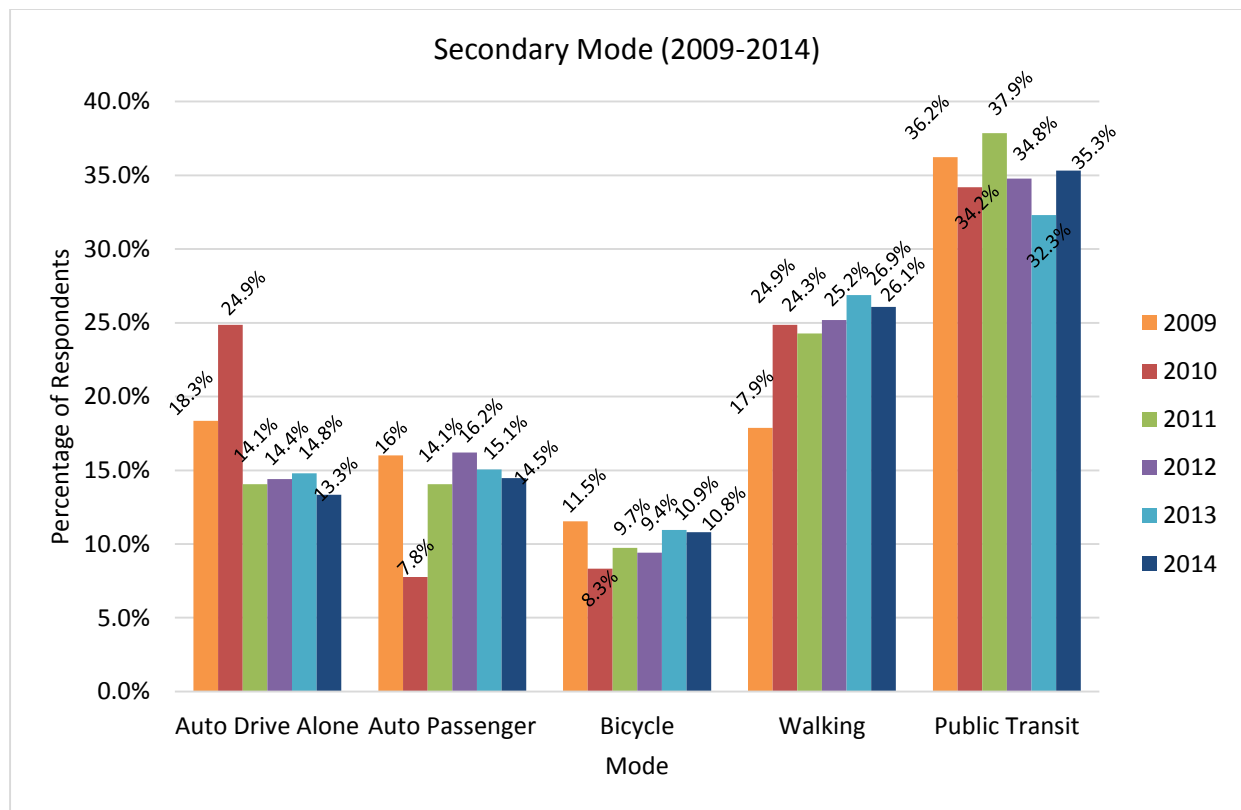


Figure 7-4 Comparing Secondary Commute Modes over Time (2009-2014)

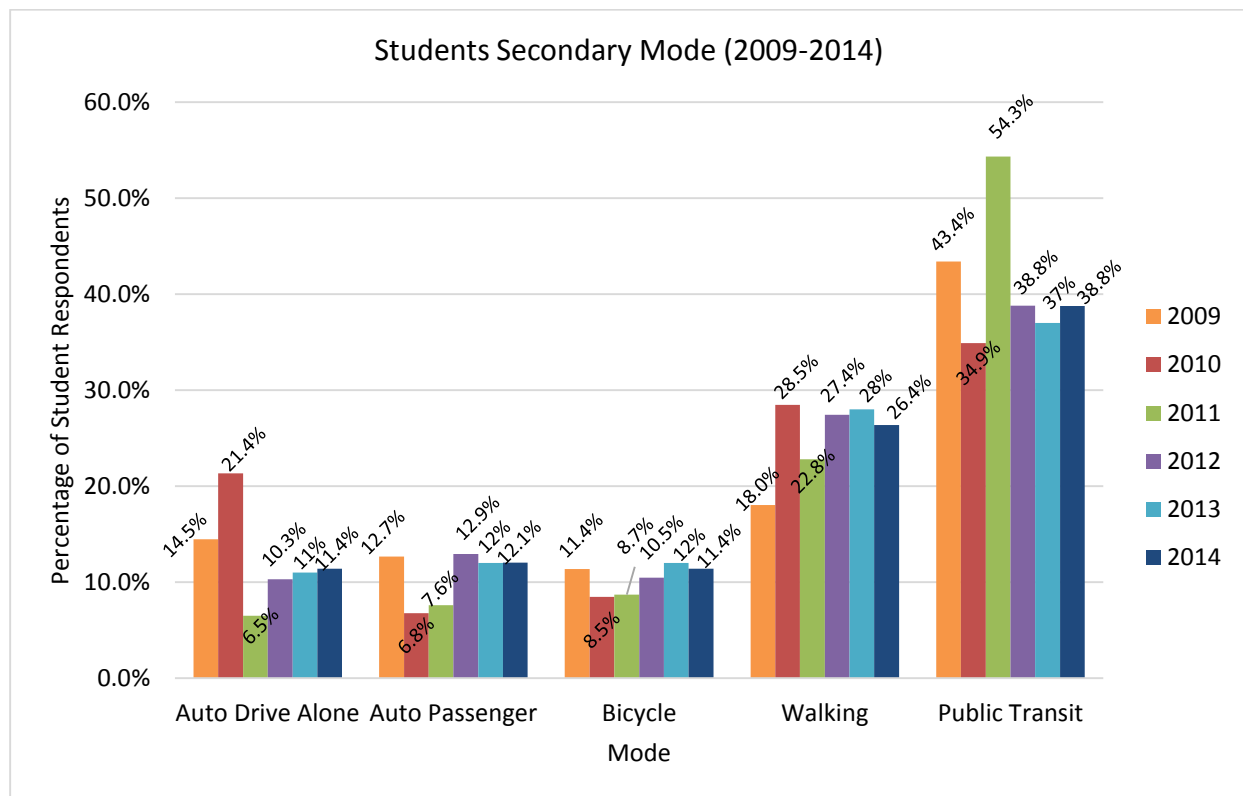


Figure 7-5 Comparing the Secondary Commute Modes of Students over Time (2009 to 2014)

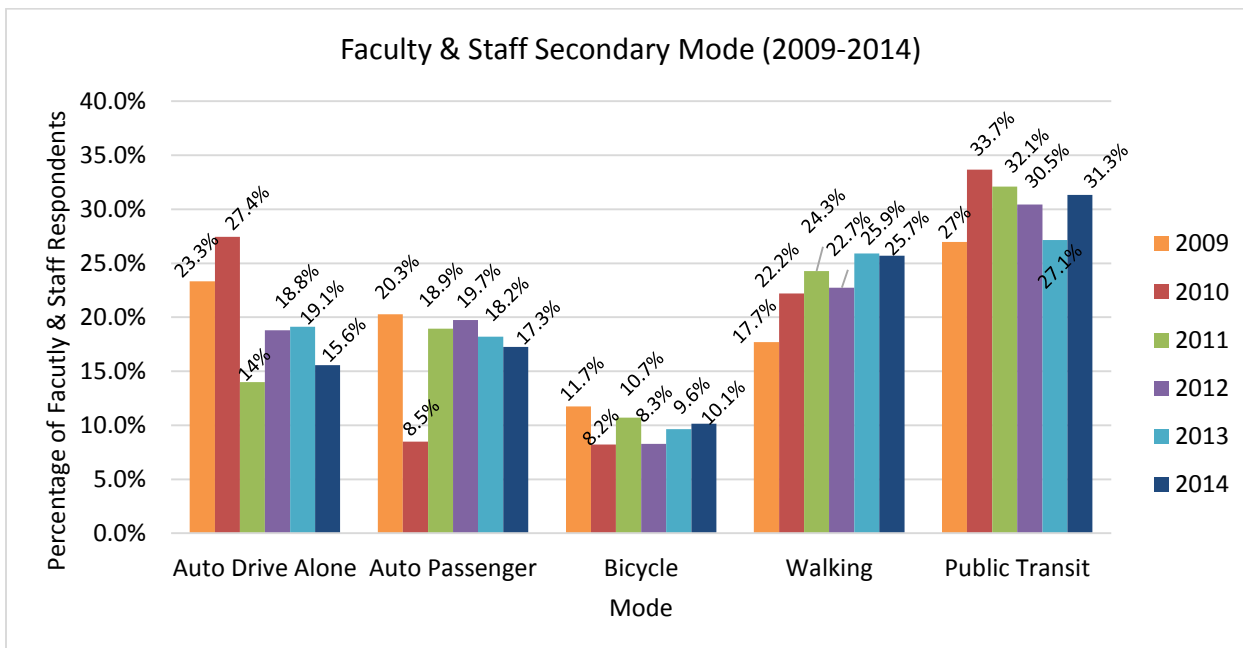


Figure 7-6 Comparing the Secondary Commute Modes of Faculty and Staff over Time (2009 to 2014)

7.1.3 Comparison of combined modes

Figure 7-7 shows the comparison of the Halifax campuses combined mode of all commuters over time (2009-2014) and Figure 7-8 shows the comparison for the Agricultural campuses combined mode of all commuters (2012-2014). As shown below, the combined modes have the same order over time.

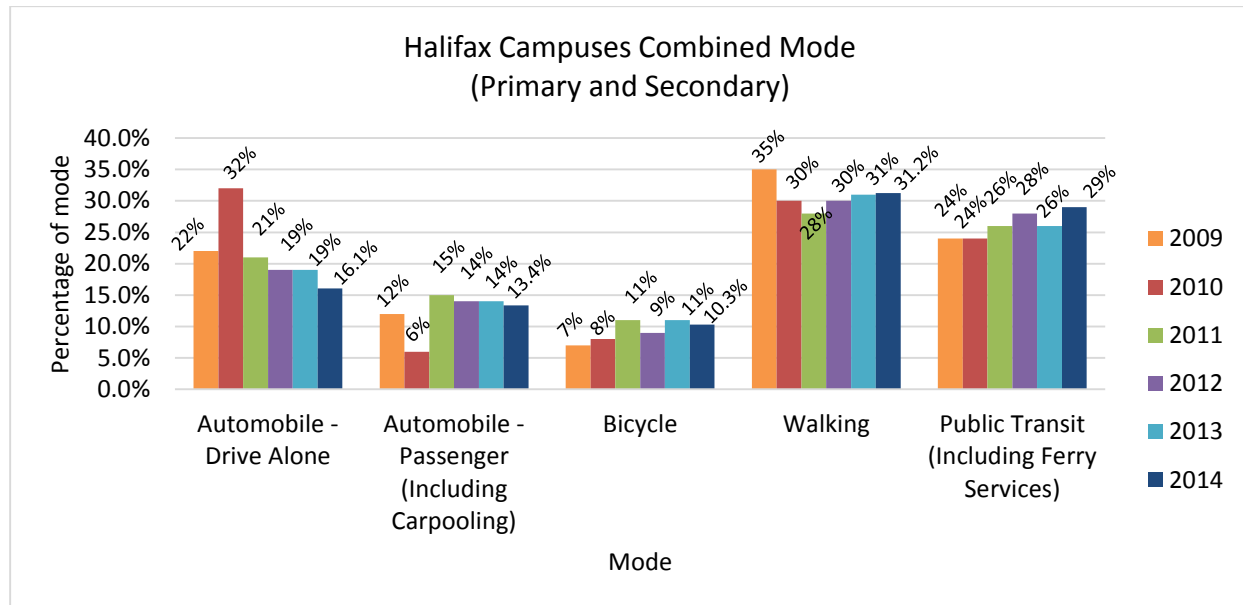


Figure 7-7 Comparing the Halifax Campuses Combined Mode of all Commuters (2009-2014)

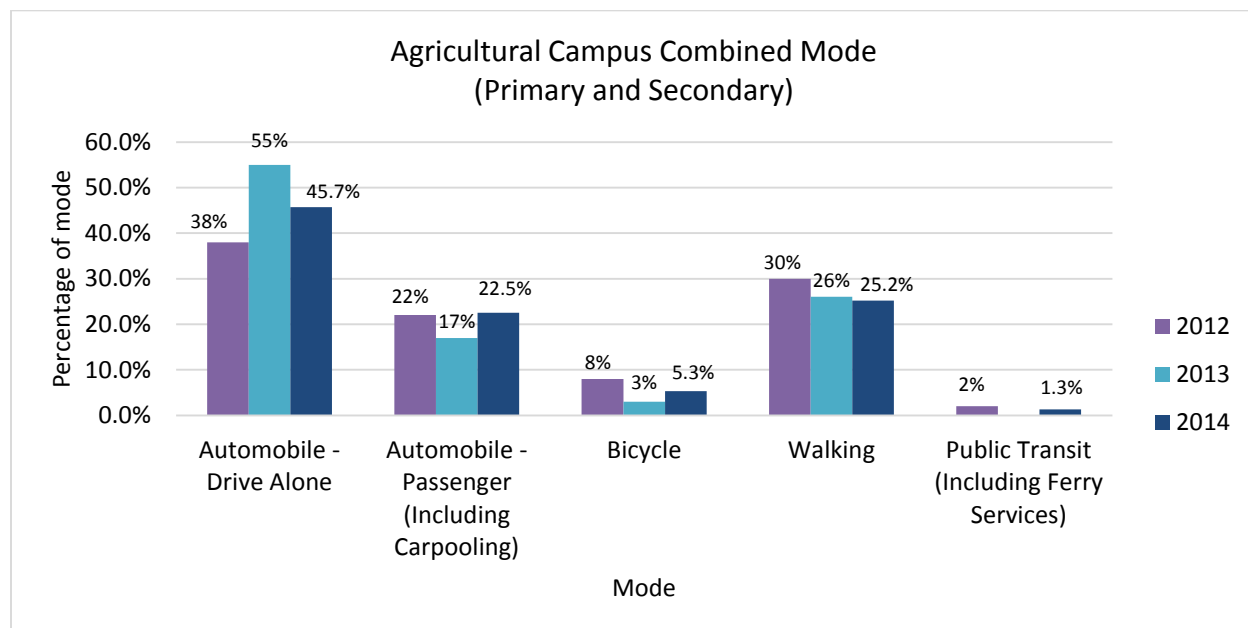


Figure 7-8 Comparing the Agricultural Campuses Combined Mode of all Commuters (2012-2014)

7.2 Travel Time

Figure 7-9 shows the comparison of the average commute times of the 2009-2014 respondents of the Sustainability Survey. Consistently over the last six yearly surveys, commuting time between 11 to 20 minutes has the highest percentage (30.2%). Between 2010 and 2011, there was a growth in a commuting time of less than 10 minutes (18.5% in 2010 to 24% in 2011) which has since decreased to 17.1% of respondents. The percentage of respondents that have a commute time of 21-50 minutes generally decreases for all years, whereas commute time of greater than 51 minutes has increased slightly over the last year. The results shows that the majority of respondents are living closer to the Dalhousie campuses.

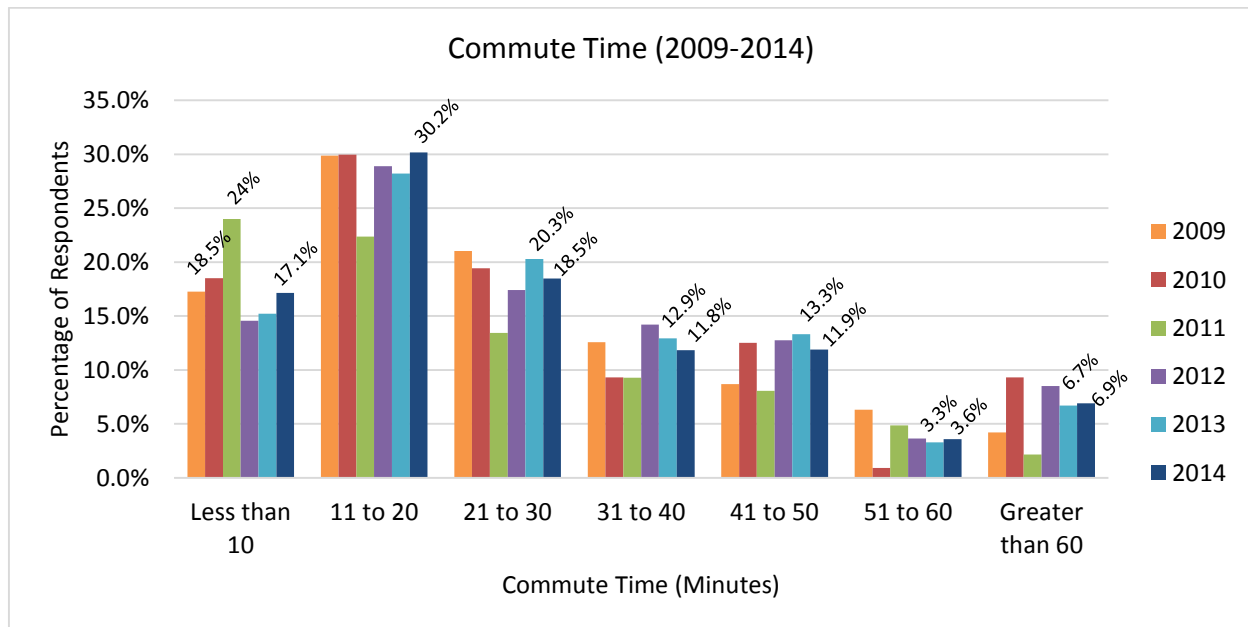


Figure 7-9 Comparing the Average Commute Times (2009-2014)

7.3 Commuting Distance

Figure 7-10 shows the comparison of the average commute distances of the 2011-2014 Sustainability Survey respondents. Commuting distance of all the respondent groups has increased over time, however the increase is the most noticeable for Dalhousie staff.

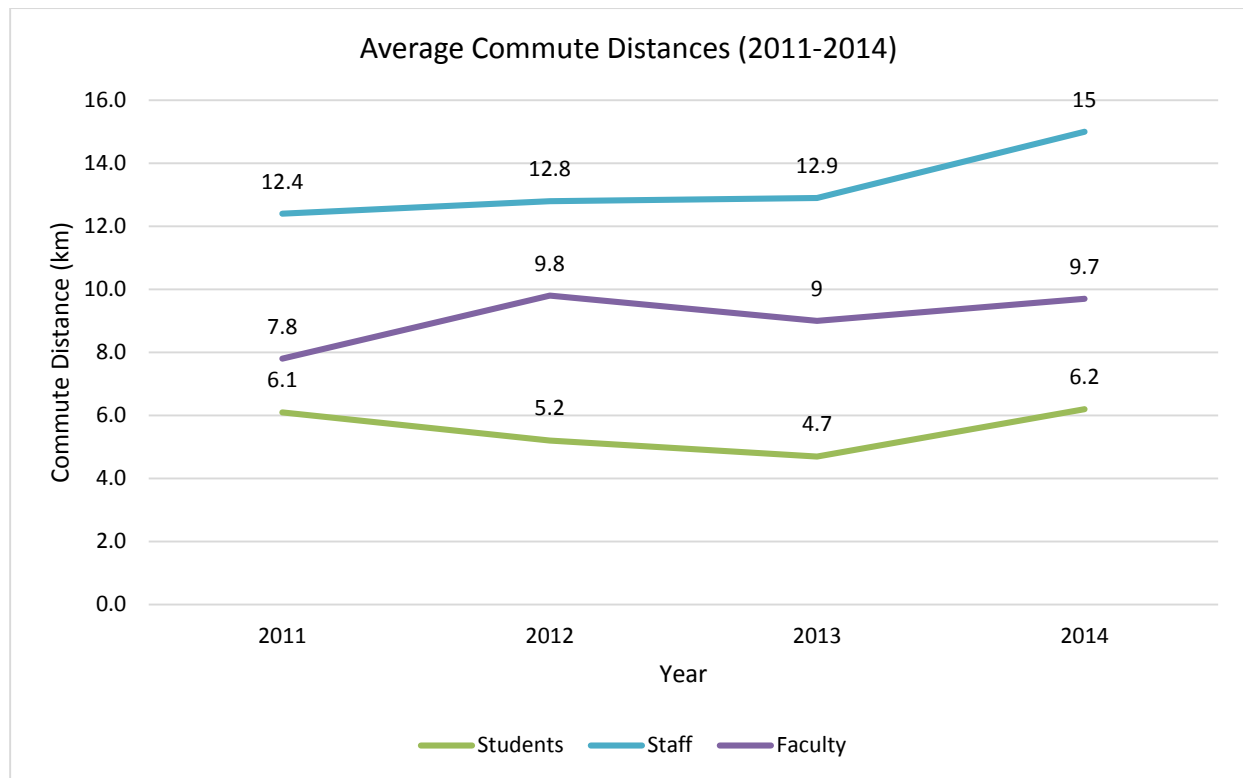


Figure 7-10 Comparing the Average Commute Distances (2011-2014)

8. RECOMMENDATIONS FOR THE 2015 SURVEY

The following suggestions and recommendations should be considered when conducting Dalhousie's 2015 Sustainability Survey.

1. Clarification of question six should be included in the next survey. For the 2014 Sustainability Survey the question stated "What kind of Dalhousie University parking permit did you purchase this year?" when it should state "If your primary mode is automobile (drive alone or passenger), what kind of Dalhousie University parking permit did you purchase?" As a result of this not being stated for this survey over 70% of respondents said they did not buy a parking pass.
2. Future surveys should incorporate a question to gauge the percentage of respondents who drive to a transit park and ride location and then take the bus or ferry to commute.
3. It is recommended that a question be added regarding part time or full time study or work at Dalhousie University (e.g. Are you full time or part time student/employee?), as this can effect commuting distances and times.
4. Some questions should include a short description to help the reader better understand the question (e.g. interest in carpooling). In the 2014 Sustainability Survey a noticeable amount of respondents chose "not sure" as their response to question 12 about their interest in a carpooling initiative. It could be because the respondent did not understand the content of the question. Another example would be the bicycle ownership question (question 18). The question should be clarified to state that bicycle ownership means that they are using it for commuting to or between the Dalhousie campuses.

9. CONCLUSION

Traveling by automobile (drive alone and auto passenger) and walking were the most popular primary commuting modes for respondents of Dalhousie University 2014 Sustainability Survey. Public transit and automobile (drive alone and auto passenger) were the most popular secondary commuting modes. The highest percentage of automobile users were staff and faculty members, respectively, as they live farther from Dalhousie University compared to students. Students who live closer to Dalhousie's campuses commute to the University by active transportation (walking and bicycle) and public transportation. The greatest percentage of survey respondents did not show interest in the carpool initiative as individual car ownership is higher. Most of the survey respondents used general parking at Dalhousie lots to park their car and approximately half of the survey respondents owned a bicycle.

Walking and public transit were the most popular commuting modes between campuses. Respondents from the Agriculture campus travel more by automobile (drive alone and auto passenger) compared to respondents from Halifax campuses. This result is consistent with car ownership where the percentage of car ownership for the Agriculture campus is higher than for the Halifax campuses. In comparison, respondents from the Halifax campuses used active transportation and public transportation more for commuting to the University. This report also compared the results of the 2014 Sustainability Survey with survey results for the 2009, 2010, 2011, 2012 and 2013. The comparison show that there is no major differences over time for commuting distance and time between the respondent groups.

Table 9-1 General Summary of the 2014 survey results

	Most Popular Response	Second Most Popular Response
Primary Mode	Automobile	Walking
Secondary Mode	Public Transit	Automobile
Do you carpool?	68% No	32% Informally
Car Ownership	62% Yes	-
Bike Ownership	51% own a bike	-
Parking	Dalhousie Lots	Free On-Street Parking
Intercampus Travel Frequency	Rarely	Never
Intercampus Travel Mode	Walking	Public Transit

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Appendix

A. Code Book for 2014 Survey

Question #	Description	Codes	
1	I hereby agree that I have read and understood these instructions. I also have the knowledge that I am free to withdraw from the survey at any time without penalty	I agree	1
		I do not agree	2
2	What is your primary mode of transportation (70% of the time or more) for your daily commute to campus throughout the year?	Automobile - Drive Alone	1
		Automobile - Passenger (Including Carpooling)	2
		Public Transit (Including Ferry Services)	3
		Van Pool	4
		Bicycle	5
		Walking	6
		Skateboard/Longboard	7
		Other (e.g. Motorcycle, Electric Scooter)	8
3	What is your secondary mode of transportation (less than 70% of the time) for your daily commute to campus?	Not Applicable - Always Use the Primary Mode	1
		Automobile - Drive Alone	2
		Automobile - Passenger (Includes Carpooling)	3
		Public Transit (Including Ferry Services)	4
		Van Pool	5
		Bicycle	6
		Walking	7
		Skateboard and/or Longboard	8
		Other:	9
4	If your primary mode is "automobile - passenger," do you carpool? Carpooling in this context means two or more people - from different households - in a car going to Dalhousie (any of the four campuses) and/or surrounding areas.	Yes	1
		No	2
		Not Applicable (i.e. Automobile passenger is not my primary mode for commute)	3
5	If your primary mode is automobile (drive alone or passenger), where do you generally park your car?	Parking in Dalhousie Lots	1
		Using Metered Parking	2
		Using On-Street Free Parking	3

		Parking in Halifax Region:	
		Municipality Carpool Locations	4
		Not Applicable (i.e. Automobile is not my primary mode for commute)	5
		Other:	6
6	What kind of Dalhousie parking permit did you purchase this year?	Reserved annual permit	1
		General annual permit	2
		Term permit	3
		Temporary (daily or weekly) permit	4
		Did not purchase any permit	5
7	If you bike to campus, do you use bike rack facilities provided by the university?	Yes	1
		No	2
		Do not use a bicycle	3
8	If yes, where do you park your bike?	Studley Campus (ie. The primary campus, between Robie and Oxford St.)	1
		Carleton Campus (ie. The health professions campus, between Robie and Summer St.)	2
		Sexton Campus (ie. The engineering, architecture and planning campus)	3
		Agriculture Campus (ie. The Truro campus)	4
		Other (please specify):	5
9	Do you use a different primary commute mode this year (in comparison to your primary commute mode in 2013-2014)?	Yes	1
		No	2
		Not applicable (first year on campus)	3
10	How many minutes, on average, does it take to get from your home to Dalhousie when you use your primary mode of transportation?	01:00	1
		02:00	2
		03:00	3
		04:00	4
		05:00	5
		06:00	6

		07:00	7
		08:00	8
		09:00	9
		10:00	10
		11:00	11
		12:00	12
		13:00	13
		14:00	14
		15:00	15
		16:00	16
		17:00	17
		18:00	18
		19:00	19
		20:00	20
		21:00	21
		22:00	22
		23:00	23
		24:00	24
11	At what time, on average, do you arrive at Dalhousie? Please identify the time in four-digit 24-hour cycle (i.e. 7 am = 07:00; 2 pm = 14:00)	01:00	1
		02:00	2
		03:00	3
		04:00	4
		05:00	5
		06:00	6
		07:00	7
		08:00	8
		09:00	9
		10:00	10
		11:00	11
		12:00	12
		13:00	13
		14:00	14
		15:00	15
		16:00	16
		17:00	17
		18:00	18
		19:00	19
		20:00	20
		21:00	21
		22:00	22
		23:00	23
		24:00	24
12	If you drive alone, would you be interested in a carpooling initiative?	Yes--With My Friends	1
		Yes--With My Co-worker	2

		Yes--With Anyone	3
		No	4
		Not Sure	5
		Not Applicable	6
13	How often do you travel between the Halifax campuses? (Carleton, Sexton, and Studley)	Daily	1
		3-4 Times a Week	2
		1-2 Times a Week	3
		A Few Times a Month	4
		Once a Month	5
		A Few Times a Year	6
		Rarely	7
		Never	8
14	What is your primary means of travel between Halifax campuses?	Walking	1
		Bicycle	2
		Bus	3
		Private Car	4
		Taxi	5
		Dal Tiger patrol Van	6
		Not Applicable	7
		Other (please specify):	8
15	How often do you travel between the Halifax and Truro campuses?	Daily	1
		3-4 Times a Week	2
		1-2 Times a Week	3
		A few Times a Month	4
		Once a Month	5
		A few Times a Year	6
		Rarely	7
		Never	8
16	What is your primary means of travel between the Halifax and Truro Campuses?	Bus	1
		Carpool	2
		Drive Alone	3
		Taxi	4
		Not Applicable	5
17	Do you own or have access to a car? (Choose all that apply)	I own a car	1
		I am a member of a car sharing service	2
		I can borrow a car or get ride most times I need it	3
		I do not own or have access to a car	4
		Not Applicable	5

18	Do you own or have access to a bicycle? (Choose all that apply)	I own a bicycle	1
		I can use or borrow a bicycle most times I need it	2
		I do not own or have access to a bicycle	3
		Not Applicable	4
19	How much do you spend out-of-pocket on a monthly basis for transportation purposes (for gas, parking, etc. Costs of ownership or vehicle maintenance should not be included)?	\$0-\$50	1
		\$51-\$100	2
		\$101-\$150	3
		\$151-\$200	4
		\$201-\$250	5
		> \$250	6
20	Briefly describe how often you use the MacDonald Bridge on evenings and why.	Frequently	1
		Occasionally	2
		Never	3
		Not applicable	4
21	Briefly describe how you use the MacDonald Bridge on weekends and why.	Frequently	1
		Occasionally	2
		Never	3
		Not applicable	4
22	What is your age?	15-19	1
		20-24	2
		25-34	3
		35-44	4
		45-54	5
		55-64	6
		65 and above	7
23	What is your gender?	Female	1
		Male	2
		Intersex	3
		Trans	4
		Other	5
		Prefer not to say	6
24	What is your annual household income?	Less than \$19,999	1
		\$20,000-39,999	2
		\$40,000-59,999	3
		\$60,000-79,999	4
		\$80,000-99,999	5

		Above 100,000	6
		Prefer not to say	7
25	What is the postal code of your local residence (i.e. The Nova Scotia address from which you commute daily to Dalhousie)? Please provide it in six digit UPPERCASE format without a space (i.e. B3B1B9)		
26	What is your primary campus?	Studley	1
		Carleton	2
		Sexton	3
		Agricultural	4
27	Which of these groups do you currently belong to?	Students	1
		Faculty	2
		Staff	3

B. Summary of 2014 Survey Data

Summary of Travel Behaviour for the Dalhousie Sustainability Survey for 2014

Long Name	Primary Campus		
Description	What is your primary campus?	n	%
1	Agricultural	95	6.3%
2	Carleton	247	16.4%
3	Sexton	199	13.2%
4	Studley	967	64.1%
	Total	1508	100.0%

Long Name	Age		
Description	What is your age?	n	%
1	15-19	100	6.7%
2	20-24	406	27.4%
3	25-34	361	24.3%
4	35-44	228	15.4%
5	45-54	223	15.0%
6	55-64	143	9.6%
7	65 and above	23	1.5%
	Total	1484	100.0%

Long Name	Gender		
Description	What is your gender?	n	%
1	Male	409	27.1%
2	Female	1068	70.8%
3	Other	8	0.5%
4	Prefer not to say	23	1.5%
	Total	1508	100.0%

Long Name	Income		
Description	What is your household annual income?	n	%
1	Less than \$19,999	321	21.4%
2	\$20,000-39,999	175	11.7%
3	\$40,000-59,999	183	12.2%
4	\$60,000-79,999	129	8.6%
5	\$80,000-99,999	122	8.1%
6	Above 100,000	294	19.6%
7	Prefer not to say	277	18.5%
	Total	1501	100.0%

Long Name	Respondent Group
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Description		In which of these groups do you currently belong?	
		n	%
1	Faculty	185	12.3%
2	Staff	604	40.1%
3	Students	719	47.7%
	Total	1508	100.0%

Long Name	Primary Mode		
Description	What is your primary mode of transportation (70% of the time or more) for daily commute to campus throughout the year?		
		n	%
1	Automobile - Drive Alone	317	21.0%
2	Automobile - Passenger	202	13.4%
3	Bicycle	141	9.4%
4	Walking	518	34.4%
5	Public Transit	321	21.3%
6	Van Pool	4	0.3%
7	Other	5	0.3%
	Total	1508	100.0%

Long Name	Secondary Mode		
Description	What is your secondary mode of transportation (less than 70% of the time) for daily commute to campus?		
		n	%
1	Use Primary Mode Only	330	21.9%
2	Automobile - Drive Alone	153	10.1%
3	Automobile - Passenger	166	11.0%
4	Bicycle	124	8.2%
5	Walking	299	19.8%
6	Skateboard and/or Longboard	10	0.7%
7	Public Transit	405	26.9%
8	Van Pool	3	0.2%
9	Other	18	1.2%
	Total	1508	100.0%

Long Name	Primary Mode Change		
Description	Change in primary commute mode (in comparison to primary commute mode in 2013-2014)?		
			%
1	Automobile - Drive Alone		+3.0%
2	Automobile - Passenger		-0.4%
3	Bicycle		+0.6%
4	Walking		-2.4%
5	Public Transit		-0.3%
6	Van Pool		-0.3%

7	Other		+0.7%
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Long Name	Last Year Mode		
Description	If so, what mode did you use a year ago (2013) for commuting to Dalhousie?		
		n	%
1	Automobile - Drive Alone	366	23.7%
2	Automobile - Passenger	202	13.1%
3	Bicycle	149	9.7%
4	Walking	498	32.3%
5	Public Transit	317	20.5%
6	Other	11	1.0%
	Total	1543	100.0%

Long Name	Access to a car		
Description	Do you own or have access to a car?		
		n	%
1	I own a car	845	56.7%
2	I am a member of a car sharing service	52	3.5%
3	I can borrow a car or get a ride most times when I need it	250	16.8%
4	I do not own or have access to a car	342	23.0%
	Total	1489	100.0%

Long Name	Access to a bicycle		
Description	Do you own or have access to a bicycle?		
		n	%
1	I own a bicycle	720	49.5%
2	I can use or borrow a bicycle most times when I need it	124	8.5%
3	I do not own or have access to bicycle	611	42.0%
	Total	1455	100.0%

Long Name	Carpool		
Description	If your primary mode is "auto passenger", do you carpool?		
		n	%
1	Yes	148	32.4%
2	No	309	67.6%
	Total	457	100.0%

Long Name	How do you park?		
Description	How do you generally park your car?		
		n	%
1	Parking in Dalhousie Lots	375	63.2%
2	Using Metered Parking	34	5.7%
3	Using On-Street Free Parking	95	16.0%
4	Parking in Halifax Regional Municipality Carpool Locations	7	1.2%
5	Other	82	13.8%

Total		593	100.0%
Long Name	Parking-permit		
Description	What kind of Dalhousie parking-permit did you purchase this year?		
		n	%
1	Did not purchase any permit	1100	72.9%
2	General annual permit	263	17.4%
3	Reserved annual permit	134	8.9%
4	Temporary (daily or weekly) permit	3	0.2%
5	Term permit	8	0.5%
	Total	1508	100.0%
Long Name	Car-pool initiative		
Description	If you drive alone, will you be interested in a car pool initiative?		
		n	%
1	Yes--With My Co-worker	38	6.5%
2	Yes--With My Friends	121	20.7%
3	Yes--With Anyone	92	15.8%
4	No	208	35.6%
5	Not Sure	125	21.4%
	Total	584	100.0%
Long Name	Intercampus travel frequency		
Description	Do you travel between the Halifax campuses?		
		n	%
1	Daily	95	6.3%
2	3-4 Times a Week	100	6.6%
3	1-2 Times a Week	156	10.3%
4	A few Times a Month	171	11.3%
5	A few Times a Year	142	9.4%
6	Once a Month	76	5.0%
7	Rarely	386	25.6%
8	Never	382	25.3%
	Total	1508	100.0%
Long Name	Primary mode for intercampus travel		
Description	What is your primary means of travel between campuses?		
		n	%
1	Walking	766	73.1%
2	Bicycle	89	8.5%
3	Bus	105	10.0%
4	Private Car	74	7.1%
5	Taxi	12	1.1%
6	Dal Tiger patrol Van	2	0.2%

Total		1048	100.0%
Long Name	Travel between Halifax and Truro campuses		
Description	Do you travel between Halifax and Truro campuses?		
		n	%
1	Daily	5	0.3%
2	3-4 Times a Week	2	0.1%
3	1-2 Times a Week	9	0.6%
4	A few Times a Month	18	1.2%
5	A few Times a Year	98	6.5%
6	Once a Month	20	1.3%
7	Rarely	138	9.2%
8	Never	1215	80.7%
	Total	1505	100.0%
Long Name	Travel mode between Halifax and Truro campuses		
Description	Primary mode for travel between the Agriculture and Halifax campuses		
		n	%
1	Drive Alone	135	51.7%
2	Carpool	97	37.2%
3	Bus	28	10.7%
4	Taxi	1	0.4%
	Total	261	100.0%
Long Name	Time Arrive		
Description	At what time, on average, do you arrive at Dalhousie? Please identify the time in four-digit 24-hour cycle (i.e. 7 am = 0700, 2 pm = 1400)		
		n	%
1	1:00:00	2	0.1%
2	2:00:00	0	0.0%
3	3:00:00	0	0.0%
4	4:00:00	1	0.1%
5	5:00:00	0	0.0%
6	6:00:00	24	1.6%
7	7:00:00	98	6.5%
8	8:00:00	555	36.8%
9	9:00:00	514	34.1%
10	10:00:00	181	12.0%
11	11:00:00	66	4.4%
12	12:00:00	26	1.7%
13	13:00:00	13	0.9%
14	14:00:00	9	0.6%
15	15:00:00	4	0.3%
16	16:00:00	7	0.5%

17	17:00:00	3	0.2%
18	18:00:00	1	0.1%
19	19:00:00	1	0.1%
20	20:00:00	1	0.1%
21	21:00:00	1	0.1%
22	22:00:00	0	0.0%
23	23:00:00	0	0.0%
24	0:00:00	1	0.1%
Total		1508	100.0%

Long Name	Departure Time		
Description	At what time, on average, do you leave Dalhousie? Please identify the time in four-digit 24-hour cycle (i.e. 7 am = 0700, 2 pm = 1400)		
		n	%
1	1:00:00	7	0.5%
2	2:00:00	10	0.7%
3	3:00:00	23	1.5%
4	4:00:00	112	7.4%
5	5:00:00	105	7.0%
6	6:00:00	33	2.2%
7	7:00:00	12	0.8%
8	8:00:00	12	0.8%
9	9:00:00	8	0.5%
10	10:00:00	4	0.3%
11	11:00:00	6	0.4%
12	12:00:00	27	1.8%
13	13:00:00	32	2.1%
14	14:00:00	29	1.9%
15	15:00:00	99	6.6%
16	16:00:00	320	21.2%
17	17:00:00	356	23.6%
18	18:00:00	153	10.1%
19	19:00:00	69	4.6%
20	20:00:00	38	2.5%
21	21:00:00	27	1.8%
22	22:00:00	12	0.8%
23	23:00:00	9	0.6%
24	0:00:00	5	0.3%
Total	Total	1508	100.0%