

# 2011 BC-Transit Rider Survey Report

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## Executive Summary

This report provides a summary and analysis of data collected from the 2011 *BC-Transit Rider Survey*. The survey was designed to measure ridership characteristics, satisfaction with BC-Transit services and rider demographics. Surveys were administered on randomly selected routes. These data were analyzed relative comparable data found in the 2007 and 2009 reports. Data was assessed using the t-test and chi-squared measures of statistical significance against the standard social science threshold of 0.05.

Ridership and purposes remained relatively the same as both the 2007 and 2009 reports. In 2011, 80% of riders took less than 10 minutes to reach the bus stop and the most common transfer location was the BC Junction. Similar to the findings of 2007, the 2011 report revealed that BU Identification cards were the modal or most common method of payment. A smaller proportion of respondents reported using the 31 day pass in 2011 relative to 2009. Also in contrast to the 2009 data, if the bus service was unavailable to them, more individuals would walk rather than avoid the trip completely.

The on board surveys were conducted October 5th through October 16th, 2011. Coincidentally this was about one month after the September 7th flood. The timing of the survey administration relative to the flood created an opportunity to assess BC-Transit emergency response protocol. Questions pertaining to emergency services during the flood were asked and our data suggests that BC-Transit performed quite well. Among those who reported needing information about flood related transit services, most found the information that they needed only a very small percentage of people were unable to find the information. Improving knowledge of the BC Transit website or establishing a database of rider information may improve the dissemination of information in the event of a future emergency.

The assessments of services were mostly positive. The areas with the highest dissatisfaction ratings (roughly 35%) were the timeliness of the buses and frequency of the bus routes. Other areas of concern (with dissatisfaction rates above 25%) included the routes meeting passenger needs, the cleanliness of the buses, the temperature of the buses and the drivers' level of professionalism and courtesy. The overall level of satisfaction has decreased by 5.51% and the level of dissatisfaction has increased by 8.06% from 2009 to 2011. The rise in the level of dissatisfaction may be explained in part by a change to the survey instrument, which corrected a potential threat to validity and reliability in previous years.

Major schedule changes, including cutting some late night routes and shifting many routes to cycle through 45 minute intervals instead of 30 minute intervals, went into effect in January 2012. These changes occurred before BMTS received any of the 2011 survey results, thus it is important to note that the changes were not made as a response to this survey. It is presumed that the participants were unaware of the upcoming schedule and route time alterations at the time of their survey responses. We caution that these results should be considered in the context prior to the January 2012 route schedule changes.

## **Introduction**

This report is based on a research need determined by the Binghamton Metropolitan Transportation Study (BMTS) and in collaboration with Masters of Public Administration (MPA) students enrolled in PAFF 510 Research Methods at Binghamton University (BU). The purpose of the study is to gauge the ridership patterns, satisfaction levels, and rider demographics of Broome County Transit (BCT) riders using an on-board survey. This report discusses the data collected in Fall 2011 and compares it with the findings from previous surveys conducted in 2007 and 2009. Since the 2009 report, the fare increased by 25 cents, alterations were made to the frequency of bus routes, and the Binghamton Intermodal Transit Terminal was completed. The BC Junction moved and began operations at its new location in November 2010. There were only minimal changes in the methodology and survey instrument in order to preserve the ability to compare the data over time. The most notable additions to the survey were questions addressing how well emergency protocol for bus route changes and information was received after the September flood in 2011. The survey was conducted and results were interpreted prior to announcement of the BC-Transit schedule changes that went into effect in January 2012. It is presumed that both surveyors and respondents were unaware of the up coming changes at the time of this satisfaction assessment. These findings should be understood in the context prior to those changes.

## **Methodology**

The follow section describes the ethical guidelines used, the details of the survey instrument including changes that were made from the 2009 survey, the field survey process and potential threats to the reliability, validity and generalizability of the survey.

## **Ethical Guidelines**

Each student received extensive training on ethics for research involving human subjects and professional statistical survey methodology. All student researchers received approval from the Human Subjects Research Review Committee at Binghamton University to conduct research using human subjects as participants.

This project was categorized as an “Exempt Approval” because participation was anonymous, voluntary, all participants were over the age of 18, and the bus routes were randomly chosen. Participation was completely voluntary and respondents were aware that they did not have to finish the survey in its entirety. Only data from the riders indicating they were at least 18 years of age were included. The riders were informed that BU graduate students were collaborating with the BMTS to collect survey data about rider satisfaction. Participants were instructed that they could present any further inquiries to the surveyors.

## **The Survey Instrument**

This survey was designed to preserve the integrity of collecting reliable and valid data from a randomly selected sample. The survey questions were divided into three sub-sections: *Today’s Trip*, *Assessment of Services*, and *Background Information*. Since surveys would be taken on a moving vehicle by participants with limited time, clear articulation of the questions was of the utmost importance. A Likert Scale was utilized in order to assess the satisfaction of participants through closed-ended questions. Several modifications to the design of the previous survey instrument were made before the fieldwork took place. The overall inquiry, however, remained relatively similar in order to make it possible to compare findings with previous reports.

Phrasing from the old survey was modified so that the *Assessment of Services* inquiries matched the potential responses more logically. To achieve this we rephrased each item from a

question format into a series of statements that were equivalent to the concepts we were conveying. For example, question 17 on the 2007/2009 survey instrument read:

*Do you feel safe on the buses?*

Question 17 on the 2011 survey says:

*In general, I feel safe on the bus.*

The potential answers remained the same for 2007, 2009, and 2011, although the presentation of the response options was slightly different in 2011. In 2007 and 2009, respondents were presented with the following options:

1 Strongly Agree 2 Agree 3 Neutral 4 Disagree 5 Strongly Disagree 6 Don't Know

The 2011 survey design was modified to offset the “Don't Know” option and eliminate a corresponding number for that response. Thus, in 2011, respondents could choose from possible answers 1, 2, 3, 4, 5 as before or a physically offset “Don't Know” option. This change was to clarify that “Don't Know” is separate from the Likert scale. We were concerned that respondents may have previously mistaken option “6” for the highest level of disagreement. It is expected that this modification has improved the reliability of this years' data from previous reports because respondents may have better understood the response structure.

Additional considerations were made regarding the phrasing of the *Assessment of Services* section to clearly state that this section was for gauging the respondents' assessments in general. This differed from the *Today's Trip* section that was specific to that bus ride. This was a necessary revision because respondents may have misunderstood that the *Assessment of Services* section was taking a measurement of general satisfaction levels that were not specific to that one bus ride. In the 2007 and 2009 instrument, the wording alternates between bus and buses in this section. We believe that it may not have been clear to past participants that they



were being asked to rate the services in general and thus those data may be less valid. Our indicators suggesting that dissatisfaction has increased may be partially a function of this issue.

Another change that was made to the survey was the addition of question 7 under the background information section.

*What is the reason you are using BC Transit today?*

- 1 No other transportation option   2 Environmental concerns   3 Inexpensive  
4 Convenient   5 Other

Participants were invited to check all applicable responses. This question was included to directly assess *why* people use BC Transit. These data may be useful in understanding how to promote or retain long-term ridership even when they have access to vehicles or other modes of transportation. The 2007 report mentions that the BMTS officials were interested in this topic and so we felt that the survey needed a more direct question to address this subject.

### **Survey Administration**

Under the direction of BU Public Administration Professor Nadia Rubaii, BMTS Senior Transportation Planner Jennifer Yonkoski and BCT Mobility Manager Ron Hirst, students developed a universal protocol for data collection. In order to maximize generalizability, BCT officials randomly selected bus routes for survey distribution. While the 2009 study included Off Campus College Transport (OCCT) data, the 2011 project returned to the scope used in 2007 which was to limit the survey to riders on BC Transit busses. Forty two different bus routes were selected, totaling 44.5 hours of bus rides, to be equally distributed amongst the PAFF-510 students. The class was divided into five teams of three or four students each. Each team was responsible for roughly nine hours of on-bus surveying. Students boarded previously selected buses presenting the driver with written permission from BCT to administer on-bus surveys.

When administering the survey, students were instructed to gather information only from individuals who were over the age of 18 years old. There were three underage bus riders who were unknowingly surveyed, and these results were not included in the final data tabulation. The student would ask riders upon boarding the bus if they wished to participate in this survey. Riders were assured that anonymity would be preserved, and that participation was completely voluntary. Participants were not required to answer every question on the survey and were able to stop taking it at any time. Passengers who agreed to participate in the survey were provided with the necessary materials: a paper BMTS survey and pencil, to complete the survey. Respondents were requested to return the survey before exiting the bus. If the participant had any questions or concerns, the surveyor would be available to answer or provide clarification. In all, 463 surveys were returned; however, only 460 of these were used in analysis, because 3 were completed by individuals under the age of 18 and thus were not included. This compares to 498 BCT responses in 2009 and 462 BCT responses in 2007. Upon completion, data collectors returned the surveys to pre-determined students responsible for data entry. Each team was responsible for entering their own collected survey data which was then combined with data from every other research team in the PAFF-510 class.

### **Other Potential Threats**

Our survey differs from the previous years' in that we did not include a response rate. This was limitation because the survey design offered no feasible comparison between completed and declined surveys. Surveys were distributed and collected within the same bus ride. The survey was designed strategically to give the participant the ability to complete it before exiting the bus. Data from partially completed surveys is included in this analysis. As a rule of thumb, the data entry team included all surveys where age appropriate respondents

completed the *Assessment of Services* Section. Questions gauging satisfaction were intentionally placed toward the beginning in case the respondent had to stop mid-survey. This way if their stop had been reached before they finished we had already gathered a noteworthy amount of data from them. Respondents had the ability to stop at anytime or decline to answer questions that they wished to avoid. It was necessary to reserve them this right due to the minimal risk classification of this research project. It must be noted that this survey included about 460 participants; however, the questions had fluctuating response rates.

Every attempt was made to reach out to potential survey respondents however on some of the most popular and crowded bus routes (Routes 35 and 15) it was difficult to make sure that everyone who would have participated had the ability. Additionally an unknown number of surveys were lost due to participants exiting without returning the survey. This represents a potential threat to generalizability, as our sample may not be representative of the general population of riders. Future surveys may be more effectively undertaken by designating multiple surveyors to assess these routes together. This would cut down on limitations of the in-field methodology.

One final limitation of the survey was the inability to differentiate routes and also time frames of usage. Although it may be valuable to discover which routes perform to higher levels of satisfaction, for the purposes of this report, only a snapshot of the overall needs assessment could be studied. Additionally, any effort to specify routes further would threaten the anonymity of the drivers thus altering the low risk nature of this research.

## **Findings**

The findings section is dissected into smaller sub-sections corresponding to the survey instrument with a special area focusing on emergency response results. This component of the report, illustrated with graphs and charts as well, solely articulates the findings of the research and further analysis is introduced in a subsequent part.

### **Today's Trip**

Overall, ridership patterns among BC Transit users have not changed dramatically over the past five years, as indicated by the data in the Today's Trip section. A vast majority of riders (approximately 64%) responded that, similar to previous years, it took one to five minutes in order to reach the bus stop; in fact, it took 80% of the riders ten minutes or less to reach their designated stops. In addition, although the percentage of individuals who walked to the bus stops remained at a commensurate rate to earlier surveys, it represented the most utilized form of transportation (approximately 94%).

The way in which riders paid for their fares represents the most significant change throughout the five years of this study. In 2011, the most utilized form of payment was the Binghamton University ID (35%), similar to the results of the 2007 survey (32%). In total, riders reported using the Binghamton University identification card approximately 15% more than the 2009 report indicated. Furthermore, the thirty-one day bus pass, which was by far the modal category in 2009, was used almost 10% less than previously reported even though it was the second most way to pay the bus fare. Finally, cash payment continues to represent a large portion of the fare; in 2011, over one quarter (approximately 28%) of the respondents paid with cash which is similar to the findings in 2007 (28%) and 2009 (approximately 30%).

The bike rack and lift continue to be underutilized although no meaningfully significant changes were reported. This section of the study has also revealed that the general purpose of riders' trips remains more or less consistent. Similar to the 2007 and 2009 reports, work, school, and shopping represented the three most prevalent responses; approximately 27%, 27%, and 20% of the observations respectively. The need to transfer has stayed nearly identical for the last two years with less than a one percent change (.15% more transfers). Moreover, the most common transfer location continues to be BC Junction that includes almost 80% of the transfers. Finally, the most common alternative form of transportation, if the bus services were unavailable, was walking (25%). This response differs from the 2009 report's finding that most individuals would not make the trip (28%).

In order to assess the significance of these results, a standard social science confidence threshold of 0.05 was established. After conducting a t-test assuming equal variance comparing the results of both the 2007 and 2009 to the 2011 findings, no statistical significance was found for any of the questions in the "Today's Trip" section. Thus, although there may be minor shifts in rider preferences and demographics, they may equally be due to chance.

### **Assessment of Services**

Respondents were asked to rate their satisfaction with BC Transit services by indicating on a Likert scale of 1-5 whether they "Strongly Agree", "Agree", are "Neutral", "Disagree" or "Strongly Disagree" with statements regarding BC Transit services. Respondents were also given the option of responding "Don't Know" to any of these questions. This option was not included in the numeric scale, and was offset from the other answer options to avoid confusion. In our analysis, "Strongly Agree" and "Agree" were aggregated to indicate satisfaction, and "Disagree" and "Strongly Disagree" were aggregated to represent dissatisfaction.

A majority of respondents expressed satisfaction with BC Transit on 11 of 18 questions. However, on only three of the questions did at least 60% of respondents indicate that they were satisfied with BC Transit services, indicating that there is still room for improvement. Fully 64% of respondents “Strongly Agreed” or “Agreed” that the bus schedule was easy to obtain, 61% felt the stops are easy to get to and 61% indicated they felt safe on the bus. As show in Table 1, below, on a number of questions only a slim majority expressed satisfaction.

**Table 1: Questions with significant levels of satisfaction**

|  | <b>Strongly Agree &amp; Agree</b> | <b>Neutral</b> | <b>Disagree &amp; Strongly Disagree</b> | <b>Don't Know</b> |
|--|-----------------------------------|----------------|---|-------------------|
| <b>Q3. The bus schedule is easy to understand</b>                    | <b>55%</b>                        | <b>20%</b>     | <b>24%</b>                              | <b>1%</b>         |
| <b>Q4. The bus schedule is easy to obtain</b>                        | <b>64</b>                         | <b>15</b>      | <b>20</b>                               | <b>1</b>          |
| <b>Q6. The bus stops are easy for me to get to</b>                   | <b>61</b>                         | <b>15</b>      | <b>23</b>                               | <b>1</b>          |
| <b>Q7. The bus routes meet my needs</b>                              | <b>52</b>                         | <b>19</b>      | <b>28</b>                               | <b>1</b>          |
| <b>Q10. In general, bus drivers are knowledgeable about services</b> | <b>52</b>                         | <b>17</b>      | <b>23</b>                               | <b>8</b>          |
| <b>Q11. In general, bus drivers are professional</b>                 | <b>53</b>                         | <b>19</b>      | <b>25</b>                               | <b>3</b>          |
| <b>Q12. In general, the bus drivers are courteous</b>                | <b>52</b>                         | <b>19</b>      | <b>27</b>                               | <b>3</b>          |
| <b>Q13. In general, the buses are clean inside</b>                   | <b>50</b>                         | <b>22</b>      | <b>27</b>                               | <b>1</b>          |
| <b>Q16. In general, bus service is reliable</b>                      | <b>57</b>                         | <b>20</b>      | <b>22</b>                               | <b>1</b>          |
| <b>Q17. In general, I feel safe on the bus</b>                       | <b>61</b>                         | <b>18</b>      | <b>20</b>                               | <b>1</b>          |
| <b>Q18. In general, I feel safe at the bus stop</b>                  | <b>59</b>                         | <b>19</b>      | <b>22</b>                               | <b>1</b>          |

On none of the questions did a majority of respondents express dissatisfaction. However, on six of the questions, 25% or more of respondents indicated that they were dissatisfied with services (see Table 2). Most notably, 37% of respondents did not feel that the buses are consistently on time, and 35% did not feel the bus service was frequent enough to meet their needs. Of the indicators that had 25% or higher dissatisfaction rates, all but the timeliness and frequency of the buses also showed at least 50% of the respondents expressing satisfaction. In addition, riders responded unfavorably to these questions in 2007 and 2009 as well, indicating that these are ongoing concerns for BC Transit riders. In connecting these findings with the

present reality that route frequencies and accommodations have shifted and decreased it is our expectation that the dissatisfaction rates related to those areas have risen even higher since the undertaking of this survey.

**Table 2: Questions with significant levels of dissatisfaction**

|  | <b>Strongly Agree &amp; Agree</b> | <b>Neutral</b> | <b>Disagree &amp; Strongly Disagree</b> | <b>Don't Know</b> |
|--|-----------------------------------|----------------|---|-------------------|
| <b>Q7. The bus routes meet my needs</b>                        | <b>52%</b>                        | <b>19%</b>     | <b>28%</b>                              | <b>0.66%</b>      |
| <b>Q8. The bus service is frequent enough to meet my needs</b> | <b>39</b>                         | <b>25</b>      | <b>35</b>                               | <b>1</b>          |
| <b>Q9. The buses are consistently on time</b>                  | <b>39</b>                         | <b>23</b>      | <b>37</b>                               | <b>1</b>          |
| <b>Q11. In general, bus drivers are professional</b>           | <b>53</b>                         | <b>19</b>      | <b>25</b>                               | <b>3</b>          |
| <b>Q12. In general, the bus drivers are courteous</b>          | <b>52</b>                         | <b>19</b>      | <b>27</b>                               | <b>3</b>          |
| <b>Q13. In general, the buses are clean inside</b>             | <b>50</b>                         | <b>22</b>      | <b>27</b>                               | <b>1</b>          |
| <b>Q15. The bus temperature is comfortable</b>                 | <b>48</b>                         | <b>25</b>      | <b>26</b>                               | <b>1</b>          |

Although a majority of respondents expressed satisfaction with services on 11 of 18 questions (61% of questions), in every area rider satisfaction has gone down and rider dissatisfaction has gone up since 2009. A t-test of the average levels of satisfaction in 2011 and 2009 showed that these changes were significant at the 0.05 level. A t-test for changes in dissatisfaction was significant at the 0.01 level.

Not surprisingly, the most notable changes were those with both a large decrease in satisfaction and correspondingly large increase in dissatisfaction. Satisfaction with bus routes decreased by 9%, while dissatisfaction increased by 12%. Satisfaction with the frequency of services decreased by 11% and dissatisfaction rose by 8%. As discussed, this was one of the areas with the highest level of dissatisfaction in all three years the survey was administered. Satisfaction with driver knowledge, professionalism and courtesy dropped by 5%, 6% and 4%, respectively, with dissatisfaction rising 10%, 11% and 13%, respectively. Satisfaction with the

knowledge, professionalism and courtesy of bus drivers also dropped from 2007 to 2009, indicating that this is an area that BC Transit officials should address. Ten percent fewer respondents felt the bus temperature was comfortable, while 12% more were unsatisfied with the temperature. This issue is of less concern, however, as it may be dependent on the weather on the day the survey is administered. These changes were tested for statistical significance using the chi-squared test. Each of the changes discussed above were statistically significant at the 0.05 level or higher. The indicators that showed the least amount of change since 2009 were the reasonableness of the bus fare and the comfort of bus seats.

As in 2007 and 2009, many respondents indicated that they did not know if the BC Transit website is easy to use, demonstrating that many riders do not utilize the website. The percentage of respondents who felt the BC Transit website was easy to use dropped 6% from 2009, while dissatisfaction with the ease of use increased by 6%. However, a majority of respondents (64%) indicated that the bus schedule is easy to obtain, so lack of knowledge of the website does not seem to hinder riders' ability to access the bus schedule.

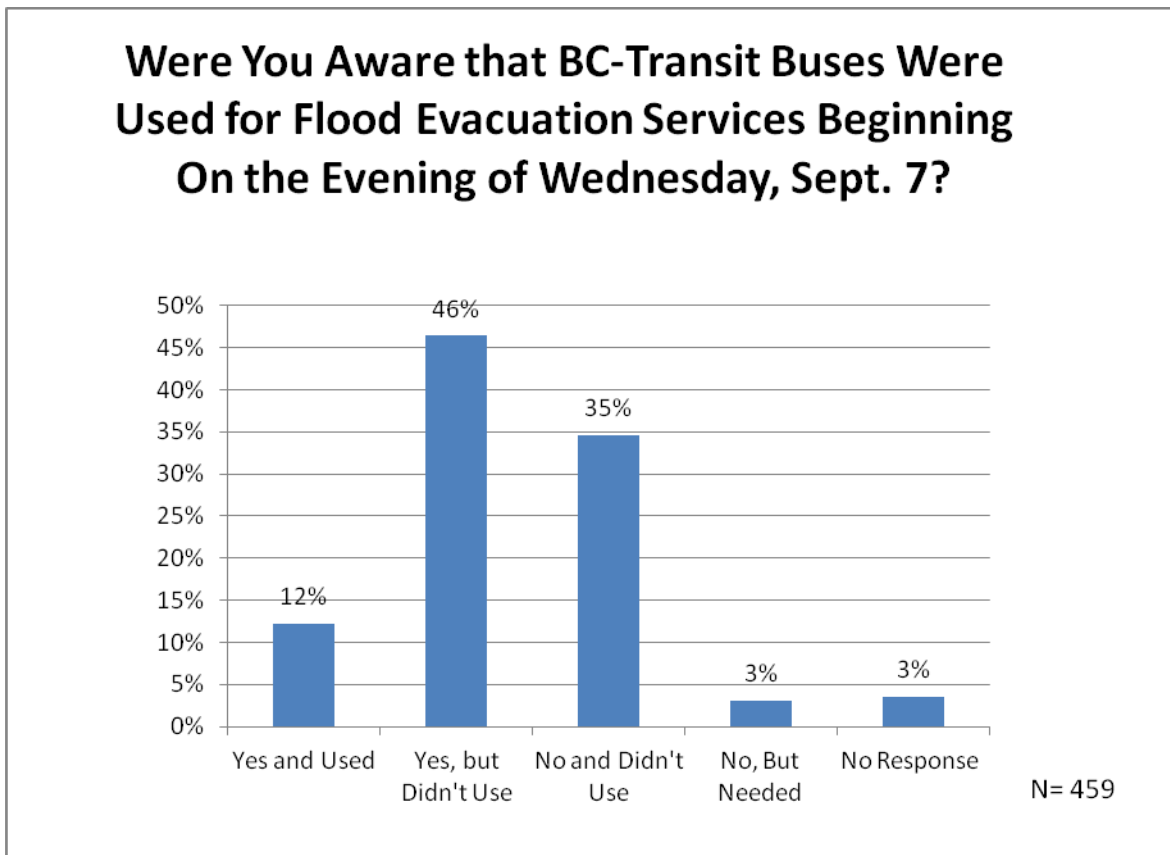
### **Knowledge of flood services.**

The devastating flood provided a unique challenge for Broome County and the BC Transit system as well. Moreover, the timing of this survey provided students and administrators alike with the opportunity to measure the overall effectiveness and respondent satisfaction within several months of this rare situation. The responses to questions pertaining to the bus services during the flood on September 7th, 2011, provide valuable insight into the effectiveness of these programs. For example, a majority (59%) of all respondents were aware of the emergency services that BC Transit was offering during the crises. As Figure 1 indicates the modal response was that the individuals were aware of the service, but did not need it (46%). Almost

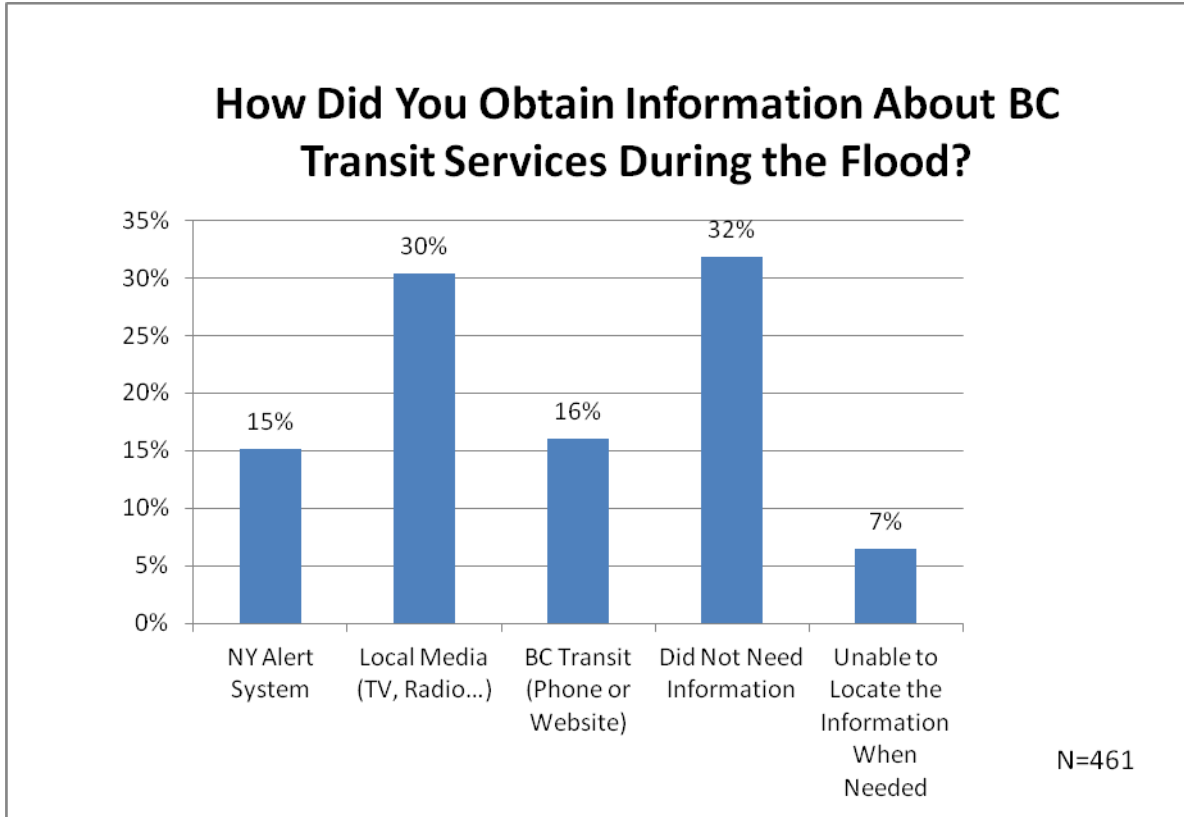


38% of riders indicated they were not aware of the emergency efforts, but of those respondents, approximately 3% actually needed the assistance. The findings about flood services also reveal information about how people received the emergency information (Figure 2). The most common response, “did not need the information” represented almost 32% of the answers. Next, local media including, but not limited to television and radio, comprised slightly more than 30% of the observations. BC Transits’ efforts and the NY Alert System included approximately 16% and 15%, respectively. Only about 7% of the riders reported the inability to locate necessary information.

**Figure 1**



**Figure 2**

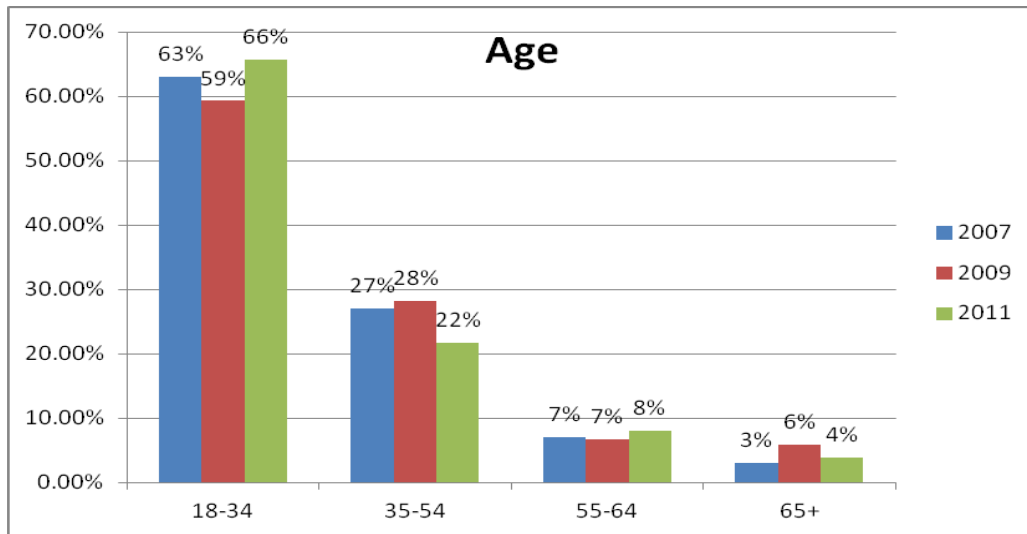


### **Background Information**

The survey responses indicate that the typical BC Transit rider is most likely to be female, white, aged 18-34, a student and has an annual household income of \$15,000 or less. While there were slight variations on this data from previous years, these changes were not statistically significant; therefore, for all practical purposes, the demographic background of riders has not changed. Most respondents are between 18-34 years of age, which represents more than 65% of total riders. One-fifth is between 35-54 years of age, 9% of respondents are between 55-64 years of age, and 4% were 65 years of age or more. That distribution has not changed much compared with 2009 (See Figure 3). Half of the riders identified themselves as white. 17% identified themselves as African-American, 13% as Asian, and 8% as Hispanic. The remaining tenth

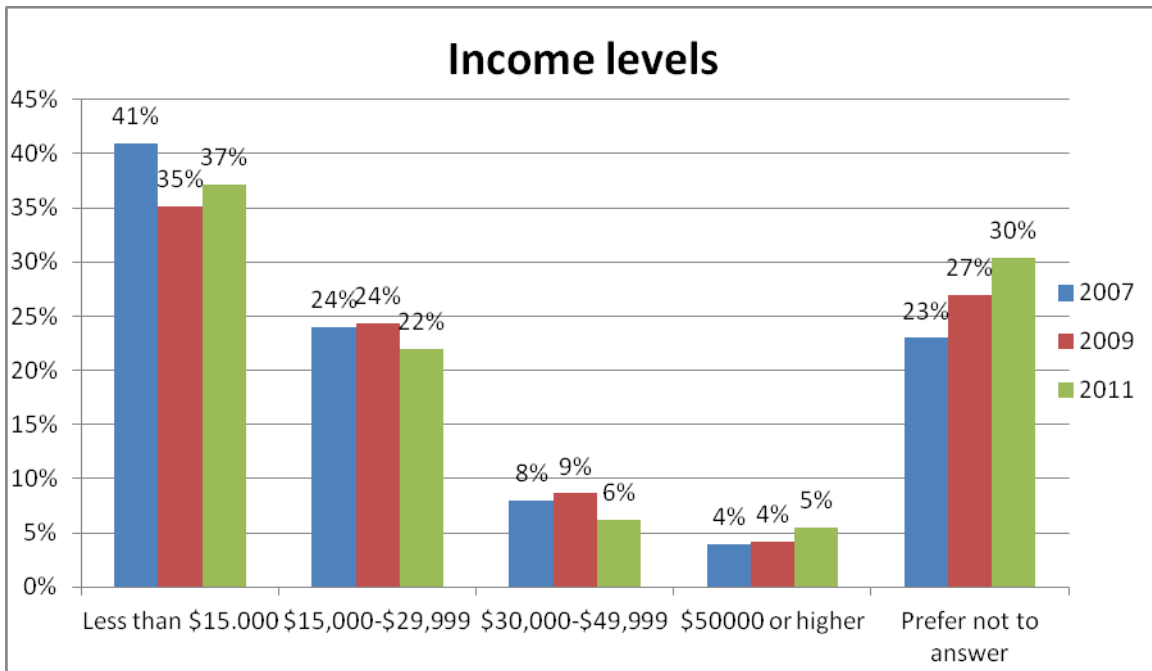
preferred not to answer this question, or responded as “other.” The percent of females outweighed the percent of male respondents by more than 8%, while the difference was 11% in 2009.

**Figure 3**



As in 2009, most of the respondents are students or employed full time. From 2009 to 2011, the composition of respondents shifted slightly to include more students (up 10%) and fewer individuals employed full-time (down 6%) however these changes were not statistically significant. One-fifth of the riders were retired or unemployed. The annual household income level shows that, as in previous years, most people chose “prefer not to answer”. Of those who indicated their income, most riders answered less than \$15,000 and \$15,000-\$29,999. (See Figure 4)

**Figure 4**



The survey results indicate that 83% of riders did not have a disability. Of the 17.32% who did, one-fifth identified mobility impairment and one-tenth identified vision impairment, which is about the same as in the previous survey. Half of the respondents classified their disability as “other”, which decreased by 20% compared to 2009.

In this year’s survey, we added a question about the reason for using BC Transit. This replaced two questions from previous surveys about whether riders had access to a vehicle, which were really intended to gauge why riders chose to use BC Transit. Respondents could choose as many answers as applicable. For this question, the most common response was “no other transportation”, at 42%. Twenty five percent of respondents indicated they use BC Transit because it is convenient, and 19% because it is inexpensive. Only 5% riders indicated that they ride BC Transit due to “Environmental Concerns.”

Observable but statistically insignificant changes were evident in the frequency of ridership among respondents; the number of respondents who rode the bus “5 or more days” a week decreased by about 8% from 2009, while those who rode the bus “once or twice” or “less than once” both increased by 8%. Among all the respondents, 43% reported that they have been riding the bus between one and five years. There was a 5% increase in riders who have used BC-transit for less than one year, and 5% decrease in riders who reported riding for more than five years or between 1 to 5 years. There was a slight drop in respondents who reported that they ride more often now. Thirty three percent reported riding about the same and 11% have been riding less often. Fifteen percent reported that they have not been riding for more than one year.

### **Analysis/Interpretations**

Although there are very few major implications of the “today’s trip” section, there are a few pertinent points that should be addressed. First, the amount of riders who use cash continues to represent a significant proportion of the ridership. From an observer’s perspective, this method of payment is sluggish and unproductive. Much of the time, the bus stands idly by while passengers line up and repeatedly try to slide crinkled bills into the machine. The Broome County Transit system should find additional ways to incentivize patrons into purchasing twelve-day and thirty-one day passes. For instance, providing the total capital saved by utilizing a certain card or mentioning the cost per ride difference, in contrast to the existing policy of simply listing the price, may entice riders to purchase these passes. Additionally, Binghamton University students remain a large portion of the ridership demographics; officials should find ways to expedite and enhance student ridership in order to better serve their constituents.

Overall, BC Transit riders are satisfied with the bus service. At least 50% of respondents expressed satisfaction with 11 out of 18 indicators, with over 60% satisfaction with the ease of

obtaining the bus schedule, the ease of getting to the bus stops and feelings of safety on the bus. There are, however, some areas of concern. The areas that deserve the most attention from BC Transit and the BMTS officials are those in which satisfaction is low, dissatisfaction is high and there is a downward trend in satisfaction. Two issues of ongoing concern for riders are the timeliness of buses and the frequency of the bus service. Of all the questions, respondents indicated the lowest levels of satisfaction and the highest levels of dissatisfaction in these two areas. Despite that fact that the timeliness and frequency of the buses have had low satisfaction and high dissatisfaction on all three surveys, satisfaction has declined and dissatisfaction has grown over the four-year span covered by the study. BC Transit officials should also consider that these levels of satisfaction and dissatisfaction reflect rider sentiment before the announcement and implementation of changes to the frequency of routes, and that it can reasonably be concluded that rider satisfaction with the frequency of routes will likely be lower now than at the time the survey was administered.

Another area of concern is overall satisfaction with the bus drivers. Although a little over 50% of respondents expressed satisfaction with drivers, dissatisfaction levels were fairly high. About 25% of respondents were dissatisfied with the professionalism and courtesy of the bus drivers, and 23% felt the bus drivers were not knowledgeable about services. Moreover, satisfaction with drivers has dropped considerably since 2007, from an average of 66% on the three indicators, to 52% in 2011. Dissatisfaction has also risen significantly, from an average of 11% in 2007 to 25% in 2011. This significant downward trend indicates that BC Transit officials should address this issue.

As discussed, a change was made to the “Assessment of Services” section of this year’s survey to address a threat to survey validity. On the previous two surveys, the answer choice

“Don’t Know” was included as part of a 6-point scale. Respondents who did not read the directions carefully may have believed that they were choosing “Strongly Disagree” when in fact they were choosing “Don’t Know.” After analyzing the data, we have found that many of the questions that saw a significant rise in levels of dissatisfaction also saw a significant drop in the percentage of respondents answering “Don’t Know.” This suggests that dissatisfaction may not have risen at the levels indicated, but that dissatisfaction may actually have been higher in previous years. For this reason, we suggest that BC Transit and BMTS officials focus on the questions with significant decreases in satisfaction, rather than increases in dissatisfaction alone, when assessing changing levels of satisfaction with BC Transit services. Noteworthy decreases in levels of satisfaction include a 13% decrease in satisfaction with the ease of purchasing swipe cards, a 9% decrease in the percentage who feel the bus routes meet their needs, a 11% decrease in satisfaction with the frequency of service, and a 10% decrease in satisfaction with the temperature of the bus. These changes were statistically significant at the 0.05 level or higher using the chi-squared test.

When evaluating the general satisfaction of students, we found that students were slightly less satisfied with the frequency of the bus routes. Similarly, students were more dissatisfied than non-students with the timeliness of the buses. These findings are significant because students make up the most common category of BC Transit respondents, at 38%. As Binghamton University continues to grow its student population, dissatisfaction among students may become a greater issue. While students were less satisfied with some aspects of BC Transit services, respondents using their Binghamton University identification card were more likely than other riders to be satisfied with the bus fare. This is probably because Binghamton University students are able to ride the buses without directly paying the bus fare. This is significant because it

shows that riders who actually pay the fare each time they ride the bus are less satisfied with the reasonableness of the fare.

The responses to the evacuation protocols of September 7, 2011 provide some further acumen into the inner workings of BC Transit. As previously indicated, a majority of the survey respondents (59%) were aware of the services BC Transit offered; unfortunately, almost 38% did not know about the evacuation procedures. This failure of information dissemination is problematic and should be rectified as soon as possible. Of the individuals who received information, most were through the local media. BC Transit and the NY Alert System only represented 15% and 16% of the answers, respectively. Officials need to increase their databank in order to better serve communities during emergency. Possibly adding a contact list on each bus articulating that they would solely be contacted in times of crises may increase those who are reached by BC Transit; moreover, providing a specific phone number in which riders can call to receive information may alleviate some of the issues. A chi-squared test of riders' level of knowledge and comfort with the BC Transit website and their knowledge of services during the flood revealed that riders who felt the website was easy to use were more likely to have knowledge of the flood services. Those who did not have knowledge, or felt the website was not easy to use were less likely to be aware of flood services. These findings were significant at the 0.01 level. While this may be due to the fact that riders with internet access and comfort using the website are also more likely to obtain information from other media sources, the dissemination of information to riders in times of emergency should be a priority to BC Transit officials. Improving knowledge of BC Transit's website is one way that this process could be improved. Additional research into crisis management for public transit in the region is warranted, but in sum, BC Transit did well in providing reliable services in times of need.



While the background section is primarily meant to provide a general description of the characteristics of BC Transit riders, some important recommendations can be made from the findings. We ran a chi-squared test to determine if there was a statistically significant difference in the number of days per week that BC-Transit is used and the income level of the respondent. We found that riders with higher incomes rode less often than riders with lower incomes. These findings were significant at the 0.01 level (See Figures 5 and 6). This shows that lower income riders rely more heavily on BC Transit services than other riders, perhaps due to lack of other transportation options.

**Figure 5**

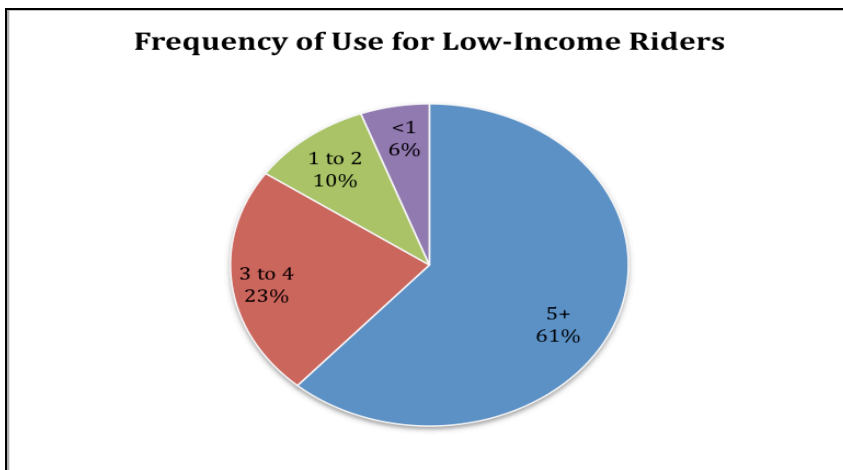


Figure 5 shows the number of times per week that low income riders (<\$15,000) use BC Transit.

**Figure 6**

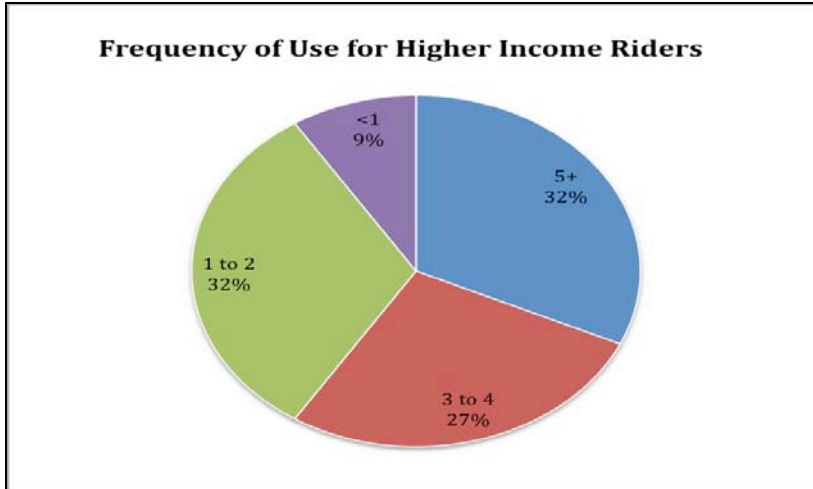


Figure 6 shows the number of times per week that high income riders (>\$50,000) use BC Transit.

This year's survey included a new question to determine the reason for using BC-Transit. Respondents (42%) indicated that they used BC-Transit because they had no other transportation. This presents BC Transit with an opportunity to increase ridership by encouraging residents to ride for other reasons, such as low cost or environmental concerns. Having a larger and more diverse segment of the Broome County population invested in BC Transit would certainly be beneficial.

Finally, the background information section demonstrates that BC Transit must consider the needs of students, as discussed above. Because students make up the largest segment of survey respondents, and this population will likely grow as Binghamton University expands the size of its student body, BC Transit will need to balance the needs of students with those of the larger community.

## **Conclusion**

In summation, the “Today’s Trip” section illustrated the generally static nature of the ridership demographics throughout the five years this study has been conducted. At the time of the survey the results reflect a general level of satisfied with bus services. However due to substantial changes that have taken place preceding the data collection for this report any assessment results pertaining to the frequency of routes and routes meeting the needs of riders should be put into context prior to the new Spring 2012 schedules. Taking that into consideration, it is our recommendation that BC Transit officials focus their attention on improving the timeliness of the buses, the frequency of bus routes and the knowledge, professionalism and courtesy of bus drivers. In order to gauge the effectiveness of the flood emergency services, two pertinent questions were added to the survey. On the whole, BC Transit disseminated the information quite well, but should continue to update its contact information and improve implementation processes. Finally, the demographics have remained consistent during the last five years this study has been conducted. In order to increase ridership, BC Transit should implement a specific plan to attract new riders who choose to ride for environmental or convenience reasons rather than those with no other option.

**APPENDIX 1: The Survey Instrument 2011**

**20. How did you obtain information about BC Transit services during the flood?**

- I obtained the information I needed from the NY Alert system
- I obtained the information I needed from the local media (radio, TV, Internet)
- I obtained the information I needed directly from BC Transit (by phone or website)
- I did not need any information about BC Transit during that time
- I was unable to locate the information I needed when I needed it

**Background Information**

**1. Age:**

- Under 18    18 – 34    35 – 54
- 55 – 64    65 or older

**2. Race/Ethnicity:**

- African-American    Asian
- Hispanic-American    White
- Other    Prefer not to answer

**3. Gender:**

- Male    Female

**4. Employment status:** (Check all that apply)

- Employed full time
- Employed part time
- Unemployed    Student    Retired

**5. Do you have a disability?**

- Yes    No
- If yes,  Mobility impairment
- Vision impairment
- Other

Please turn the page over



**6. What is your annual household income?**

- Less than \$15,000
- \$15,000-\$29,999
- \$30,000-\$49,999
- \$50,000 or higher
- Prefer not to answer

**7. What is the reason you are using BC Transit today?** (check all that apply)

- No other transportation option
- Environmental concerns
- Inexpensive
- Convenient
- Other

**9. How many days a week, on average, do you use BC-Transit?**

- 5 or more    3 to 4
- 1 to 2    Less than once a week

**10. How many years have you been using BC-Transit?**

- More than 5 years
- 1 to 5 years
- Less than 1 year

**11. If you have been riding more than one year, are you riding more or less than one year ago?**

- Riding more often
- Riding less often
- About the same
- Have not been riding the bus for more than a year

For Surveyor Use



*We Go Where  
You Go!*

**BC-TRANSIT  
RIDER SURVEY**

BC-Transit is conducting a survey of its customers. The information we gather will be used to improve BC-Transit services. Please take a few minutes to complete this survey.

When you leave the bus, please return the survey to the person who gave you the survey.

Your survey responses will be kept anonymous. If you decide to participate, you do not have to answer all questions and may stop at any time.

Thank you so much for your time!

Binghamton Metropolitan Transportation Study  
PO Box 1766  
Binghamton, NY 13902-1766

Today's Trip

**1. How long did it take you to reach the bus stop?**  
 1 - 5 minutes       6 - 10 minutes  
 11 - 15 minutes     16 - 20 minutes  
 21 - 25 minutes     26 minutes or more

**2. How did you get to the bus stop?**  
 (check all that apply)  
 Walked    Bicycle    Dropped off  
 Used a wheelchair  
 Other \_\_\_\_\_

**3. How did you pay your fare?**  
 Cash  
 Single ride pass  
 2-way ride pass  
 12 ride pass bought at Weis  
 BU ID  
 Medical voucher  
 31 day bus pass  
 Other \_\_\_\_\_

**4. Did you use the lift/ramp to board the bus?**  
 Yes    No

**5. Did you use the bicycle rack?**  
 Yes    No

**6. What is the purpose of today's trip?**  
 (check all that apply)  
 Work    School    Shopping  
 Leisure  
 Medical appointment  
 Other \_\_\_\_\_

**7. Do you need to transfer buses today?**  
 Yes    No

**If yes, where?** (Check all that apply)  
 BC Junction  
 Binghamton University  
 Endicott/Washington Ave  
 Downtown Johnson City

**8. If bus service were not available, how would you have made your trip?** (check all that apply)  
 Drive    Ride with someone    Taxi  
 Bicycle    Walk    Would not make this trip  
 Other \_\_\_\_\_

Assessment of Services

**Please rate bus services, in general, using a scale from 1 to 5 where:**

1 = Strongly agree  
 2 = Agree  
 3 = Neutral  
 4 = Disagree  
 5 = Strongly Disagree

**1. The bus fare is reasonable.**  
 1    2    3    4    5    Don't know

**2. It is easy to purchase swipe cards.**  
 1    2    3    4    5    Don't know

**3. The bus schedule is easy to understand.**  
 1    2    3    4    5    Don't know

**4. The bus schedule is easy to obtain.**  
 1    2    3    4    5    Don't know

**5. The BC Transit website is easy to use.**  
 1    2    3    4    5    Don't know

**6. The bus stops are easy for me to get to.**  
 1    2    3    4    5    Don't know

**7. The bus routes meet my needs.**  
 1    2    3    4    5    Don't know

**8. The bus service is frequent enough to meet my needs.**  
 1    2    3    4    5    Don't know

**9. The buses are consistently on time.**  
 1    2    3    4    5    Don't know

**10. In general, bus drivers are knowledgeable about services.**  
 1    2    3    4    5    Don't know

**11. In general, bus drivers are professional.**  
 1    2    3    4    5    Don't know

**12. In general, bus drivers are courteous.**  
 1    2    3    4    5    Don't know

**13. In general, the buses are clean inside.**  
 1    2    3    4    5    Don't know

**14. The bus seating is comfortable.**  
 1    2    3    4    5    Don't know

**15. The bus temperature is comfortable.**  
 1    2    3    4    5    Don't know

**16. In general, bus service is reliable.**  
 1    2    3    4    5    Don't know

**17. In general, I feel safe on the bus.**  
 1    2    3    4    5    Don't know

**18. In general, I feel safe at the bus stop.**  
 1    2    3    4    5    Don't know

**19. Were you aware that BC Transit buses were used for flood evacuation service beginning on the evening of Wednesday, September 7?**  
 Yes, I used the evacuation service  
 Yes, I was aware of the service, but did not need to use the service  
 No, I was not aware and I did not need to use the service  
 No, I was not aware and I needed transportation assistance to evacuate

Please turn the page over →

**APPENDIX 2: The Survey Instrument 2007/2009**

**2. Race/Ethnicity:**  
 African-American  
 Asian  
 Hispanic-American  
 White  
 Other  
 Prefer not to answer

**3. Gender:**  
 Male  Female

**4. Employment status:**  
 Employed full time  
 Employed part time  
 Unemployed  
 Student  
 Retired

**5. Do you have a disability?**  
 Yes  No  
If yes,  Mobility impairment  
 Vision impairment  
 Other

**6. What is your annual household income?**  
 Less than \$15,000  
 \$15,000-\$29,999  
 \$30,000-\$49,999  
 \$50,000 or higher  
 Prefer not to answer

**7. How many cars in your household?**  
 0  1  2  More than 2

**8. Is there a vehicle available for you to use?**  
 Yes  No  Sometimes

Please turn the page over →


**9. How many days a week, on average, do you use BC-Transit?**  
 5 or more  
 3 to 4  
 1 to 2  
 Less than once a week

**10. How many years have you been using BC-Transit?**  
 Less than 1 year  
 1 to 5 years  
 More than 5 years

**11. If you have been riding more than one year, are you riding more or less than one year ago?**  
 Riding more often  
 Riding less often  
 About the same  
 Have not been riding the bus for more than a year

*Thank You!*

For Surveyor Use



**We Go Where You Go!**

**BC-TRANSIT RIDER SURVEY**

BC-Transit is conducting a survey of its customers. The information we gather will be used to improve BC-Transit services. Please take a few minutes to complete this survey.

When you leave the bus, please return the survey to the person who gave you the survey.

Your survey responses will be kept anonymous. If you decide to participate, you do not have to answer all questions and may stop at any time.

Thank you so much for your time!

Binghamton Metropolitan Transportation Study  
PO Box 1766  
Binghamton, NY 13902-1766

**Today's Trip**

**1. How long did it take you to reach the bus stop?**

- 1 - 5 minutes
- 6 - 10 minutes
- 11 - 15 minutes
- 16 - 20 minutes
- 21 - 25 minutes
- 26 minutes or more

**2. How did you get to the bus stop?**  
(check all that apply)

- Walked  Bicycle  Dropped off
- Used a wheelchair
- Other \_\_\_\_\_

**3. How did you pay your fare?**

- Cash
- Single ride pass
- 2-way ride pass
- 12 ride pass bought at Weis
- BU ID
- Medical voucher
- 31 day bus pass
- Other

**4. Did you use the lift/ramp to board the bus?**

- Yes  No

**5. Did you use the bicycle rack?**

- Yes  No

**6. What is the purpose of today's trip?**  
(check all that apply)

- Work  School  Shopping
- Leisure
- Medical appointment
- Other \_\_\_\_\_

**7. Do you need to transfer buses today?**

- Yes  No

**If yes, where?**

- BC Junction
- Binghamton University
- Endicott/Washington Ave
- Downtown Johnson City

**8. If bus service were not available, how would you have made your trip?** (check all that apply)

- Drive  Ride with someone  Taxi  Bicycle
- Walk  Would not make this trip  Other

**9. How many *one-way* trips are you going to make today?**

- 1  2  3  4 or more

**Assessment of Services**

Please rate bus services using a scale from 1 to 6 where:

- 1 = Strongly agree
- 2 = Agree
- 3 = Neutral
- 4 = Disagree
- 5 = Strongly Disagree
- 6 = Don't know

**1. Is the bus fare reasonable?**

- 1  2  3  4  5  6

**2. Is it easy to purchase swipe cards?**

- 1  2  3  4  5  6

**3. Is the bus schedule easy to understand?**

- 1  2  3  4  5  6

**4. Is the bus schedule easy to obtain?**

- 1  2  3  4  5  6

**5. Is the BC Transit website easy to use?**

- 1  2  3  4  5  6

**6. Are the bus stops easy for you to get to?**

- 1  2  3  4  5  6

**7. Do the bus routes meet your needs?**

- 1  2  3  4  5  6

**8. Is the bus service frequent enough to meet your needs?**

- 1  2  3  4  5  6

**9. Are the buses consistently on time?**

- 1  2  3  4  5  6

**10. Is the bus driver knowledgeable about services?**

- 1  2  3  4  5  6

**11. Is the bus driver professional?**

- 1  2  3  4  5  6

**12. Is the bus driver courteous?**

- 1  2  3  4  5  6

**13. Are the buses clean inside?**

- 1  2  3  4  5  6

**14. Is the bus seating comfortable?**

- 1  2  3  4  5  6

**15. Is the bus temperature comfortable?**

- 1  2  3  4  5  6

**16. Is the bus service reliable?**

- 1  2  3  4  5  6

**17. Do you feel safe on the bus?**

- 1  2  3  4  5  6

**18. Do you feel safe at the bus stop?**

- 1  2  3  4  5  6

**Background Information**

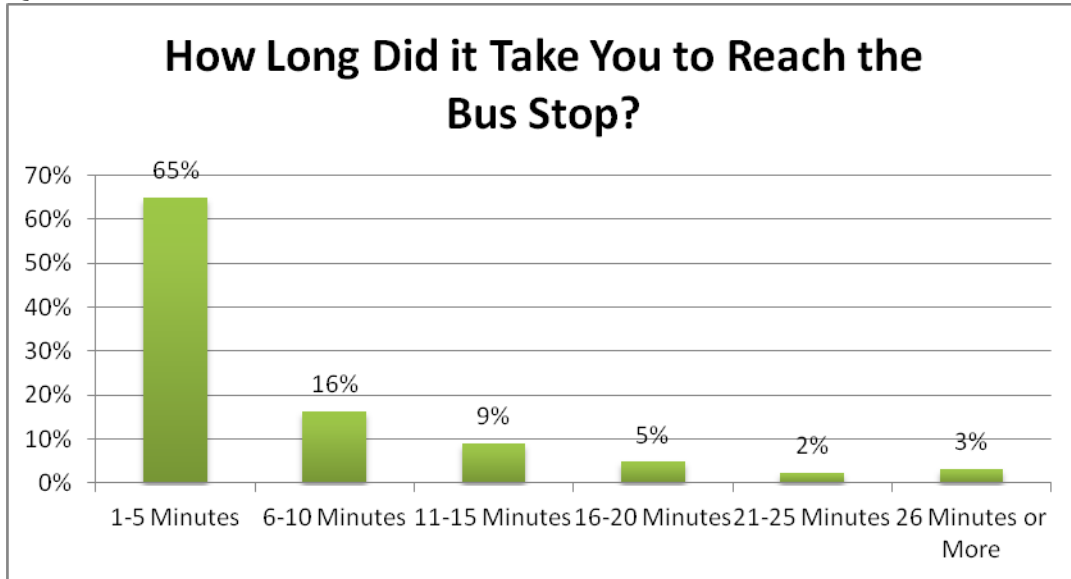
**1. Age:**

- Under 18  18 - 34  35 - 54
- 55 - 64  65 or older

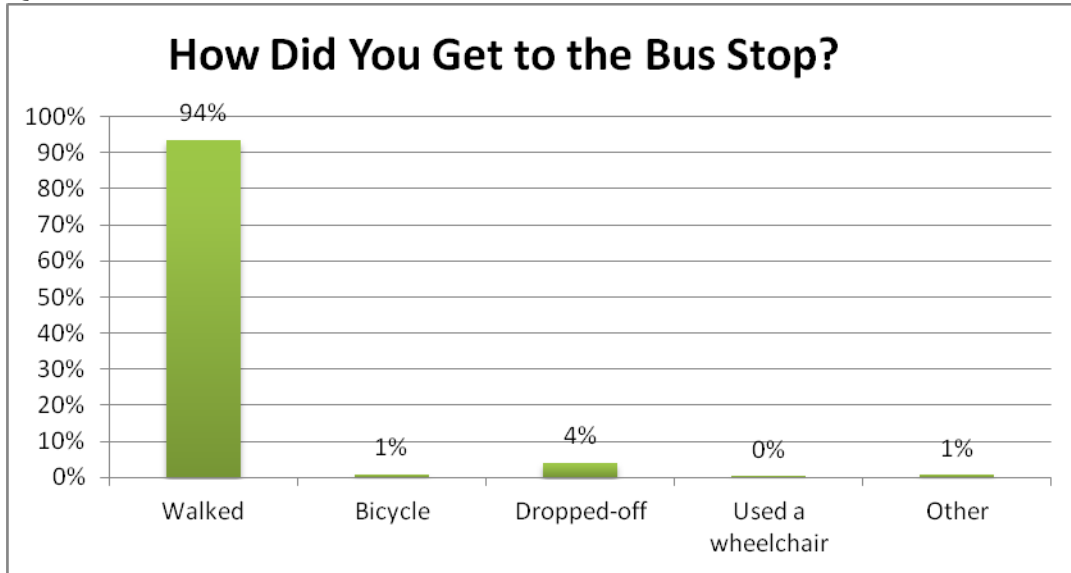
Please turn the page over →

**APPENDIX 3: Visual Summary of Data Regarding Today's Trip**

Q1:

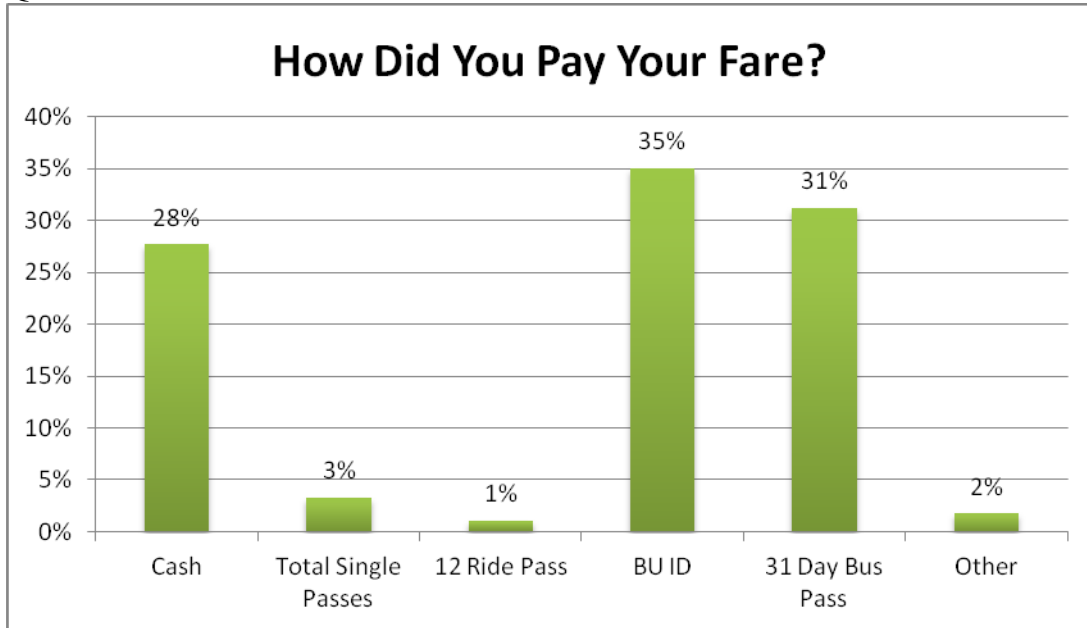


Q2:

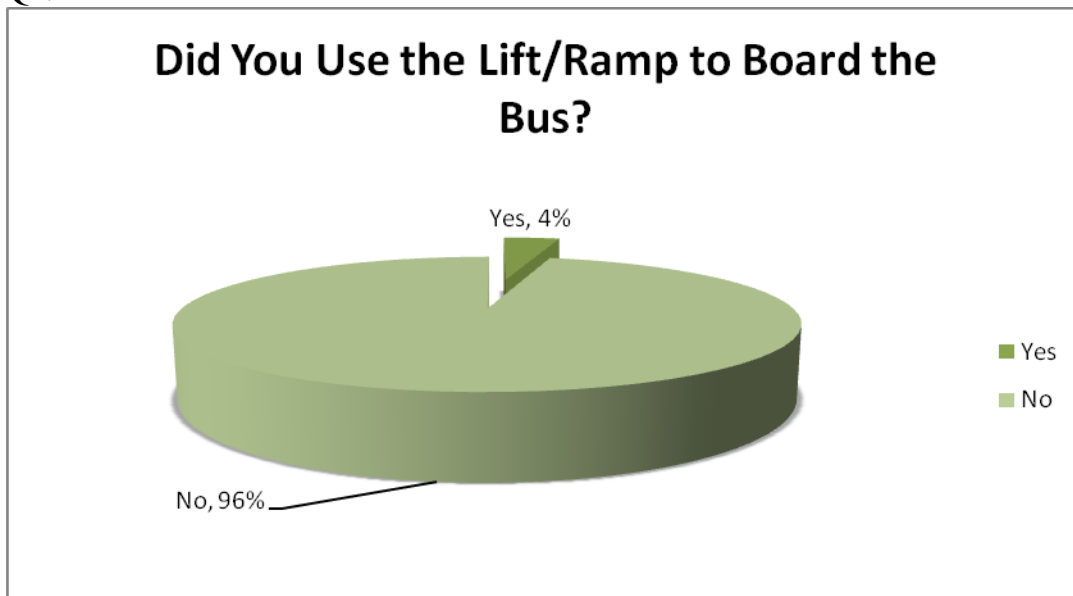




Q3:

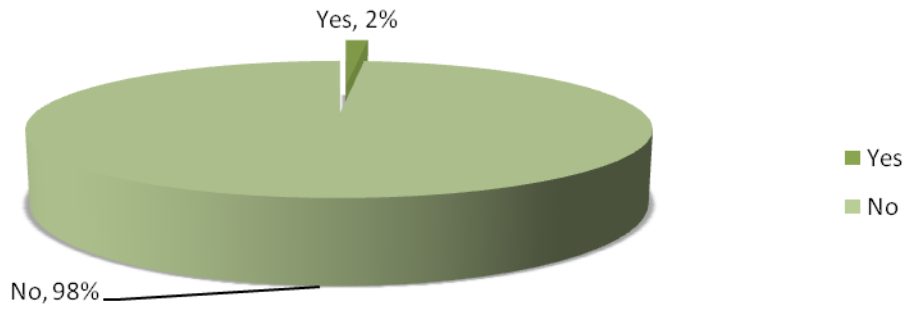


Q4:



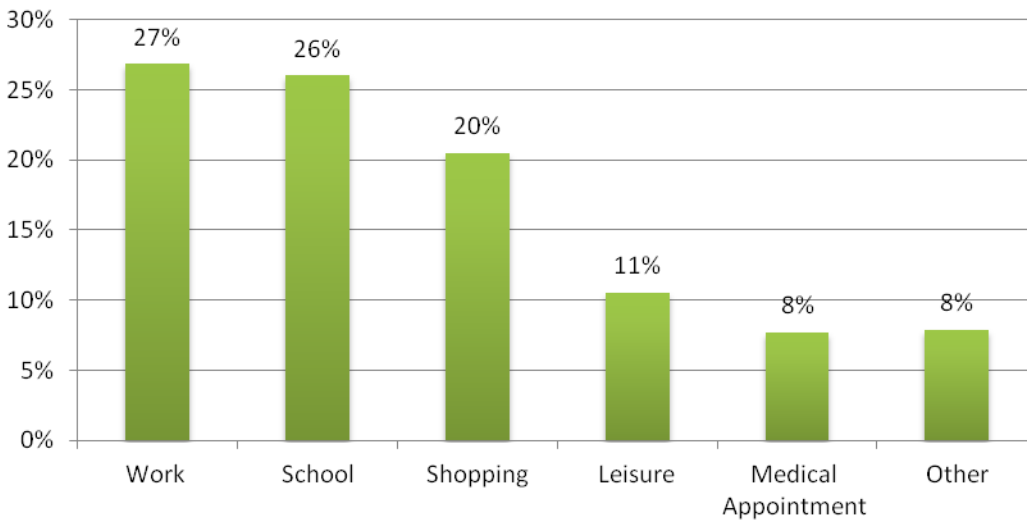
Q5:

## Did You Use the Bicycle Rack?

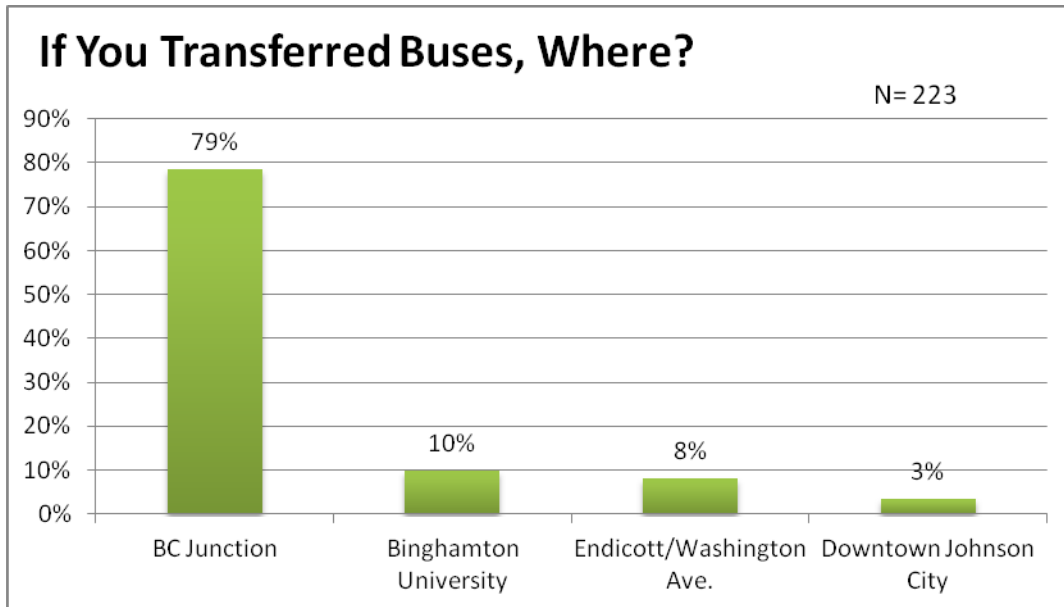
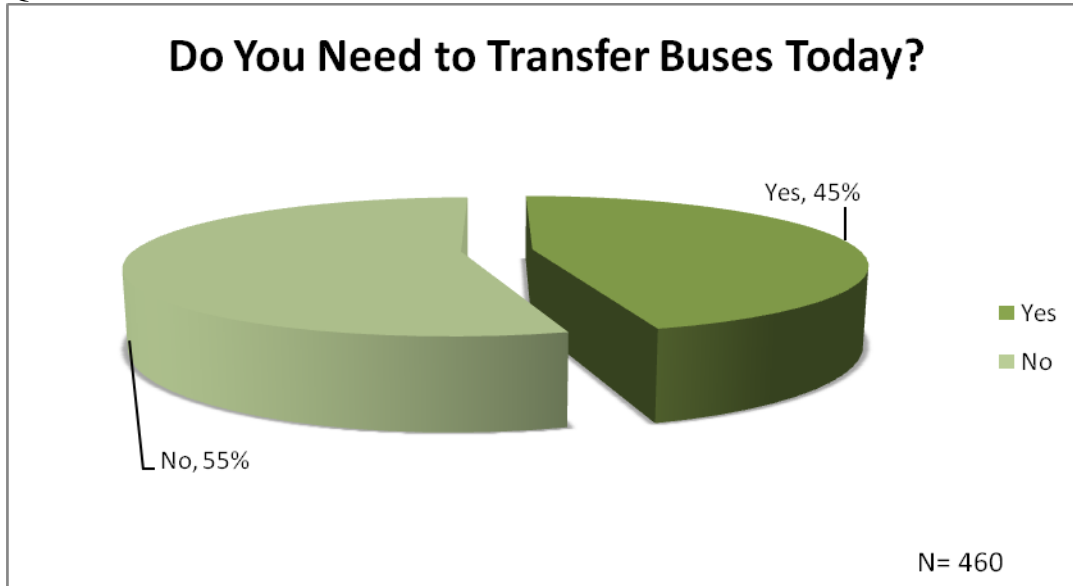


Q6:

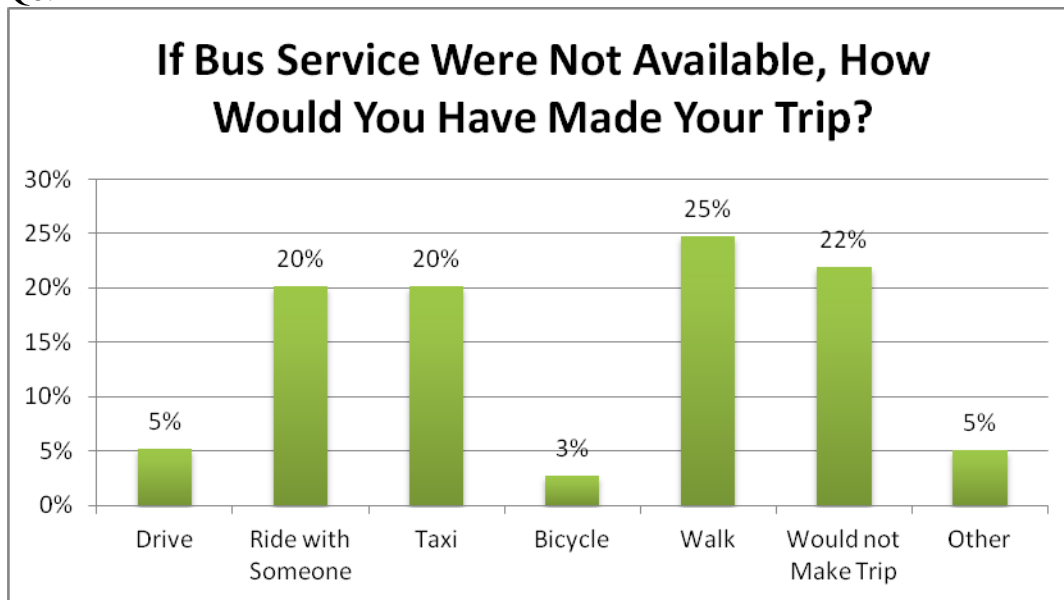
## What is Your Purpose of Today's Trip?



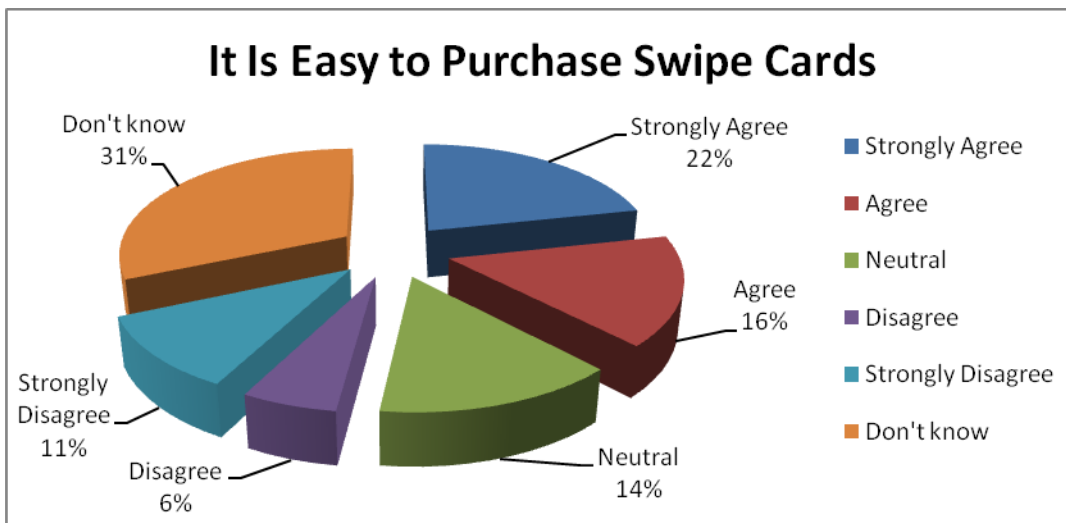
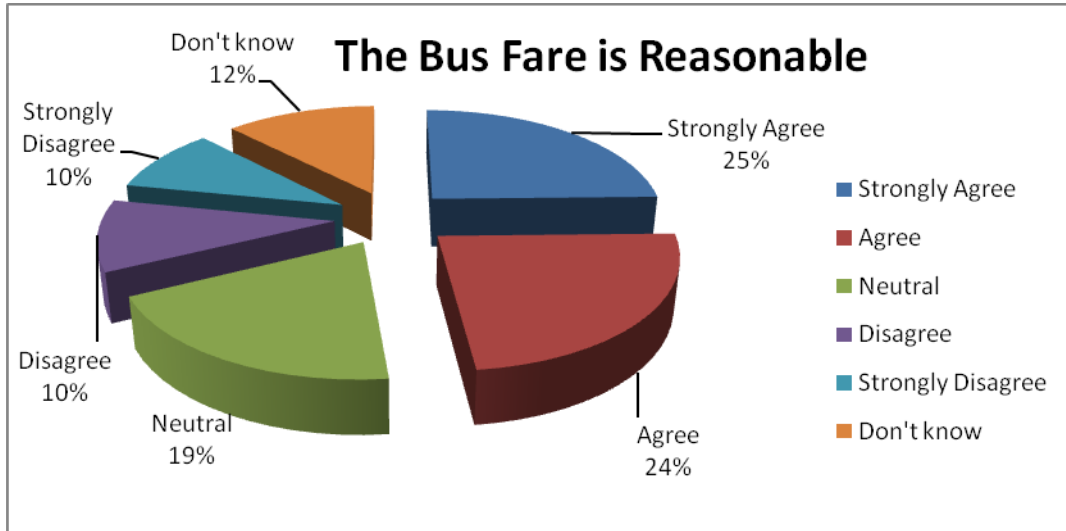
Q7:



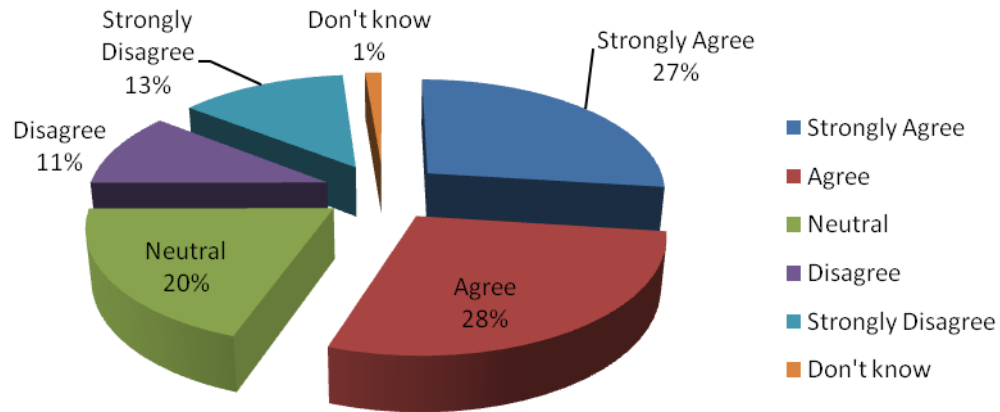
Q8:



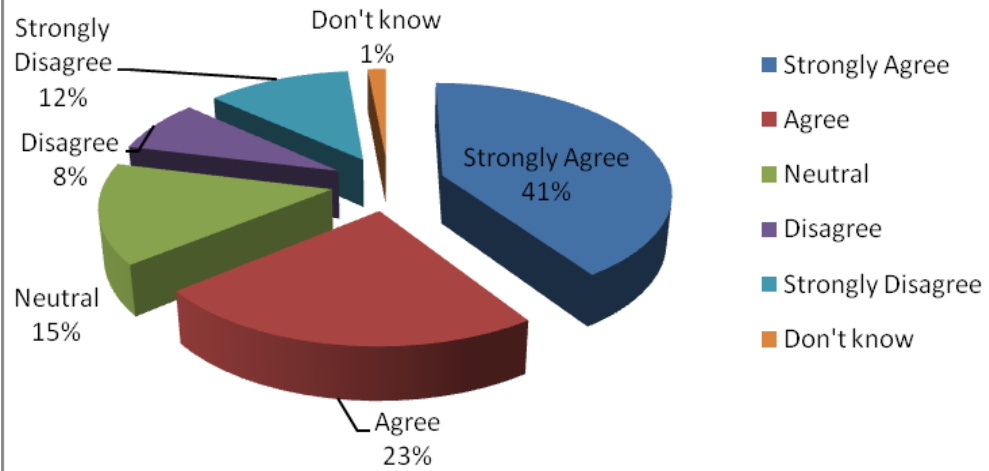
**APPENDIX 4: Visual Summary of Data Regarding Assessment of Services**



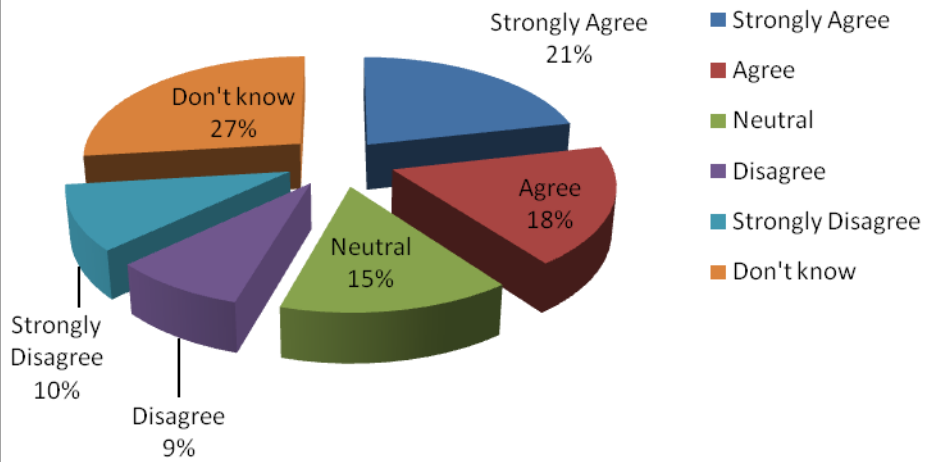
### The Bus Schedule is Easy to Understood



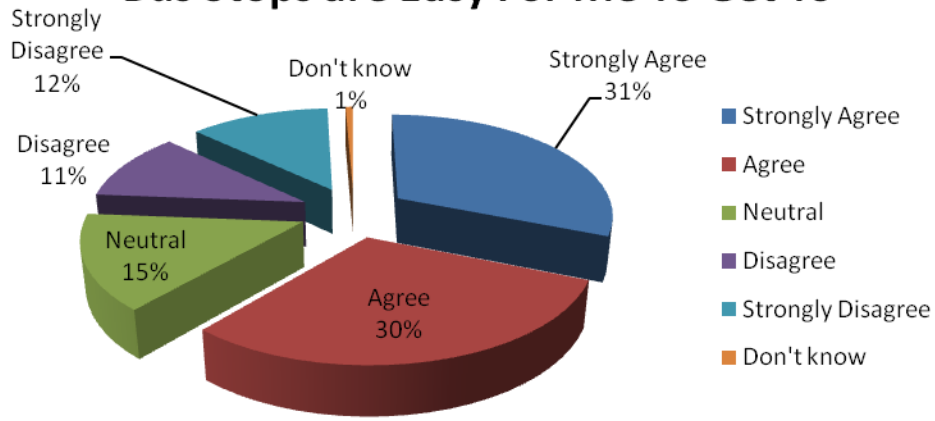
### The Bus Schedule is Easy to Obtained

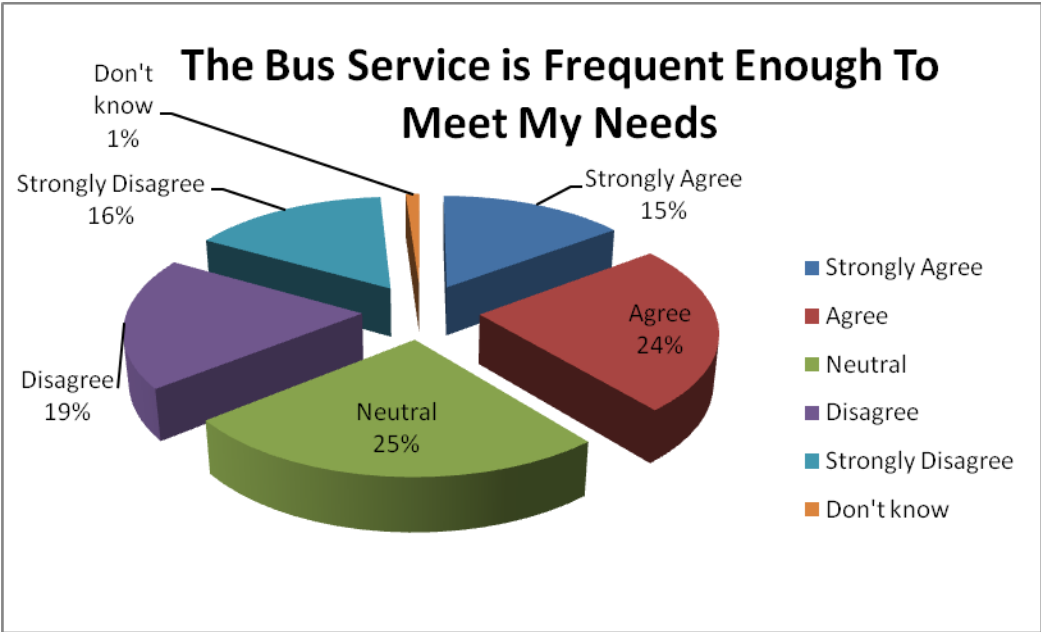
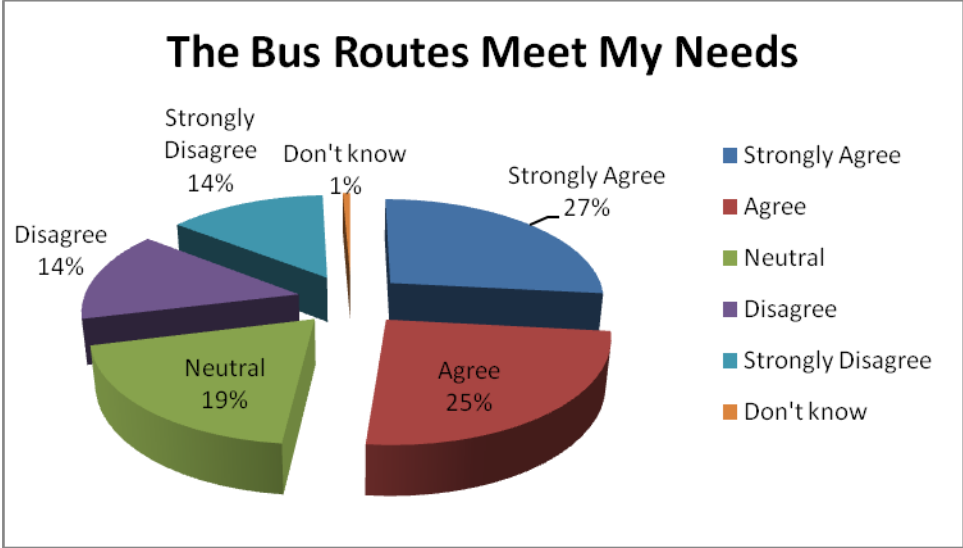


## The BC Transit Website is Easy to Use



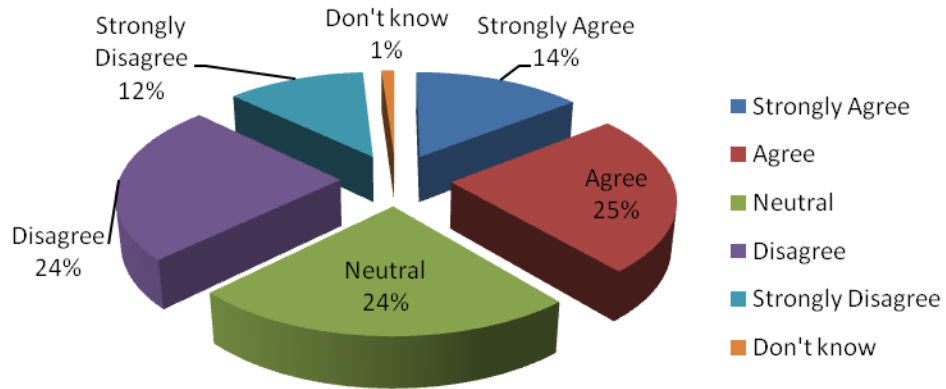
## Bus Stops are Easy For Me To Get To



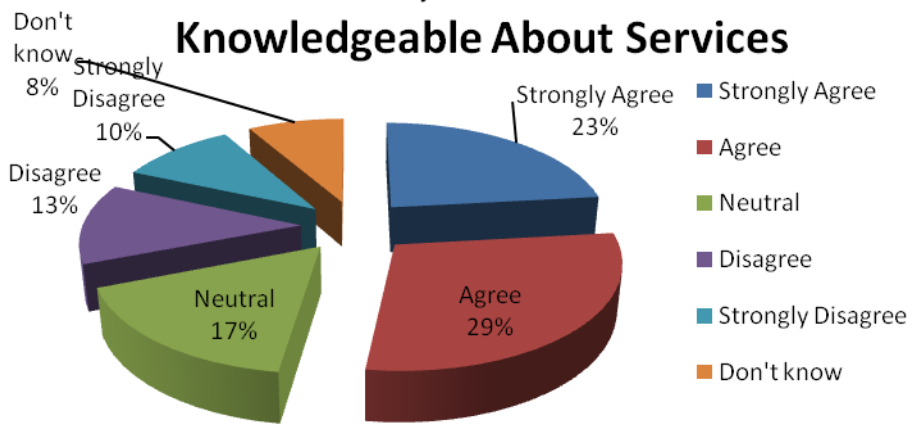


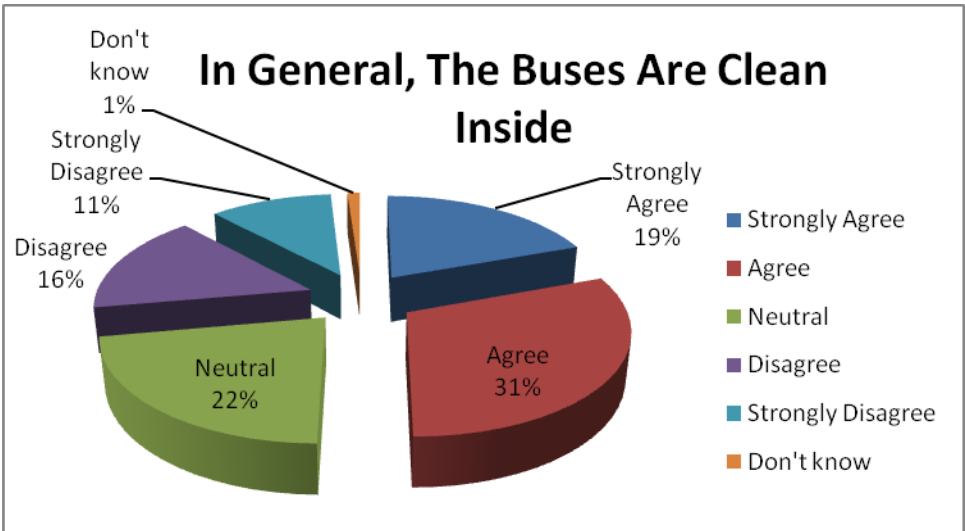
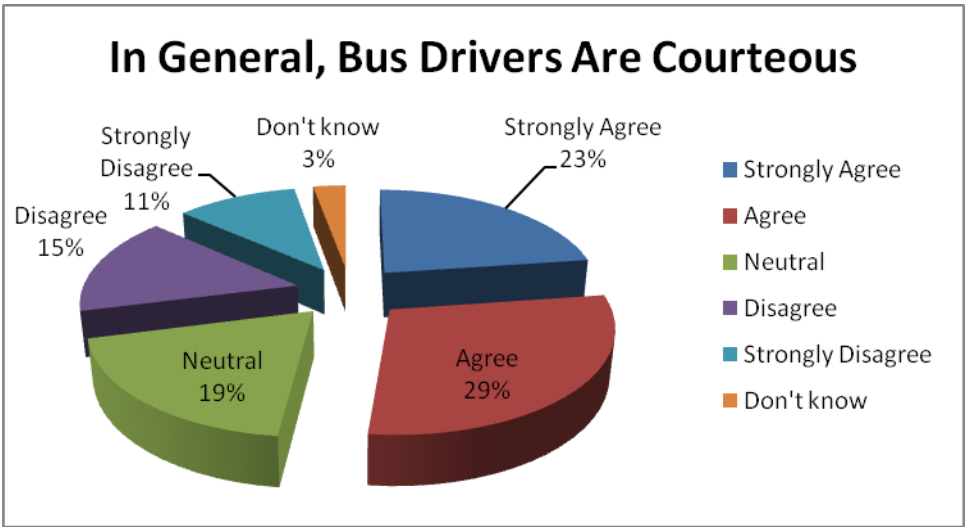
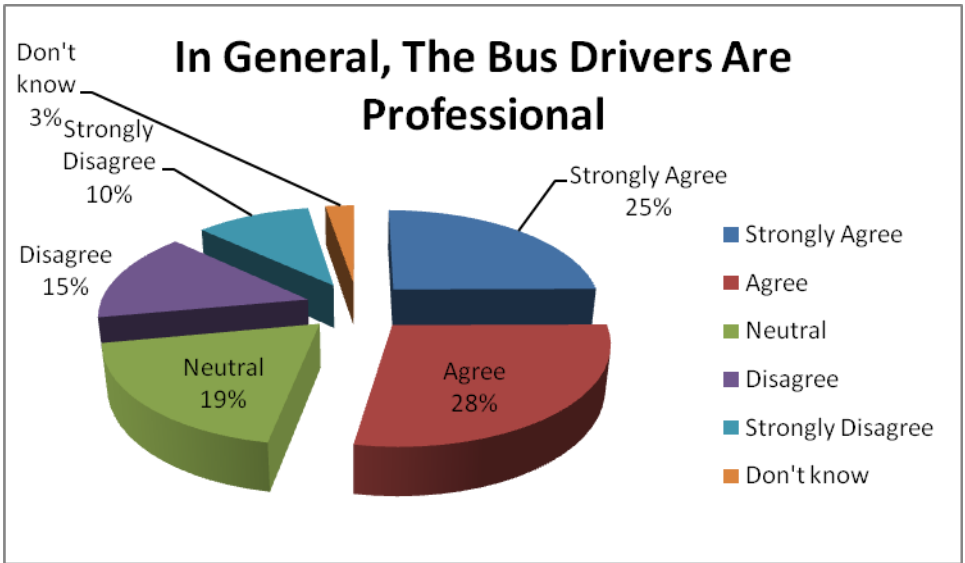


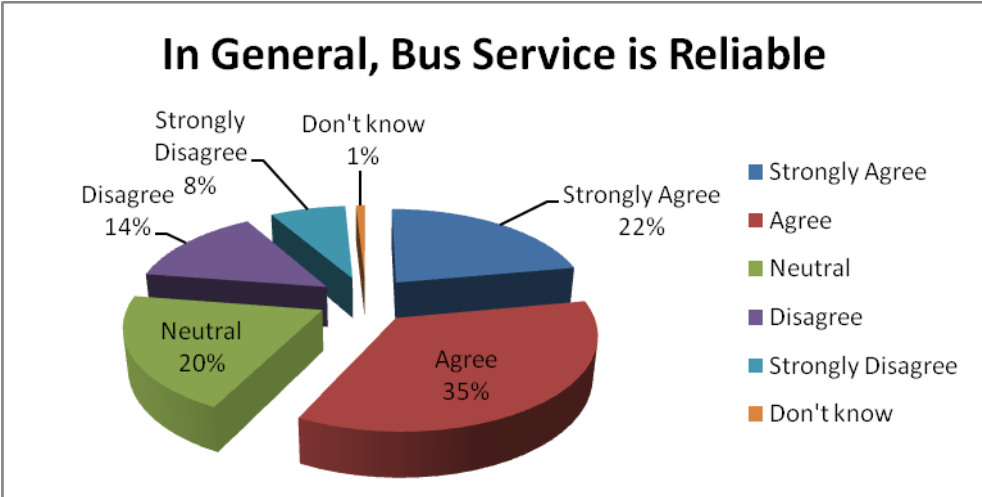
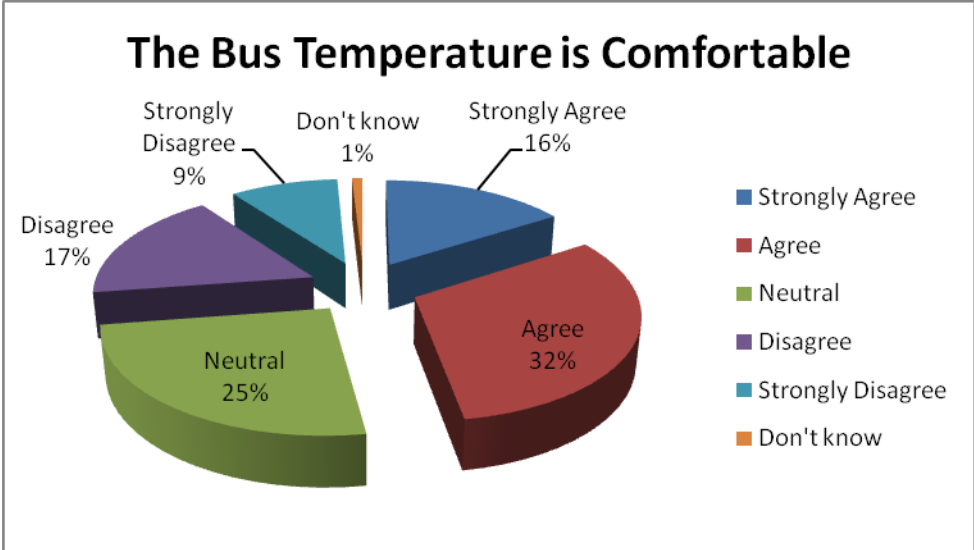
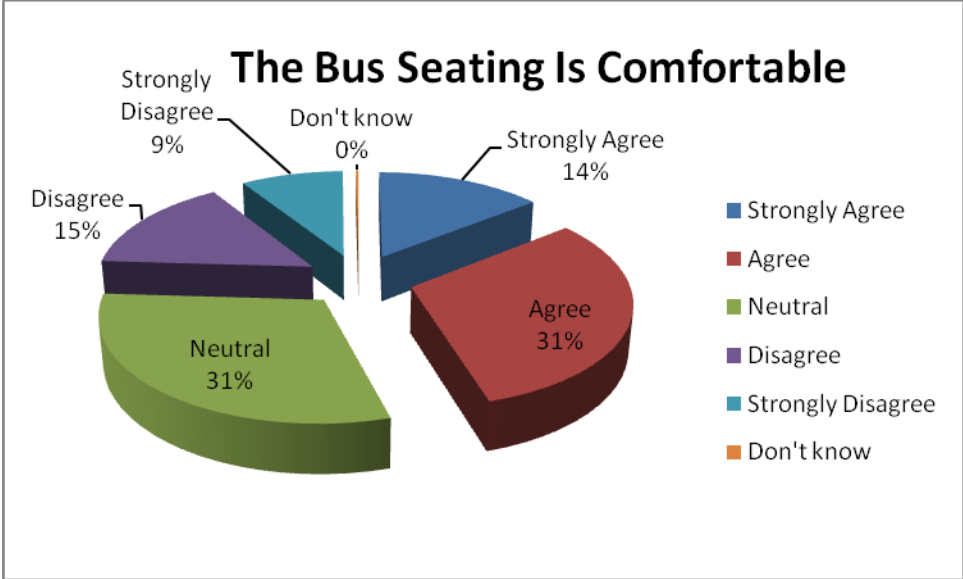
### The Buses Are Consistently on Time



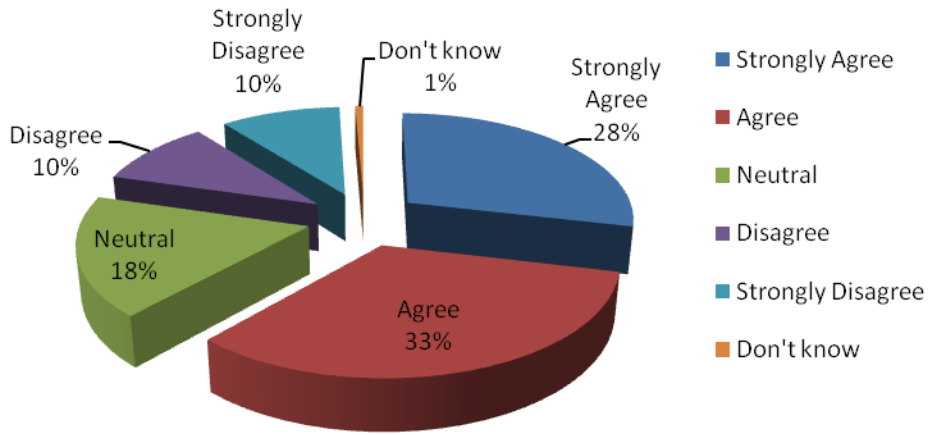
### In General, Bus Drivers Are Knowledgeable About Services



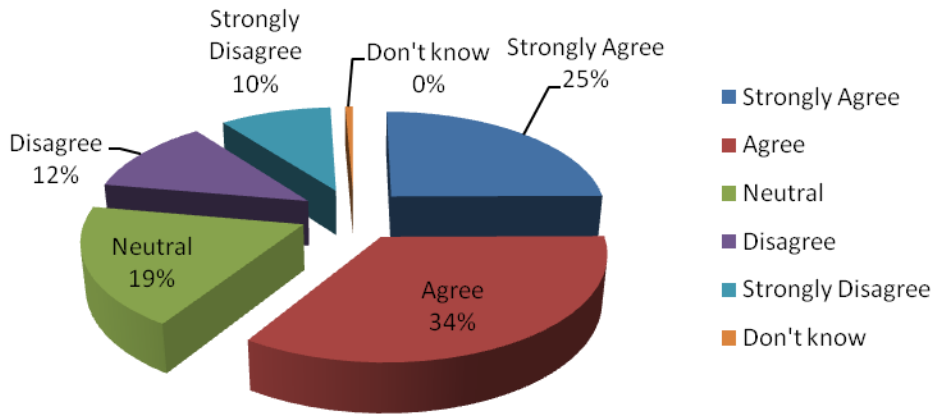




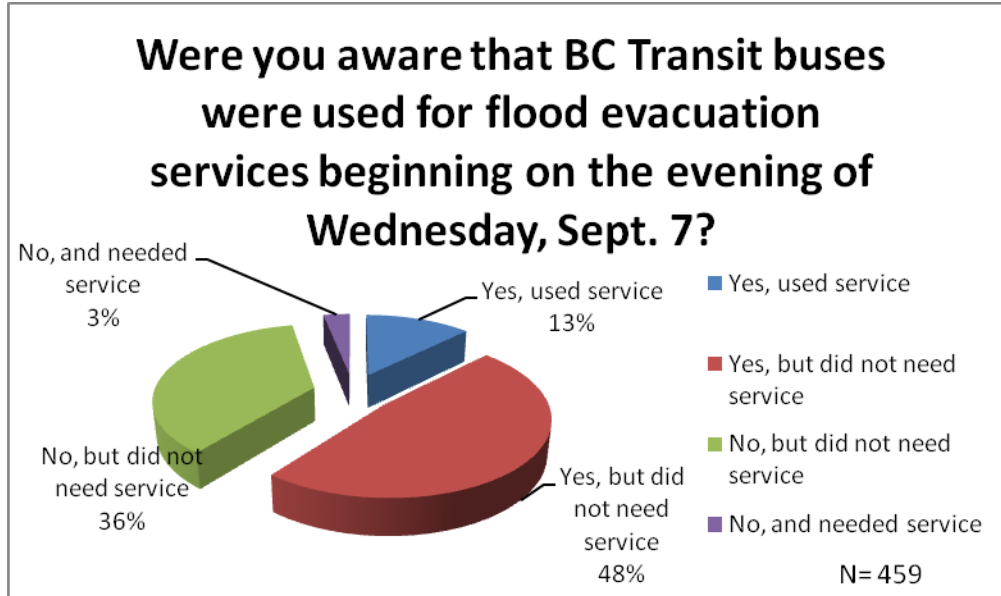
### In General, I Feel Safe on the Bus



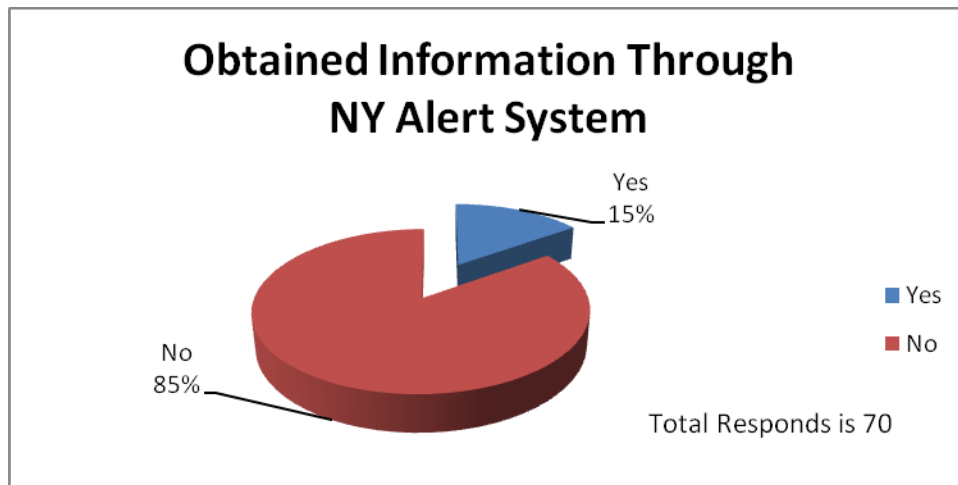
### In General, I Feel Safe at the Bus Stop



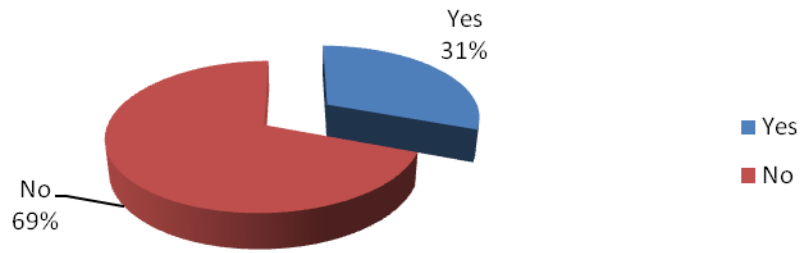
*APPENDIX 5: Visual Summary of Data Regarding Flood Response*



*Question 20: How Did You Obtain Information About the Flood?*

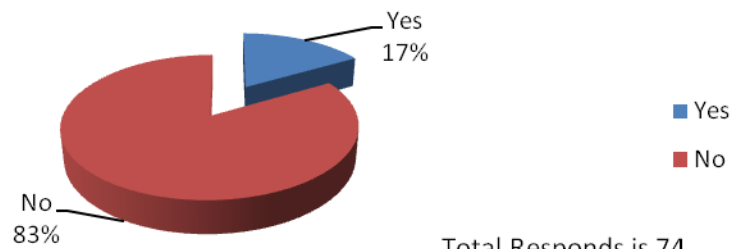


### Obtained Information Through Local Media



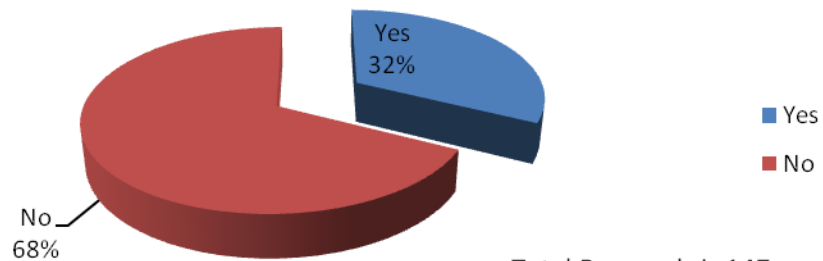
Total Responds is 140

### Obtained Information Directly Through BC Transit



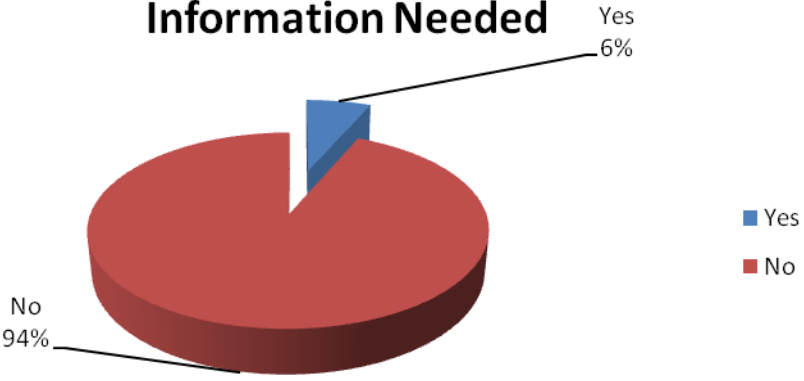
Total Responds is 74

### Did Not Need Information About BC Transit



Total Responds is 147

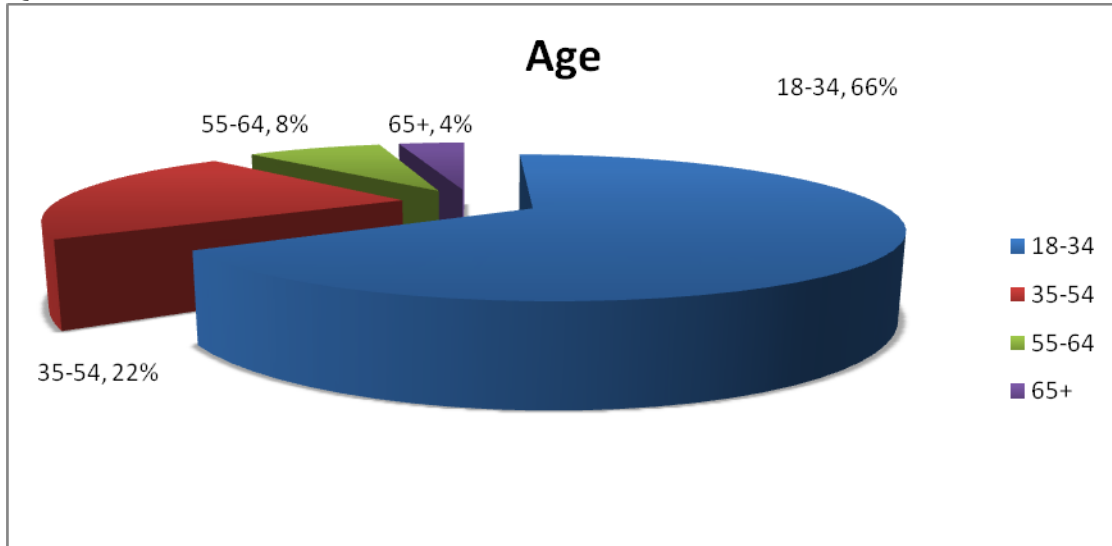
# Unable to Locate the Information Needed



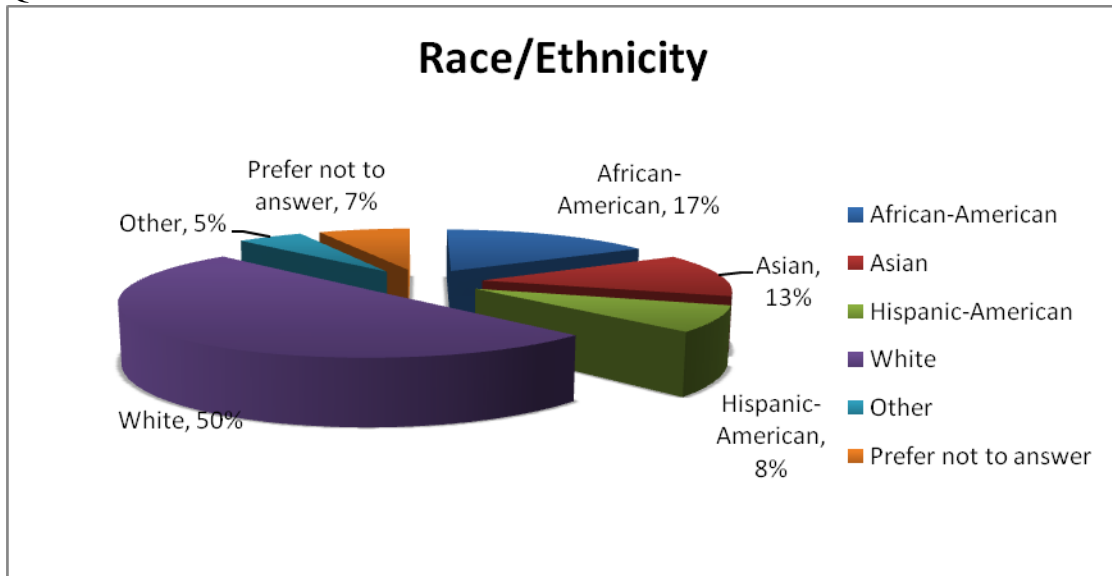
Total Responds is 30

**APPENDIX 6: Visual Summary of Data Regarding Respondent Demographics**

Q1:

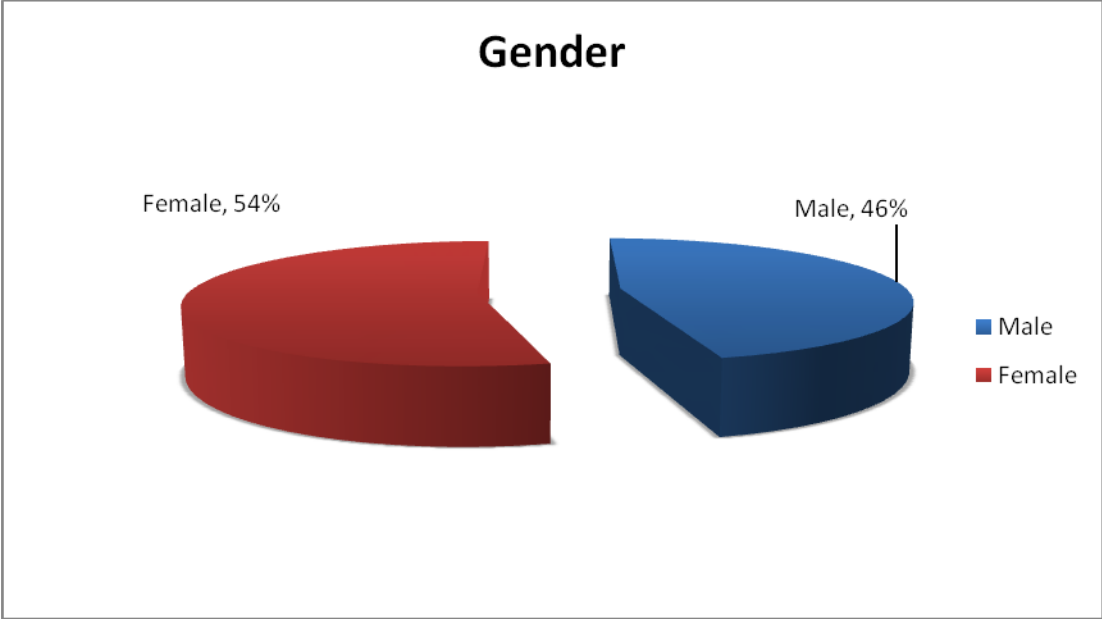


Q2:

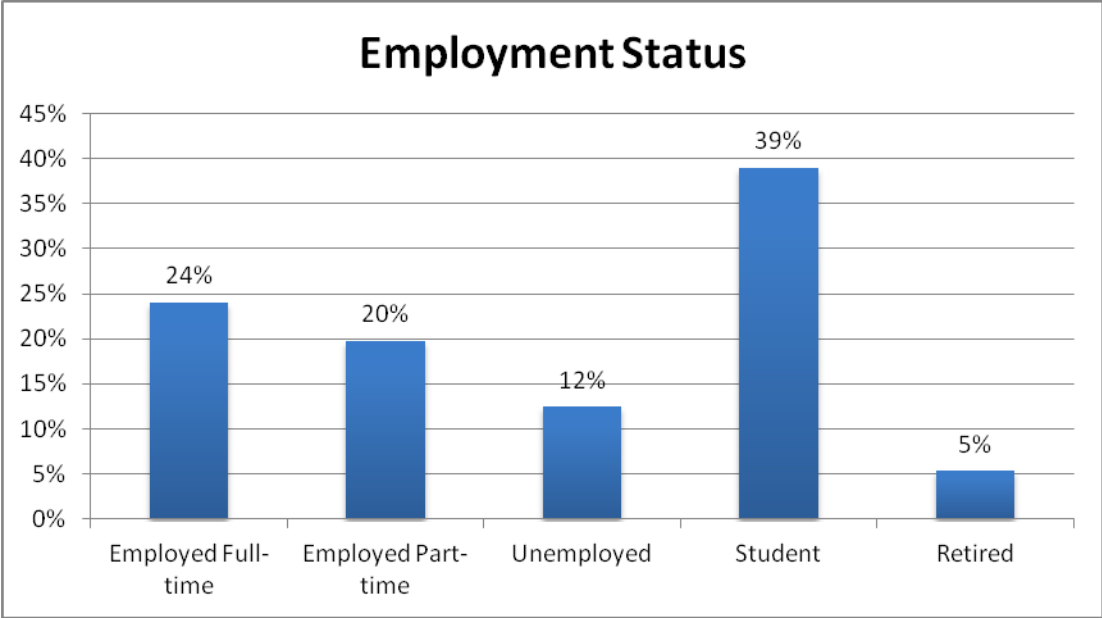


Q3:



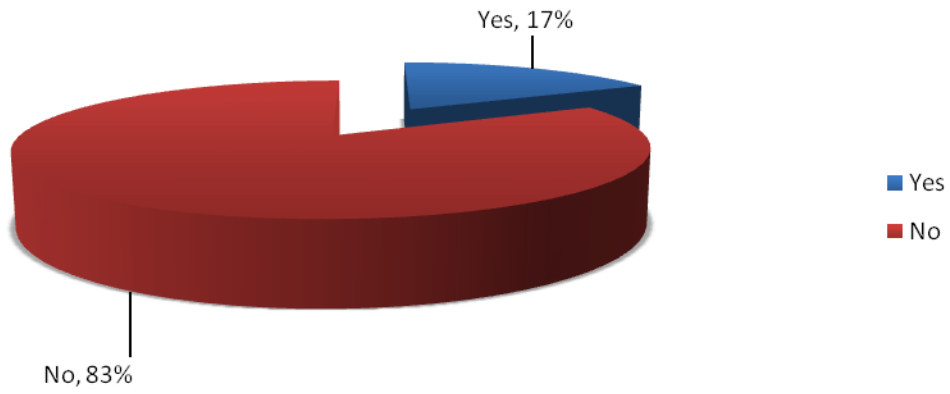


Q4:

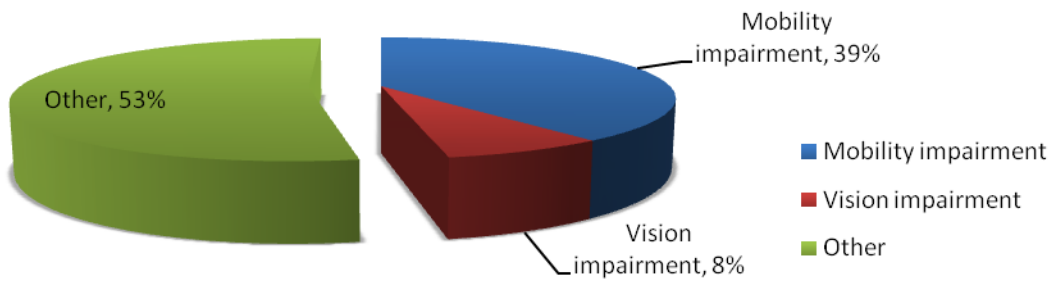


Q5:

## Do You Have a Disability?

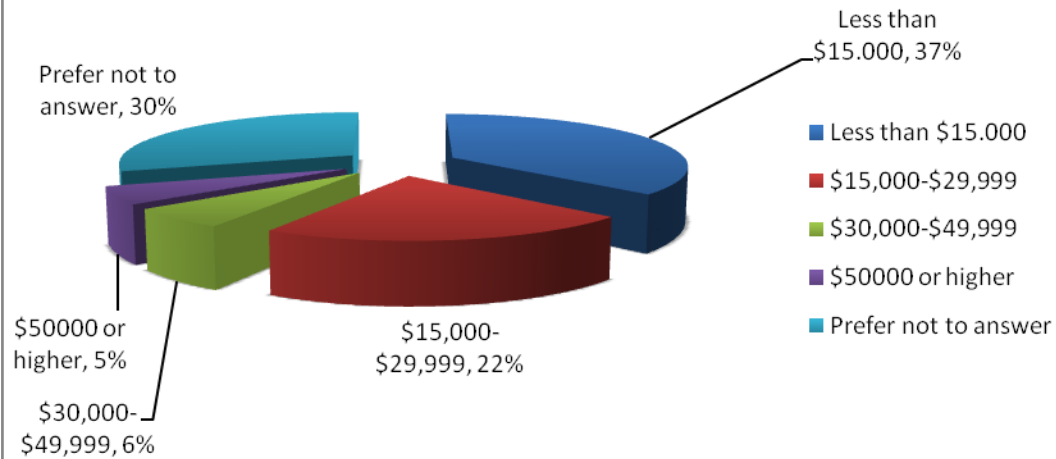


## If You Have a Disability, What Type?



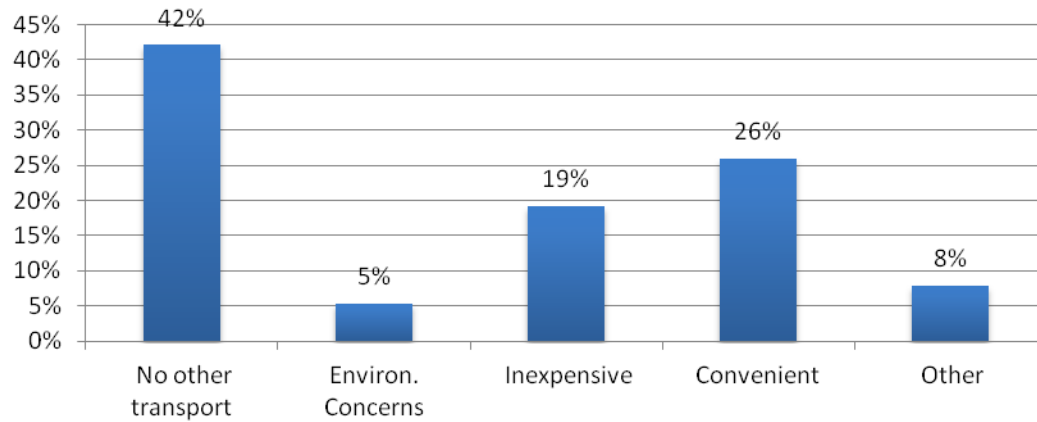
Q6:

## What is Your Annual Household Income?

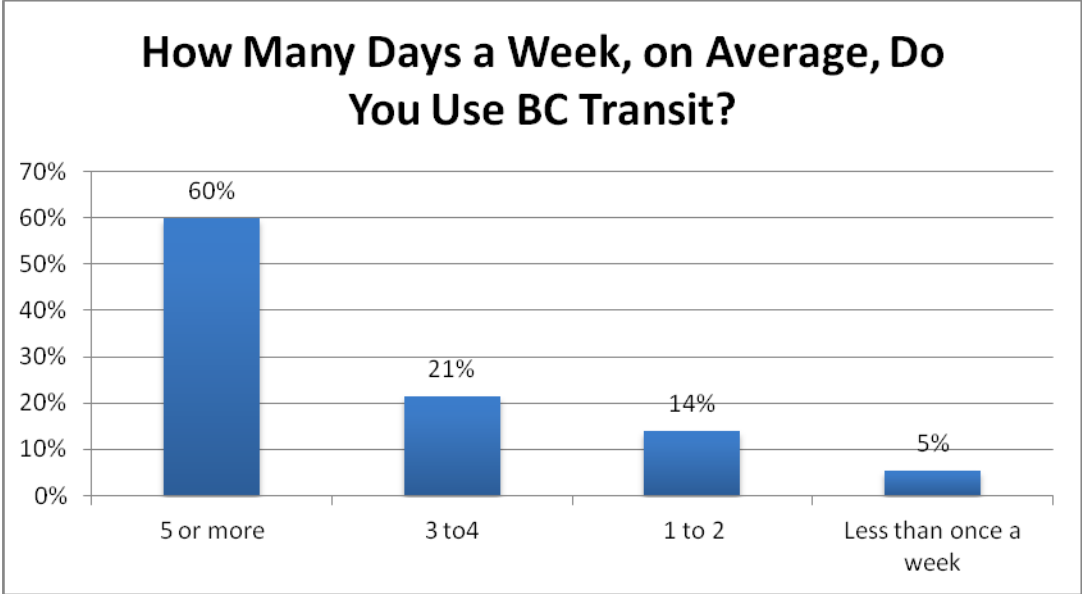


Q7:

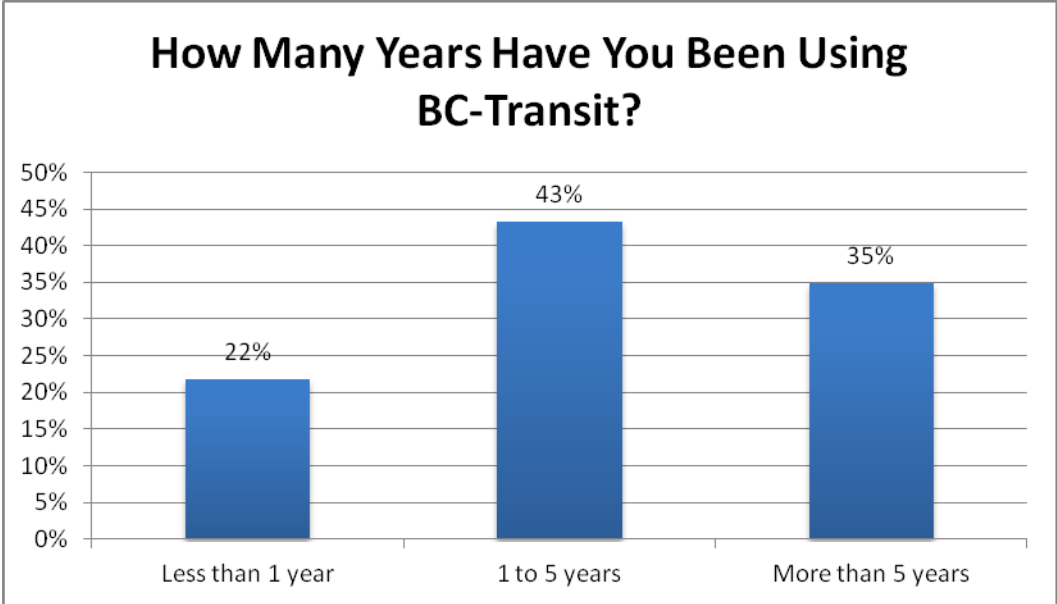
## What is the Reason You Are Using BC Transit Today?



Q9:

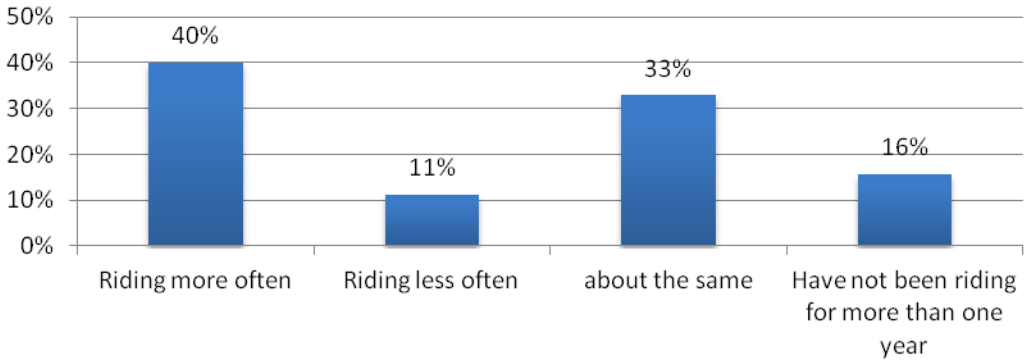


Q10:



Q11:

## If You Have Been Riding More Than One Year, Are You Riding More or Less Than One Year Ago?



*APPENDIX 7: Tables of Percent Change*

**Today's Trip**

| <b>Length to Bus Stop</b>                   | <b>Percent Change<br/>from 2009-2011</b> |
|---|--|
| <b>1-5 Minutes</b>                          | <b>-0.63%</b>                            |
| <b>6-10 Minutes</b>                         | <b>-3.17%</b>                            |
| <b>11-15 Minutes</b>                        | <b>1.11%</b>                             |
| <b>16-20 Minutes</b>                        | <b>1.71%</b>                             |
| <b>21-25 Minutes</b>                        | <b>0.76%</b>                             |
| <b>26 Minutes or More</b>                   | <b>-0.43%</b>                            |
| <b>How did you get to the bus<br/>stop?</b> | <b>Percent Change<br/>from 2009-2011</b> |
| <b>Walked</b>                               | <b>-1.88%</b>                            |
| <b>Bicycle</b>                              | <b>-0.18%</b>                            |
| <b>Dropped-off</b>                          | <b>0.96%</b>                             |
| <b>Used a wheelchair</b>                    | <b>-0.20%</b>                            |
| <b>Other</b>                                | <b>0.44%</b>                             |

|                                   |  |
|-----------------------------------|--|
| <b>How did you pay your fare?</b> | <b>Percent Change<br/>from 2009-2011</b> |
| <b>Cash</b>                       | <b>-2.56%</b>                            |
| <b>Total Single Passes</b>        | <b>0.16%</b>                             |
| <b>12 Ride Pass</b>               | <b>-1.19%</b>                            |
| <b>BU ID</b>                      | <b>15.20%</b>                            |
| <b>31 Day Bus Pass</b>            | <b>-9.43%</b>                            |
| <b>Other</b>                      | <b>-2.19%</b>                            |
| <b>Use of Lift/Ramp</b>           | <b>Percent Change<br/>from 2009-2011</b> |
| <b>Yes</b>                        | <b>0.38%</b>                             |
| <b>No</b>                         | <b>-0.38%</b>                            |
| <b>Use of Bike Rack</b>           | <b>Percent Change<br/>from 2009-2011</b> |
| <b>Yes</b>                        | <b>-2.01%</b>                            |
| <b>No</b>                         | <b>2.01%</b>                             |

| <b>Purpose of Trip</b>            | <b>Percent Change<br/>from 2009-2011</b> |
|-----------------------------------|--|
| <b>Work</b>                       | <b>-3.34%</b>                            |
| <b>School</b>                     | <b>-0.12%</b>                            |
| <b>Shopping</b>                   | <b>5.36%</b>                             |
| <b>Leisure</b>                    | <b>0.05%</b>                             |
| <b>Medical Appointment</b>        | <b>-2.04%</b>                            |
| <b>Other</b>                      | <b>0.09%</b>                             |
| <b>Need to Transfer</b>           | <b>Percent Change<br/>from 2009-2011</b> |
| <b>Yes</b>                        | <b>0.15%</b>                             |
| <b>No</b>                         | <b>-0.15%</b>                            |
| <b>Total Responses</b>            |  |
| <b>If yes, where Transferred?</b> |  |
| <b>BC Junction</b>                | <b>-4.72%</b>                            |
| <b>Binghamton University</b>      | <b>1.94%</b>                             |
| <b>Endicott/Washington Ave.</b>   | <b>2.42%</b>                             |
| <b>Downtown Johnson City</b>      | <b>0.35%</b>                             |



| <b>How Would You Make The Trip Without Buses</b> | <b>Percent Change from 2009-2011</b> |
|--|--------------------------------------|
| <b>Drive</b>                                     | <b>0.83%</b>                         |
| <b>Ride with Someone</b>                         | <b>-1.31%</b>                        |
| <b>Taxi</b>                                      | <b>-2.78%</b>                        |
| <b>Bicycle</b>                                   | <b>-0.24%</b>                        |
| <b>Walk</b>                                      | <b>4.76%</b>                         |
| <b>Would not Make Trip</b>                       | <b>-6.34%</b>                        |
| <b>Other</b>                                     | <b>5.08%</b>                         |

## Assessment of Services

| <b>Question</b>                                    | <b>Change in Satisfaction from 2009 to 2011</b> | <b>Change in Dissatisfaction from 2009 to 2011</b> |
|--|---|--|
| <b>Q1. The bus fare is reasonable</b>              | <b>-0.99%</b>                                   | <b>0.95%</b>                                       |
| <b>Q2. It is easy to purchase swipe cards</b>      | <b>-13.41%</b>                                  | <b>2.68%</b>                                       |
| <b>Q3. The bus schedule is easy to understand</b>  | <b>-4.49%</b>                                   | <b>7.31%</b>                                       |
| <b>Q4. The bus schedule is easy to obtain</b>      | <b>-5.90%</b>                                   | <b>6.83%</b>                                       |
| <b>Q5. The BC Transit website is easy to use</b>   | <b>-6.21%</b>                                   | <b>6.23%</b>                                       |
| <b>Q6. The bus stops are easy for me to get to</b> | <b>-5.03%</b>                                   | <b>11.64%</b>                                      |
| <b>Q7. The bus routes meet my needs</b>            | <b>-9.23%</b>                                   | <b>12.14%</b>                                      |

|  |                |               |
|--|----------------|---------------|
| <b>Q8. The bus service is frequent enough to meet my needs</b>       | <b>-10.66%</b> | <b>7.66%</b>  |
| <b>Q9. The buses are consistently on time</b>                        | <b>-6.09%</b>  | <b>8.11%</b>  |
| <b>Q10. In general, bus drivers are knowledgeable about services</b> | <b>-5.15%</b>  | <b>9.82%</b>  |
| <b>Q11. In general, bus drivers are professional</b>                 | <b>-5.99%</b>  | <b>11.17%</b> |
| <b>Q12. In general, the bus drivers are courteous</b>                | <b>-3.58%</b>  | <b>12.58%</b> |
| <b>Q13. In general, the buses are clean inside</b>                   | <b>-2.63%</b>  | <b>10.00%</b> |
| <b>Q14. The bus seating is comfortable</b>                           | <b>-0.71%</b>  | <b>3.82%</b>  |
| <b>Q15. The bus temperature is comfortable</b>                       | <b>-9.99%</b>  | <b>12.00%</b> |

|   |               |              |
|---|---------------|--------------|
| <b>Q16. In general, bus service is reliable</b>     | <b>-1.88%</b> | <b>6.01%</b> |
| <b>Q17. In general, I feel safe on the bus</b>      | <b>-6.48%</b> | <b>8.39%</b> |
| <b>Q18. In general, I feel safe at the bus stop</b> | <b>-0.89%</b> | <b>7.71%</b> |

**Background information section**

| <b>Question</b>                  | <b>2009-2011 change%</b> |
|----------------------------------|--------------------------|
| <b><i>Q1: Age</i></b>            |                          |
| <b>18-34</b>                     | <b>6.37%</b>             |
| <b>35-54</b>                     | <b>-6.45%</b>            |
| <b>55-64</b>                     | <b>1.99%</b>             |
| <b>65+</b>                       | <b>-1.91%</b>            |
| <b><i>Q2: Race/Ethnicity</i></b> |                          |
| <b>African-American</b>          | <b>-4.42%</b>            |
| <b>Asian</b>                     | <b>2.19%</b>             |
| <b>Hispanic-American</b>         | <b>-1.04%</b>            |
| <b>White</b>                     | <b>4.58%</b>             |
| <b>Other</b>                     | <b>-0.69%</b>            |
| <b>Prefer not to answer</b>      | <b>-0.62%</b>            |

|   |                |
|---|----------------|
| <b><i>Q3. Gender</i></b>                                |                |
| <b>Male</b>   | <b>1.44%</b>   |
| <b>Female</b>   | <b>-1.44%</b>  |
| <b><i>Q4. Employment Status</i></b>                     |                |
| <b>Employed Full-time</b>                               | <b>-5.86%</b>  |
| <b>Employed Part-time</b>                               | <b>1.83%</b>   |
| <b>Unemployed</b>                                       | <b>-3.67%</b>  |
| <b>Student</b>  | <b>9.98%</b>   |
| <b>Retired</b>  | <b>-2.29%</b>  |
| <b><i>Q5. Do you have a disability?</i></b>             |                |
| <b>Yes</b>  | <b>4.32%</b>   |
| <b>No</b>   | <b>-4.32%</b>  |
| <b>If yes,</b>  |                |
| <b>Mobility impairment</b>                              | <b>20.39%</b>  |
| <b>Vision impairment</b>                                | <b>1.58%</b>   |
| <b>Other</b>  | <b>-20.97%</b> |
| <b><i>Q6. What is your annual household income?</i></b> |                |
| <b>Less than \$15,000</b>                               | <b>1.98%</b>   |
| <b>\$15,000-\$29,999</b>                                | <b>-3.64%</b>  |
| <b>\$30,000-\$49,999</b>                                | <b>-2.40%</b>  |
| <b>\$50000 or higher</b>                                | <b>1.29%</b>   |
| <b>Prefer not to answer</b>                             | <b>2.77%</b>   |

|  |               |
|--|---------------|
| <b><i>Q7. What is the reason you are using BC Transit today?</i></b>       |               |
| <b>No other transport</b>  | <b>N/A</b>    |
| <b>Environ. Concerns</b>   | <b>N/A</b>    |
| <b>Inexpensive</b>   | <b>N/A</b>    |
| <b>Convenient</b>  | <b>N/A</b>    |
| <b>Other</b>   | <b>N/A</b>    |
| <b><i>Q9. How many days a week, on average, do you use BC Transit?</i></b> |               |
| <b>5 or more</b>   | <b>-7.57%</b> |
| <b>Three or Four</b>   | <b>-0.20%</b> |
| <b>Once or twice</b>   | <b>5.15%</b>  |
| <b>Less than once a week</b>   | <b>2.63%</b>  |
| <b><i>Q10. How many years have you been riding BC Transit?</i></b>         |               |
| <b>Less than 1 year</b>  | <b>5.13%</b>  |
| <b>1 to 5 years</b>  | <b>-3.41%</b> |
| <b>More than 5 years</b>   | <b>-1.72%</b> |

|  |               |
|--|---------------|
| <i>Q11. If you have been riding more than one year, are you riding more or less than one year ago?</i> |               |
| <b>Riding more often</b>   | <b>-6.12%</b> |
| <b>Riding less often</b>   | <b>0.84%</b>  |
| <b>about the same</b>  | <b>4.58%</b>  |
| <b>Have not been riding for more than one year</b>   | <b>0.72%</b>  |

## APPENDIX 8: Bus Routes Survey Schedule

### BINGHAMTON UNIVERSITY MPA CUSTOMER SATISFACTION STUDY

| SAMP<br>LE | BUS<br>ROUTE | HOURS        | STUDEN<br>T | DAY         | DATE                                    |     |                              |           |            |
|------------|--------------|--------------|-------------|-------------|---|-----|------------------------------|-----------|------------|
| 1          | 3 PARK AVE   | MON-FRI      | 8:20 AM     | 8:45AM      | START AT BC<br>JUNCTION                 | 0.5 | Chris<br>Marshall            | Mon       | 10-<br>Oct |
| 2          | 5 VESTAL     | MON-FRI      | 10:20AM     | 11:15A<br>M | START AT<br>SCHOOL OF<br>MANAGEMEN<br>T | 1   | Reuben<br>Dacher-<br>Shapiro | Wed       | 5-Oct      |
| 3          | 5 VESTAL     | MON-FRI      | 12:20PM     | 1:15PM      | START AT<br>SCHOOL OF<br>MANAGEMEN<br>T | 1   | Reuben<br>Dacher-<br>Shapiro | Mon       | 10-<br>Oct |
| 4          | 5/15         | MON-FRI      | 10PM        | 11PM        | START AT<br>UNIVERSITY<br>UNION         | 1   | Reuben<br>Dacher-<br>Shapiro | Wed       | 12-<br>Oct |
| 5          | 15/5         | SATURDA<br>Y | 8:20AM      | 9:15AM      | START AT<br>SCHOOL OF<br>MANAGEMEN<br>T | 1   | Tyler<br>Lenga               | Sat       | 8-Oct      |
| 6          | 5/15         | SATURDA<br>Y | 6:50PM      | 7:15PM      | START AT BC<br>JUNCTION                 | 1   | Natalie<br>Fischer           | Sat       | 15-<br>Oct |
| 7          | 15/5         | SUNDAY       | 2:20PM      | 3:15PM      | START AT<br>SCHOOL OF<br>MANAGEMEN<br>T | 1   | Nicole<br>Velez-<br>Green    | Sun       | 16-<br>Oct |
| 8          | 7 CLINTON    | MON-FRI      | 12:50PM     | 1:45PM      | START AT BC<br>JUNCTION                 | 1   | Jeff<br>Quain                | Wed       | 5-Oct      |
| 9          | 7 CLINTON    | SATURDA<br>Y | 1:50PM      | 2:45PM      | START AT BC<br>JUNCTION                 | 1   | Olga<br>Tyurina              | Sat       | 8-Oct      |
| 10         | 8 FRONT      | MON-FRI      | 6:50AM      | 7:45AM      | START AT BC<br>JUNCTION                 | 1   | Shelbi<br>Hale               | Wed       | 5-Oct      |
| 11         | 8 FRONT      | MON-FRI      | 1:20PM      | 2:15PM      | START AT BC<br>JUNCTION                 | 1   | Jeff<br>Quain                | Wed       | 12-<br>Oct |
| 12         | 8 FRONT      | MON-FRI      | 5:20PM      | 6:15<br>PM  | START AT BC<br>JUNCTION                 | 1   | Alison<br>Handy              | Wed       | 5-Oct      |
| 13         | 8 FRONT ST   | SATURDA<br>Y | 3:50PM      | 4:45PM      | START AT BC<br>JUNCTION                 | 1   | Alex<br>Halman               | Sat       | 8-Oct      |
| 14         | 12 CONKLIN   | MON-FRI      | 11:50AM     | 12:15P<br>M | START AT BC<br>JUNCTION                 | 0.5 | Alex<br>Halman               | Tues      | 11-<br>Oct |
| 15         | 12/28/40     | MON-FRI      | 9:50PM      | 10:45P<br>M | START AT BC<br>JUNCTION                 | 1   | Natalie<br>Fischer           | Mon       | 10-<br>Oct |
| 16         | 12 CONKLIN   | SATURDA<br>Y | 3:50PM      | 4:15PM      | START AT BC<br>JUNCTION                 | 0.5 | Natalie<br>Fischer           | Sat       | 8-Oct      |
| 17         | 12/28/40     | SUNDAY       | 1:50PM      | 2:45PM      | START AT BC<br>JUNCTION                 | 1   | Alex<br>Halman               | Sun       | 16-<br>Oct |
| 18         | 15 LEROY     | MON-FRI      | 9:50AM      | 10:45A<br>M | START AT BC<br>JUNCTION                 | 1   | Jewell<br>Solomon            | Wed       | 12-<br>Oct |
| 19         | 15 LEROY     | MON-FRI      | 3:20PM      | 4:15PM      | START AT<br>UNIVERSITY<br>UNION         | 1   | Tim<br>Fitzgearld            | Thur<br>s | 6-Oct      |
| 20         | 15 LEROY     | MON-FRI      | 3:50PM      | 4:45PM      | START AT BC<br>JUNCTION                 | 1   | Jeff<br>Quain                | Fri       | 7-Oct      |
| 21         | 15 LEROY     | MON-FRI      | 8:50AM      | 9:45AM      | START AT BC                             | 1   | Chris                        | Mon       | 10-        |



|    |                |          |         |         |                           |     |                    |       |        |
|----|----------------|----------|---------|---------|---------------------------|-----|--------------------|-------|--------|
|    |                |          |         |         | JUNCTION                  |     | Marshall           |       | Oct    |
| 22 | 17 ELY PARK    | MON-FRI  | 7:50AM  | 8:45AM  | START AT UNIVERSITY UNION | 1   | Tyler Lenga        | Mon   | 10-Oct |
| 23 | 17 ELY PARK    | MON-FRI  | 1:50PM  | 2:45PM  | START AT UNIVERSITY UNION | 1   | Nicole Velez-Green | Tue   | 11-Oct |
| 24 | 23 RIVERSIDE   | MON-FRI  | 2:50PM  | 3:15PM  | START AT BC JUNCTION      | 0.5 | Chris Marshall     | Thurs | 6-Oct  |
| 25 | 28 ROBINSON    | MON-FRI  | 7:20AM  | 8:15AM  | START AT BC JUNCTION      | 1   | Alex Halman        | Wed   | 5-Oct  |
| 26 | 28 ROBINSON    | MON-FRI  | 9:50AM  | 10:45AM | START AT BC JUNCTION      | 1   | Lauren Wasserman   | Fri   | 7-Oct  |
| 27 | 35 ENDICOTT    | MON-FRI  | 10:20AM | 12:15PM | START AT BC JUNCTION      | 2   | Olga Tyurina       | Wed   | 12-Oct |
| 28 | 35 ENDICOTT    | MON-FRI  | 2:50PM  | 4:45PM  | START AT BC JUNCTION      | 2   | Max McKenna        | Wed   | 5-Oct  |
| 29 | 35 ENDICOTT    | MON-FRI  | 4:50PM  | 6:45PM  | START AT BC JUNCTION      | 2   | Max McKenna        | Fri   | 14-Oct |
| 30 | 35 ENDICOTT    | SATURDAY | 4:50PM  | 6:45PM  | START AT BC JUNCTION      | 2   | Alison Handy       | Sat   | 8-Oct  |
| 31 | 40 CHENANGO ST | MON-FRI  | 8:50AM  | 9:45AM  | START AT BC JUNCTION      | 1   | Jewell Solomon     | Tue   | 11-Oct |
| 32 | 40 CHENANGO ST | MON-FRI  | 2:50PM  | 3:45PM  | START AT BC JUNCTION      | 1   | Jewell Solomon     | Thurs | 6-Oct  |
| 33 | 47 TOWN SQ     | MON-FRI  | 12:20PM | 1:15PM  | START AT UNIVERSITY UNION | 1   | Nicole Velez-Green | Thurs | 13-Oct |
| 34 | 47 TOWN SQ     | MON-FRI  | 4:20PM  | 5:15PM  | START AT UNIVERSITY UNION | 1   | Tim Fitzgearld     | Fri   | 14-Oct |
| 35 | 47 TOWN SQ     | SATURDAY | 11:20AM | 12:15PM | START AT UNIVERSITY UNION | 1   | Tim Fitzgearld     | Sat   | 8-Oct  |
| 36 | 51 K COMMUTER  | MON-FRI  | 2:20PM  | 4:00PM  | START AT BC JUNCTION      | 1.5 | Chris Marshall     | Thurs | 13-Oct |
| 37 | 53 CORPORATE   | MON-FRI  | 6:20AM  | 7:15AM  | START AT BC JUNCTION      | 1   | Chris Wells        | Mon   | 10-Oct |
| 38 | 55 ENDWELL     | MON-FRI  | 10:45AM | 11:45AM | START AT TOWN SQUARE MALL | 1   | Chris Wells        | Wed   | 5-Oct  |
| 39 | 57 SHOPPERS    | MON-FRI  | 12:00PM | 1:00PM  | START AT UNIVERSITY UNION | 1   | Nandi Dozier-Lewis | Wed   | 5-Oct  |
| 40 | 57 SHOPPERS    | MON-FRI  | 3:50PM  | 4:45PM  | START AT BC JUNCTION      | 1   | Chris Wells        | Wed   | 12-Oct |
| 41 | 57 SHOPPERS    | SATURDAY | 3:50PM  | 4:45PM  | START AT BC JUNCTION      | 1   | Nandi Dozier-Lewis | Sat   | 8-Oct  |
| 42 | 59 WEST        | MON-FRI  | 1:45PM  | 2:45PM  | START AT TOWN SQUARE MALL | 1   | Tyler Lenga        | Thurs | 6-Oct  |

