DILLON CONSULTING

Metrobus Market Assessment and Strategic Directions Study

FINAL REPORT

2011

Metrobus Transit

EXECUTIVE SUMMARY

STUDY PROCESS

Metrobus engaged Dillon Consulting Limited to provide a Market Assessment and Strategic Directions Study for the St. John's transit system. The need for this study was precipitated by the decline in reported transit ridership since the major service changes in 2007.

Both the accuracy of ridership reporting and the integrity of the revenue collection and handling systems were reviewed. As well, a major onboard passenger survey was conducted on March 23rd, 2010 to understand the characteristics of current transit users and to probe their reactions to the recent service changes.

Additional surveys were conducted with post secondary students, local businesses and the general public (through the Metrobus web site). Individual stakeholder meetings and focus groups with system personnel and transit users also contributed valuable input to the study.

The current services were reviewed by an experienced team of consultants and suggestions offered for system enhancements and productivity improvements. Future transit market opportunities were identified for their potential to generate ridership growth and assessed for the resulting implications on Metrobus.

Finally, the material gathered and analyzed was used to assist Metrobus management staff in updating their existing Five Year Strategic Plan for the period 2011 to 2015.

KEY FINDINGS

Concerning the integrity of the revenue collection and handling systems, the review indicated that there is no cause for concern. Duties are clear and separated, secure processes are in place and revenue is protected.

The decline in reported ridership was certainly more challenging to assess. As well as the 2007 service changes, the introduction of the very successful M-Card system in 2006 may have led to greater certainty in the reported ridership, as the methodology for reporting is different under the new system and M-Card has created a shift from cash fares to tickets and passes.

A number of external factors are also seen as contributors to ridership decline. These include population growth in areas not served by Metrobus, employment growth in sectors/locations not easily served by transit, a pattern of land use development that is not supportive of transit (low density urban sprawl) and the increased economic prosperity of the region which favours automobile travel over public transit. Greater affordability of auto ownership combined with moderate operating costs, limited road congestion and parking policies/pricing that do not favour transit are also major contributors to the decline in transit usage.

The passenger survey indicated that a significant majority of users were positive or neutral concerning the 2007 service changes; there was little dissatisfaction expressed. A detailed analysis of passenger survey results is contained in **Appendix E** of the report and these survey results provide guidance on desired service improvements and a useful benchmark for future transit assessments.

Given the higher incomes being experienced by residents in St. John's, it becomes evident that to attract ridership, strategies must be put in place to increase the level of service provided. As indicated in the various user survey's and stakeholder interviews, level of service is a key determinant

of transit use, and areas that were seen to need improvement include service frequency, travel time and the need to transfer, and improvements in off-peak service hours (evenings and weekends).

Major market opportunities exist within and adjacent to the Metrobus service area. One of the big drives will be to better capture a larger share of the post-secondary market through improvements in overall service levels to Memorial University and the College of the North Atlantic (CNA). An effectively way to drive demand and better utilize these types of service improvements is through the implementation of a Universal Transit Pass (U-Pass) for post-secondary students. The pass program is a revenue neutral initiative that would need to be ratified by the student union, but would lead to significant ridership growth and dramatically change the level of transit service that could be provided, benefiting all members of the community. Care must be taken in negotiating the financial arrangements for such a program, but based on experience in comparable settings many positive effects could result.

An expansion to region-wide transit service delivery to address the population growth outside the current service area is another market opportunity and provincial facilitation is needed to help the local municipalities achieve regional cooperation. Metrobus provides the ideal service delivery platform for regional transit in the greater St. John's area.

The aging of the population and the concentration of seniors within the City of St. John's is a third market consideration. The current pass fare for seniors is very low and not always reflective of the economic profile of this group. Low fare for seniors will impact the ability of Metrobus to fund future operations as the population continues to age and more seniors use the service. Adjusting the senior's pass rate to one that is more in line with income rather than age would help offset the reduction in revenues that will result under the present system. Affordability related issues should continue to be dealt with via the social service department.

Moving to a 'family of services' approach which more effectively addresses the travel needs of both seniors and persons with disabilities, is recommended as a cost effective strategy for these markets. A partnership between Metrobus, the Seniors Resource Centre and other groups focused on seniors should be pursued to enable travel training for seniors on conventional services and to develop targeted approaches such as Community Bus.

A partnership approach is also proposed for providing custom designed transit services for employees in industrial parks and innovative strategies such as Zone bus and Transcab are suggested to more productively serve periods of low demand (e.g. Sundays) and areas remote from the main corridors and with relatively low demand.

The existing transit terminals are highlighted as targets for improved design that will increase passenger convenience, operational efficiency and safety. Route interlining and transit priority measures at these locations would significantly benefit the system and its users by reducing physical transfers, improving travel time and promoting ridership growth. Extended time transfers should also be considered to benefit users and local businesses while increasing ridership and reducing disputes between staff and users.

Finally, one of the core recommendations in this plan is the need for increased partnerships and communication between city and Metrobus staff to help meet the common goals of the two organizations, increase the transit mode share within the greater St. John's area, improve the effectiveness of service delivery, and promote increased transit ridership. Transit cannot reach both ridership and financial performance targets alone. It must operate within a structure that recognizes the importance of land use, parking, roads, traffic and municipal investment on the ability to provide

adequate accessibility and mobility within St. John's. More timely and frequent communication at the staff level on land use planning, transit oriented design, traffic and transit priority measures, and parking supply and pricing are areas to be considered moving forward.

The material in this report will also be used to provide input to an update of the Metrobus Strategic plan for the period 2011 to 2015.

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PART A: BACKGROUND

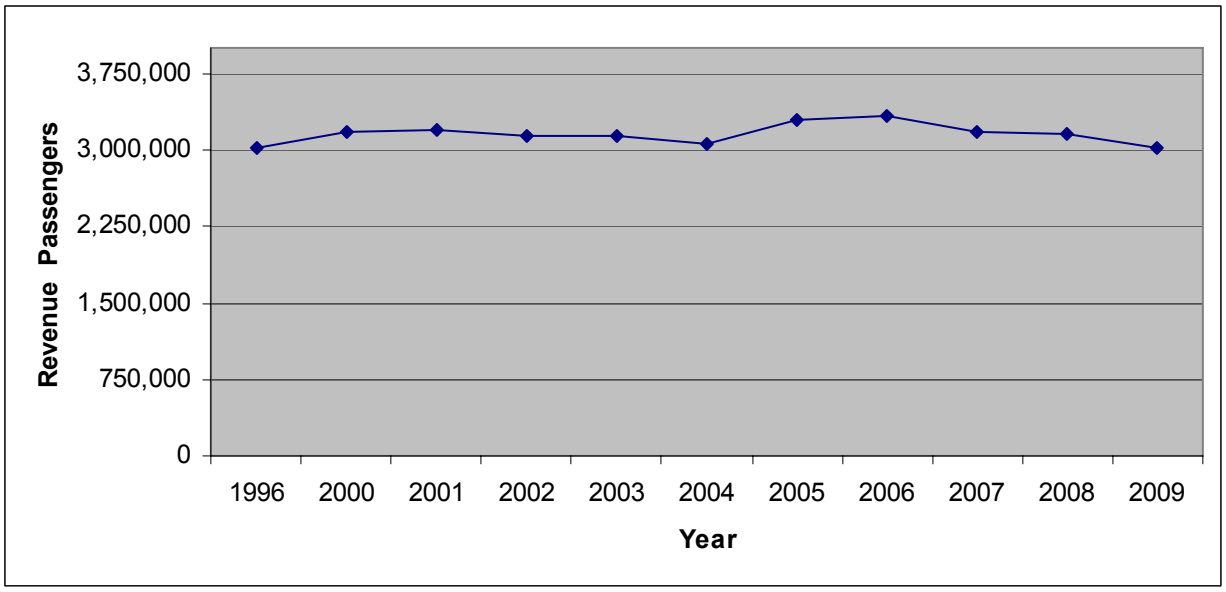
1.0 INTRODUCTION

Dillon Consulting Limited (Dillon) was retained by the St. John's Transportation Commission (Metrobus) to conduct a **Market Assessment and Strategic Directions Study** for Transit Services.

Metrobus operates conventional transit services within the City of St. John's using a fleet of 53 buses. Service is provided on 19 routes with varying service levels.

Ridership on Metrobus has fluctuated since 1996 as illustrated in **Figure 1**. There was some ridership growth experienced between 1996 and 2001. Between 2001 and 2004, there was a slight decline in ridership, before it reached its peak of just over 3.3M in 2006. Since 2006, Metrobus has been experiencing ridership decline, with reported ridership back down to 1996 levels at just over 3M. The overall decline is about 10 percent and the downward trend is a concern, particularly with the recent improvements to service in 2007. The reasons for the decline are not clear.

Figure 1 – Metrobus Annual Ridership



There have been a number of changes to how Metrobus operates. This includes changes to the routes and schedules in 2007 based on recommendations from a 5 Year Transit Service Plan. Understanding how passengers responded to the service changes (positive or negative) is one of the objectives of this study.

Rider fare payment and reporting has also changed with the introduction of the M-Card in 2006. The M-Card brings a higher level of accuracy in reporting ridership than existed with the paper pass and ticket system. Ridership was at its peak in 2006 when the M-Card was introduced. A potential reason for the decline in ridership could be related to changes in how ridership is reported.

There are also a number of factors outside of Metrobus' control that could be causing the ridership decline. The economy in St. John's is booming and the population is growing, however, most of this growth is occurring in the municipalities outside of St. John's which are not serviced by Metrobus. External forces can have a significant influence on ridership and this was explored as part of this study.

While understanding the reason for ridership decline was a key objective of this study, the study also looked at the integrity of the revenue collection system, the characteristics of current transit users through an onboard passenger survey and market opportunities that can be capitalized on to increase transit ridership.

To address these study objectives, the report is presented in the following sections:

Part A: Background and Methodology

- Consultation and Survey Activities;
- Background on Existing Metrobus Service Structure.

Part B: The Past and Present: Understanding Ridership Trends

- Review of the revenue collection process to ensure its integrity;
- Review of the ridership reporting system to ensure its accuracy;
- Identifying and assessing reasons for the decline (if valid) in reported ridership.

Part C: Market Opportunities

- Assessment of key market trends and any other opportunities that could lead to ridership growth and feed into a 5-year strategic plan update for Metrobus.

Part D: Recommendations and Strategic Directions

- Recommended improvements to service operations as a result of consultant observations (input into the Strategic Plan Update).

Part E: Summary of Recommendations and Next Steps

- Summary of priorities and next steps moving forward.

2.0 CONSULTATION ACTIVITIES

The study involved a review of the existing services and several public consultation activities to understand current issues, receive comments on the existing services and the impact of the 2007 service changes, and to provide input into the Strategic Plan update. Study recommendations are based on consultation with the public, municipal staff, Commission members, transit users, some drivers and system personnel, and major stakeholders; consideration of best practices from other systems, and technical assessments by the project team.

Elements of the review of existing services and public consultation are presented below.

2.1 Transit Website Feedback and Survey

An online community survey was available for both transit users and non-users. The purpose of the survey was to understand public opinion of transit services.

The survey was placed on the Metrobus website in March 2010 and comments were collected until Wednesday June 23rd, 2010. Overall, 373 completed responses were received, of which 325 or 87 percent were from residents of St. John's and Mount Pearl. A sample of the survey form and a summary of the results are included in **Appendix A**.

2.2 Online Post-Secondary Student Surveys

An online post-secondary student survey was developed and notification of survey availability was e-mailed to students at the College of the North Atlantic (CNA) on Monday April 12th 2010. The purpose of the survey is to collect information on student ridership, travel patterns, and their attitudes and opinions about Metrobus. The survey was available until Monday June 21st, 2010. A total of 49 completed surveys were collected. The survey questions and results are summarized in **Appendix B**.

A similar survey catered to students at the Memorial University of Newfoundland (Memorial University) was tested in person on a small group of 30 students during a site visit in May 2010. This survey was then placed online and notification of the survey availability was e-mailed to students. This survey was available from Monday October 11th 2010 to Friday October 29th 2010. A total of 1,302 completed surveys were collected. The survey questions and results are summarized in **Appendix C.**

2.3 Online Employer Survey

An online community survey for St. John's employers was developed and distributed through an email notification to members of the Downtown Development Commission and the Board of Trade. The survey was available for a span of 6 weeks in May and June 2010. The purpose of the survey was to collect information on the characteristics of St. John's businesses, their relationship and attitudes towards transit, and their openness to partnering with Metrobus in enhancing service for their employees.

A total of 39 completed surveys were collected. The survey questions and results are summarized in **Appendix D**.

2.4 On-Board Passenger Survey

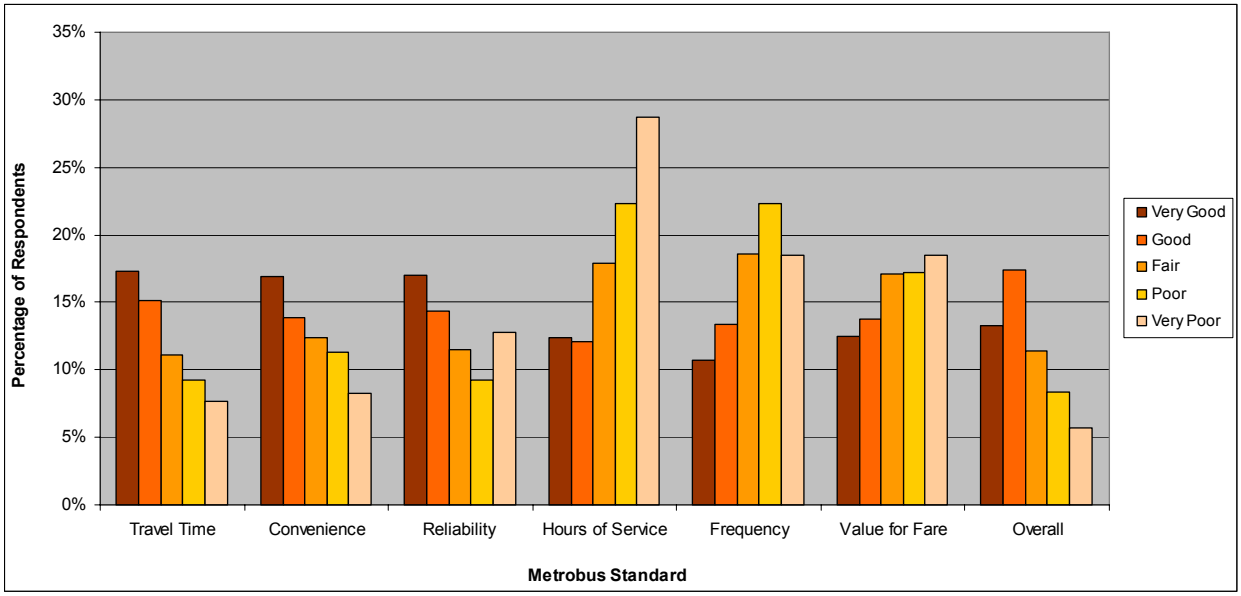
An on-board passenger survey was conducted during regular service hours on Tuesday March 23rd, 2010 for the conventional transit service. Survey questions probed trip patterns, trip purpose, walking distance to and from bus stops, transfer patterns, demographic characteristics, and frequency of use, as well as rider opinions on the 2007 service changes. Transit users were also invited to provide written comments on the survey card. The survey card is provided in **Appendix E**.

Excellent cooperation was received from the drivers in distributing and collecting the surveys. Dillon and Metrobus staff monitored the survey and assisted in handing out and collecting surveys. Drivers were encouraged to promote the survey to passengers as much as possible.

A total of 1,001 valid surveys were collected, meeting a target of 900 completed surveys. On a typical weekday there are an estimated 6,000 people who use Metrobus yielding a survey response rate of 17 percent. Dillon staff verified the survey card responses for completion and accuracy. Surveys were collected for each route in proportion to the ridership on the routes.

As part of the survey, passengers were asked their opinion of Metrobus' performance in some common service categories. **Figure 2** illustrates the results.

Figure 2 – Onboard Passenger Survey Opinions



Overall Metrobus received a positive rating. Passengers were most satisfied with travel time, convenience, and reliability. Hours of service received the worst reviews, with 29 percent of passengers rating it "very poor". Frequency and 'value for fare' were also areas of user concern.

In addition to rating Metrobus performance, passengers were given the option to provide written comments. **Table 1** illustrates the positive passenger comments while **Table 2** illustrates the areas in which users feel Metrobus can improve. Some users made more than one comment and comments were grouped into the several categories.

Table 1 – On-board Passenger Survey Comments (Positive)

Comment	Count	Percentage
Drivers are great	65	44%
Great service	45	31%
Convenience	18	12%
Frequency and routes	7	5%
Like the fare price/options	5	3%
On Time	3	2%
Other	4	3%
Total	***147***	***100%***

Overall, the majority of positive comments referred to the service, drivers and convenience. This illustrates the importance of level of transit service and customer service to passengers.

Table 2 – On-board Passenger Survey Comments (Areas for Improvement)

Comment	Count	Percentage
Better frequency	87	18%
Extended Sunday service	57	12%
Expanded routes	36	7%
Service reliability (not punctual)	34	7%
Extended service	32	7%
Extended service weekday nights	30	6%
Extended Saturday service	28	6%
Aggressive/impolite drivers	27	6%
Fares are too high	19	4%
Better buses	16	3%
Less transfers	16	3%
Better communication of information	13	3%
Better Sunday frequency	12	2%
More waiting areas/shelters	11	2%
Improve route structure	11	2%
Travel times are too long	11	2%
Extended service weekday mornings	10	2%
Other	32	7%
Total	***482***	***100%***

The most frequent comments on service improvements were the desire to increase service frequencies and improve Sunday service. This further reinforces the importance of level of service to passengers, much more so than factors such as bus fares.

The remaining survey results are presented in **Appendix E** of this report.

2.5 Stakeholder Interviews

Stakeholder consultation was conducted during each of the three site visits to St. John's. The format consisted of focused, one-on-one discussions with individuals or small groups comprising representatives of various stakeholders in St. John's. These discussions covered the existing operation of Metrobus, suggestions for improvement and the identification of issues and opportunities to be addressed in the study. Representatives from the following stakeholders were consulted during the study:

1. City of St. John's staff (City Solicitor and Chief Commissioner, planning and engineering);
2. Metrobus staff;
3. St. John's Transportation Commission;
4. Memorial University of Newfoundland, Administration and Student Union;
5. City of St. John's Economic Development;
6. Village Shopping Centre Property Manager;
7. Avalon Mall Property Manager;
8. Mayor's Advisory Committee on Seniors;
9. Seniors Resource Centre of Newfoundland & Labrador;
10. St. John's Regional Fire Department;
11. Downtown Development Commission;
12. Canadian Petroleum Producers;
13. St. John's Board of Trade;
14. Province of Newfoundland and Labrador, Department of Works, Services and Transportation; and
15. Province of Newfoundland and Labrador, Department of Municipal Affairs.

2.6 Focus Groups

Focus groups were used to gain specific input for the Strategic Plan update as well as developing a better understanding of existing ridership patterns. The following focus groups were conducted as part of this study:

Focus Group 1: St. John's Transportation Commission Office Staff (March 22nd, 2010)

Purpose: understanding existing issues and opportunities to attract more users to the transit service and provide input into the Strategic Plan Update

Focus Group 2: St. John's Transportation Commission (March 22nd, 2010)

Purpose: Discuss study terms of reference and obtain initial feedback

Focus Group 3: Metrobus Management Team (March 24th, 2010)

Purpose: Review progress on previous strategic plan and discuss issues and opportunities

Focus Group 4: St. John's Transportation Commission (May 10th, 2010)

Purpose: Provide an update on the results of the passenger survey and progress of the study

Focus Group 5: Metrobus Users (May 10th, 2010)

Purpose: Members of the general public that used the transit service and experienced the results of the service change that occurred in 2007 were invited to participate. The purpose of the focus group was to gain a better understanding of the impacts of the service change. There were 11 people that attended the session.

2.7 Public Open House

A public open house was held on Monday, September 13th, 2010 at City Hall between 7:00pm and 9:00pm. Approximately 40 people were in attendance and expressed their views regarding the Metrobus service and future directions. Consultants and Metrobus representatives listened to input and answered questions following the deputations. The following issues were raised by the public:

- **Drivers** – Metrobus drivers generally provide good customer service, however, there are some drivers that need to improve customer service.
- **Seniors' Fare** – Would like seniors to get a concession on the cash fare similar to the M-Card (10-ride and monthly passes). This is particularly for senior's living below the poverty line.
- **Downtown Parking** – for Metrobus to be effective, the City needs to charge people more money to park downtown.
- **Communications** – would like to see better communication of routes and schedules, which can be confusing. A system map would be helpful. Duplicate runs can be confusing. Would like to see transit stops printed on the maps.
- **Shelters** – more shelters are required, particularly during inclement weather conditions. There is a need for heated shelters and transit stations (i.e. downtown, Avalon Mall, Memorial University).
- **Transfers** – It is difficult to use Metrobus when making multiple trips in a single day. Would like to see a 90 minute transfer window, which would allow users to make a few short trips on a single fare, particularly in the off-peak periods.
- **Schedule** – Some passengers have experienced buses running early and thus missed connections. Often the early bus is trying to make connections at the terminals, however more emphasis should be placed on on-time performance.
- **Airport Service** – There should be a bus service to the airport.
- **Google Transit** – This service provided by Metrobus is very useful.
- **Website** – The page should be reconfigured so Google Transit, time track and service modification be right at the top – easier to find.

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3.0 SYSTEM CHARACTERISTICS

Metrobus operates conventional transit services on behalf of the City of St. John's, including contracted transit services to Mount Pearl. There are 19 routes provided and the existing system map is illustrated in **Figure 3**.

3.1 Route Structure and Service Definition

The road network and therefore the transit route structure are heavily influenced by the local topography. A network of base and local fixed routes forms the transit system. Base routes are operated as much as possible, on the main arterial roads in the urban transit service area. They are oriented to directly serve the main travel destinations and major corridors. Local routes provide a supplementary network, providing broader more localized service throughout the city. Primary local routes provide more frequent service and have longer service hours, whereas secondary local routes provide service to more outlying areas with lower frequencies and less hours of service. There are also five routes, categorized as "special routes", which provide specialized service (limited hours and limited areas).

The major transit nodes include the Village Shopping Centre, Downtown (three transfer points), Avalon Mall, Memorial University (Main Campus), and Torbay Road Mall. **Table 3** provides summaries of routes servicing each of the major transit nodes. Routes run between these nodes and also connect outlying neighbourhoods to specific nodes. Routes to/from Mount Pearl, Kilbride, and Goulds connect to the Village Shopping Centre. The routes generally run on a 15 minute frequency (on the hour, 15 minutes past, 30 minutes past, and 45 minutes past the hour) but transfers are not timed at major transfer locations as buses do not have a layover time.

Table 3 – Transit Nodes

Transit Node	Routes
Village Shopping Centre	1,2,3,6,12,13,18,19,21,22, 25
Downtown	2,3,6,10,11,17
Avalon Mall	2,5,10,11,12,15,16,19,23
Memorial University (Main Campus)	1,2,5,10,13,14,15,16,17, 23
Torbay Road Mall	2,3,5,16,17

St. John's does not have a major transit terminal in the Downtown but there are 3 transfer points. The busiest one is at St. John's Convention Centre (Water Street and Waldegrave Street) where five routes converge. There are also transfer points at Military Road & Forest Road (four routes) and Freshwater Road & Lemarchant Road (four routes).

There are two major transfer points at the Memorial University Main Campus. One is at the University Centre (nine routes) and another is at the Health Sciences Centre (five routes). There are also four routes that converge at the CNA and four routes that converge at the Marine Institute.

3.2 Hours and Service Frequency

Metrobus provides service seven days a week. It should be noted that not all routes are operated on weekends, with certain routes not in service on Sundays and others not in service on both Saturdays and Sundays. Holiday service is provided except on Christmas Day, Boxing Day and New Year's Day. The hours of service and frequency standards are outlined in **Table 4** and **Table 5**.

Table 4 – Service Hours

Days	Base Route	Primary Local Route	Secondary Local Route
Weekdays	6:30am – 12:30am	6:30am – 11:30pm	6:30am – 6:30pm
Saturday	7:30am – 12:30am	9:00am – 11:30pm	6:30am – 6:30pm
Sunday	8:30am – 8:30pm on all routes that are operating		

Table 5 – Service Frequency

Time of Day	Base Route	Primary Local Route	Secondary Local Route
Peak Periods	15 minutes	30 minutes	60 minutes
Off-Peak Periods	30 minutes	30 minutes	60 minutes
Saturdays	30 minutes	30 minutes	60 minutes
Evenings/Sundays	60 minutes	60 minutes	60 minutes

Table 6 illustrates the service hours and frequency of Metrobus by route and categorizes all routes into base routes, primary or secondary local routes, and special routes. Ridership levels tend to generally support these categories. Routes 1, 2 and 3 have the highest weekday ridership. Route 10, a primary local route, rivals the base routes in terms of weekday ridership even though service frequencies on Route 10 are lower than the base routes.

Figure 3 – Metrobus System Map

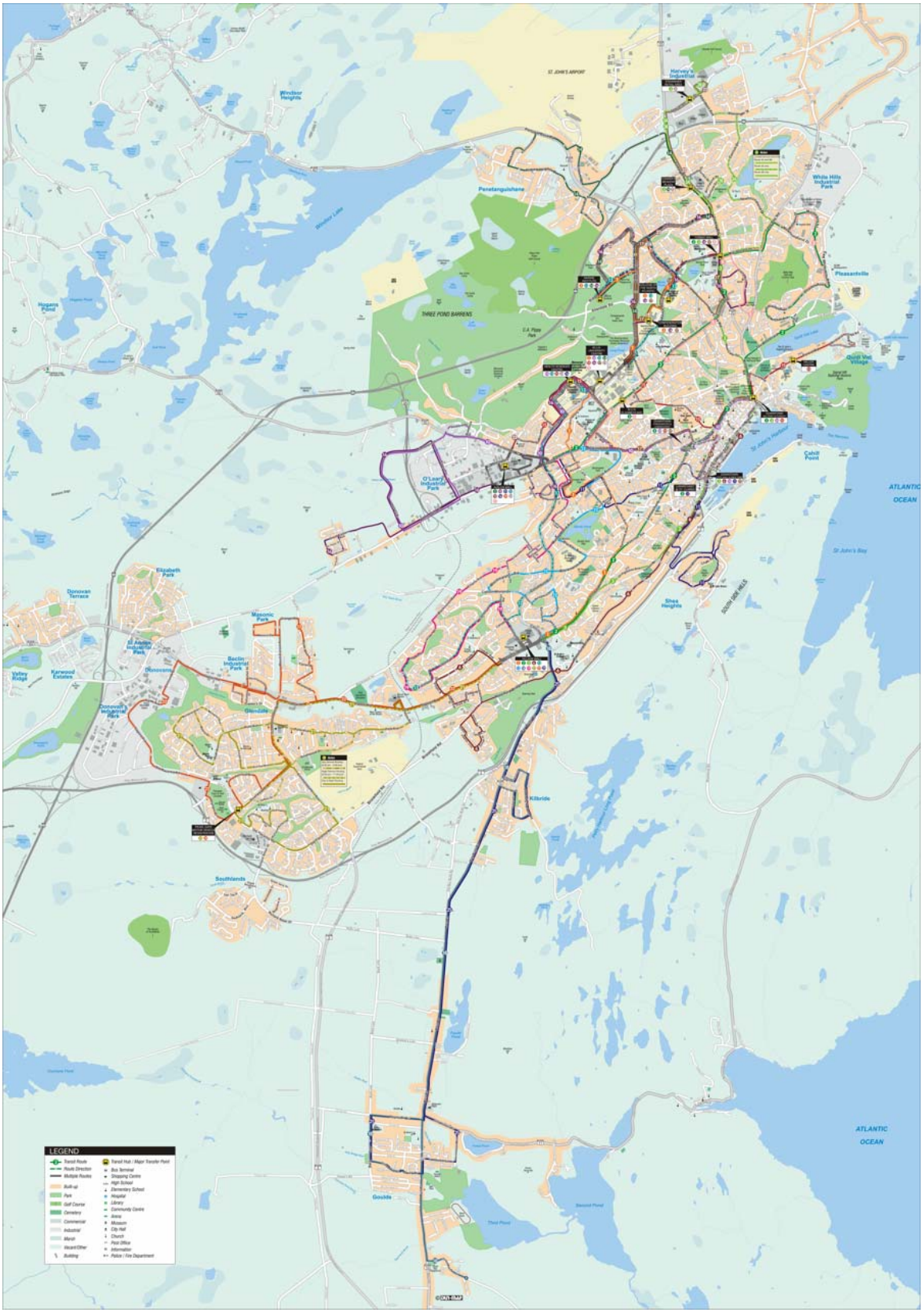


Table 6 – Existing Routes within St. John's

Route	Service	Start	Stop	Trips per Day	Frequency (minutes)				Major Transfer Points	Average Daily Weekday Ridership[1]
					AM	Mid-day	PM	Evening		
Base Routes										
1	Monday - Friday	6:30 AM	12:30 AM	40	15-30	15-30	15-30	60	Village Shopping Centre, Memorial University	1,322
	Saturday	7:30 AM	12:30 AM	17	60	60	60	60		
	Sunday	8:30 AM	8:30 PM	12	60	60	60	60		
2	Monday - Friday	6:30 AM	12:30 AM	42	15-30	30	15-30	60	Village Shopping Centre, Downtown, Memorial University, Torbay Road Mall, Avalon Mall	2,165
	Saturday	7:30 AM	12:30 AM	28	60	60	60	60		
	Sunday	8:30 AM	8:30 PM	13	60	60	60	30-60		
3	Monday - Friday	6:30 AM	12:30 AM	39	15-30	30	15-30	30	Village Shopping Centre, Downtown, Torbay Road Mall	1,209
	Saturday	7:30 AM	12:30 AM	31	30	30	30	30-60		
	Sunday	8:30 AM	8:30 PM	17	45	45	45	45		

[1] Source: Metrobus Weekday Average Daily Ridership: February 2010

Route	Service	Start	Stop	Trips per Day	Frequency (minutes)				Major Transfer Points	Average Daily Weekday Ridership[1]
					AM	Mid-day	PM	Evening		
5	Monday - Friday	7:00 PM	11:00 PM	4	N/A	N/A	N/A	60	Avalon Mall, Memorial University, Torbay Road Mall	N/A[2]
	Saturday	6:00 PM	11:00 PM	5	N/A	N/A	N/A	60		
	Sunday	10:30 AM	5:00 PM	7	60	60	60	N/A		
Primary Local Routes										
10	Monday - Friday	6:10 AM	12:15 PM	33	30	30	30	30-60	Avalon Mall, Downtown, Memorial University	1,690
	Saturday	6:50 AM	12:20 AM	30	30-60	30	30	30		
	Sunday	8:20 AM	8:40 PM	17	45	45	45	45		
12	Monday - Friday	7:00 AM	12:00 AM	30	30	30	30	60	Avalon Mall, Village Shopping Centre	651
	Saturday	8:30 AM	11:30 PM	15	60	60	60	60		
	Sunday	8:30 AM	8:30 PM	12	60	60	60	60		

[2] Route 5 provides evening service for Route 2. Ridership is included with Route 2.

Route	Service	Start	Stop	Trips per Day	Frequency (minutes)				Major Transfer Points	Average Daily Weekday Ridership[3]
19	Monday-Friday	6:30 AM	12:00 AM	31	30	30	30	60	Village Shopping Centre, Avalon Mall	663
	Saturday	7:30 AM	12:00 AM	23	30	30	60	60		
	Sunday	8:30 AM	8:30 PM	12	60	60	60	60		
Secondary Local Routes										
6	Monday - Friday	6:30 AM	6:30 PM	12	60	60	60	N/A	Avalon Mall, Downtown	216
	Saturday	8:10 AM	5:45 PM	11	60	60	60	N/A		
11	Monday - Friday	7:00 AM	6:30 PM	12	60	60	60	N/A	Avalon Mall, Downtown	216
	Saturday	9:00 AM	6:30 PM	10	60	60	60	N/A		
14	Monday - Friday	6:45 AM	6:55 PM	13	60	60	60	N/A	Memorial University	248
15	Monday - Friday	6:30 AM	11:30 PM	30	30	30	30	60	Avalon Mall, Memorial University, Downtown	874
	Saturday	8:30 AM	11:30 PM	15	60	60	60	60		
	Sunday	8:30 AM	8:30 PM	12	60	60	60	60		

[3] Source: Metrobus Weekday Average Daily Ridership: February 2010

Route	Service	Start	Stop	Trips per Day	Frequency (minutes)				Major Transfer Points	Average Daily Weekday Ridership[3]
16	Monday - Friday	6:45 AM	6:15 PM	13	60	60	60	N/A	Avalon Mall, Memorial University, Torbay Road Mall	387
18	Monday-Friday	6:30 AM	12:30 AM	18	60	60	60	60	Village Shopping Centre	436
	Saturday	8:30 AM	12:30 AM	16	60	60	60	60		
	Sunday	8:30 AM	8:30 PM	12	60	60	60	60		
21 (Mount Pearl Route)	Monday-Friday	6:30 AM	11:30 PM	17	60	60	60	60	Village Shopping Centre	389
	Saturday	9:20 AM	11:30 PM	14	60	60	60	60		
	Sunday	10:30 AM	6:30 PM	8	60	60	60	N/A		
Special Routes										
13 (Morning Peak Route)	Monday - Friday	7:30 AM	9:00 AM	4	15-30	N/A	N/A	N/A	Village Shopping Centre, Memorial University	85
17 (Express Route)	Monday – Friday	7:25 AM	5:00 PM	6	30	N/A	30-35	N/A	Downtown, Memorial University, Torbay Road Mall	65

Route	Service	Start	Stop	Trips per Day	Frequency (minutes)				Major Transfer Points	Average Daily Weekday Ridership[3]
22 (Mount Pearl Route)	Monday-Friday	6:30 AM	6:00 PM	6	60	N/A	60	N/A	Village Shopping Centre	106
23 (Off-Peak Route)	Monday-Friday	7:00 PM	11:30 PM	5	N/A	N/A	N/A	60	Avalon Mall, Memorial University	46
	Saturday	9:30 AM	6:30 PM	9	60	60	60	N/A		
25 (New Route)	Monday-Friday	7:00 AM	6:00 PM	4	1 run	N/A	60	N/A	Village Shopping Centre	39

PART B: THE PAST AND PRESENT - UNDERSTANDING RIDERSHIP TRENDS

4.0 REPORTING

It is occasionally the case that reported ridership decline is not a result of a decline in actual ridership but a result of errors or omissions in reporting of ridership and fares. This includes theft, fraud, or integrity of statistics. This section of the report will deal with these questions.

4.1 Integrity of Cash Handling

All transit systems experience the potential for cash fare handling security or integrity issues on board the bus, in the garage while the bus is out of service, in the cash handling area, or in the reconciliation with the bank deposits. Each of these activities was audited by two team members over four days.

Overall, it was determined that the integrity of cash handling on board buses was not a concern, in terms of equipment, process and driver behaviour. The garage security review consisted of how the vehicles were parked, who had access to the fare box keys and the cash management office. In all instances, the integrity of the cash transfer from the bus to the vault and while in the cash management office was sound. . The integrity of the cash handling at this phase was also sound and not a cause of the ridership/revenue decline.

Reconciliation between the accounting in the cash office and the bank deposit was also reviewed and found to be handled under appropriate protocols to ensure the security of the transfer.

In conclusion, while there have been some instances in the transit industry where the security of the cash handling process has been compromised and has resulted in an accounting shortage, Metrobus has none of these weaknesses. All aspects of cash management are state of the current practices and the decline in cash revenue is not due to any leakage in the system.

4.2 M-Card

The inspection of the M-Card system consisted of two components. The first is the security of the sales system and the second is accuracy of the M-Card's reporting system.

It has been known that cards can be forged or that vendors will fraudulently sell cards. The audit team reviewed and visited several vendors. All vendors are reputable business establishments (i.e. Shoppers Drug Mart), unlike in some municipalities where small local vendors often make sales. All sales are reported to Metrobus and no flaws in the process were found.

The use of the M-Card was found to be very effective. There was one case where the audit team observed a diligent driver challenge a passenger for not having an up-to-date M-Card and asked the passenger to leave the bus. In interviewing the passenger, he informed the audit team that he in fact had a valid and up-to-date card and was denied a legitimate trip.

When M-Cards are purchased or re-loaded at an established vendor, the card is automatically updated. However, if M-Cards are updated on-line, there is a time lag up to 24 hours between when a customer updates their card and when it is registered with Metrobus and logged onto the fare box system. This was determined to be the cause of the issue. The lag-time reported is unavoidable given the existing technology and is communicated to passengers on the Metrobus website (during the

purchase). With the planned fare box system upgrades by Metrobus, all efforts should be made to reduce this lag time as technology permits. As more people use the M-Card, this will become less of an issue as customers get used to the update process. However, improved education regarding the fare media including the update process should be pursued for new customers. This could include sending out an automatic email reminder when there are only a few trips or days left on the card.

The second portion of the M-Card review was the accuracy of the reporting system. The reporting system as designed by the manufacturer has not been tampered with and the downloading process and statistical reporting is accurate. No inconsistencies were found. The M-Card is sold at different denominations, and the reader can identify the fare category (i.e. adult, senior, student) and whether the fare is a trip or a transfer. This is an improvement over the previous paper pass system and existing cash system where a driver is asked to code in passenger category, if not an adult. This requires a judgment call by the driver, which is not always accurate and is often not made.

From a reporting perspective, the introduction and operation of the M-Card was not found to be potential contributor to the ridership decline.

4.3 Accuracy of Statistics

Metrobus has supplied the Canadian Urban Transit Association (CUTA) with annual ridership figures as shown in **Figure 1** in **Part A** of this report. Ridership in St John's has gone up and down in the period reported since 1996. **Figure 4** illustrates service utilization. Both **Figures 1** and **4** illustrate a peak ridership period in 2005 and 2006. In those years and the year that followed, several events occurred; a fare increase, a change in fare media, and a restructuring of routes and services.

Figure 4 – Metrobus Regular Service Passengers / Capita Trends

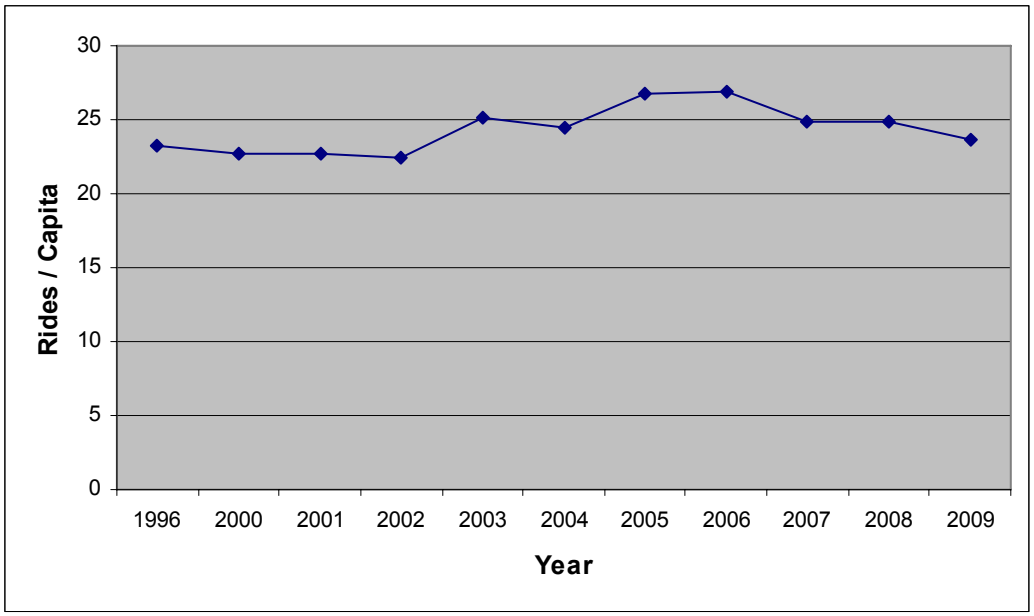
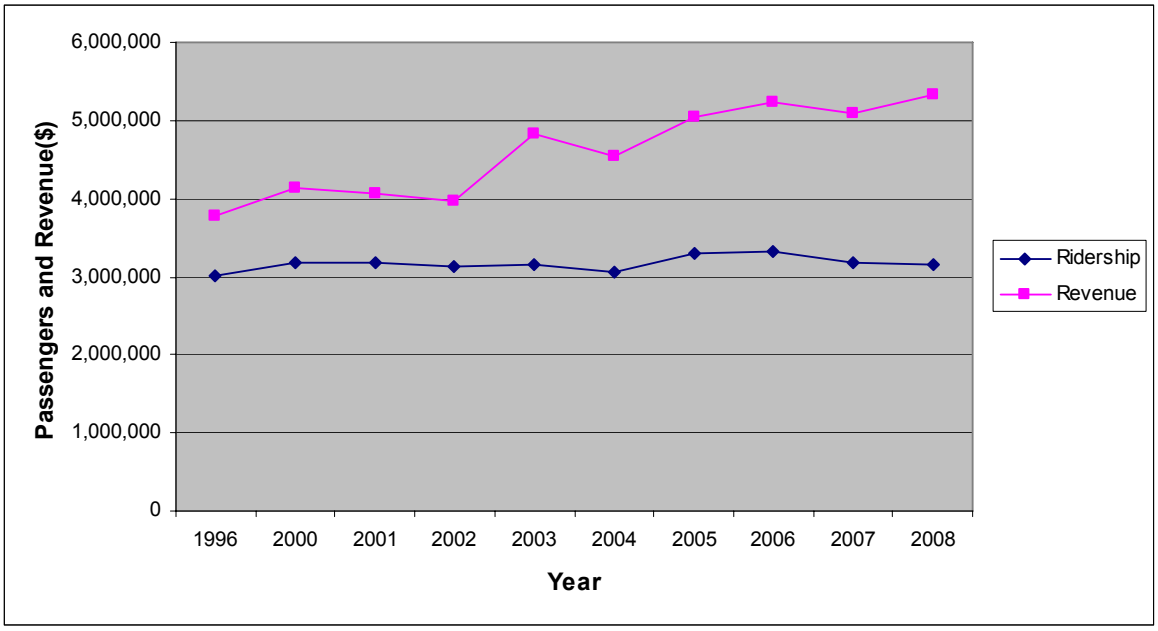


Figure 5 compares revenue and ridership over the same period. This shows a realistic trend. It indicates that the fare changes were effective in improving financial performance while not significantly changing overall passenger loading. This, plus the positive passenger survey response, suggests that the accuracy of the statistics is not a reason for ridership decline.

Figure 5 – Revenue and Ridership Comparison



The historic and current methodologies of reporting ridership were reviewed and it was found that they are in keeping with industry norms and definitions. The only weakness is in the reporting of transfers. Currently, with the M-Card, transfer reporting is very precise. However, historically transfer reporting may have not been as precise due to technology or driver behavior. The route structure and municipal financial support model of Metrobus involves artificial transfer points. For example, Mount Pearl will only subsidize trips between Mount Pearl and Village Shopping Centre. This means that Routes 21 and 22 stop at Village Shopping Centre and passengers are required to transfer to other routes to reach destinations in St. John's. This deters ridership and in the past may have contributed to double counting of linked trips. While the M-Card provides a better account of transfers than the old paper pass system, the method of reporting over the last two years has remained consistent in order to accurately compare current ridership (with the M-Card) and historical ridership (under the paper pass system).

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5.0 INTERNAL FACTORS

A number of internal factors were assessed to determine their influence on the reported ridership decline. Internal factors can be described as those that are largely within the control of Metrobus and that influence passengers' ability or desire to use the service.

While there are areas within the existing service that could be improved to influence ridership growth, this section of the report only addresses areas that may have led to a decline. For example, **Section 5.1.4** identifies design issues with the transit terminals at Avalon Mall and Village Shopping Centre, particularly for an aging population. Since these terminals have functioned in this way for a number of years, they are not considered contributing causes of the reported ridership decline.

The two major internal changes that occurred in the system around the time of the ridership decline are:

1. 2007 Service Changes; and
2. Introduction of the M-Card.

5.1 2007 Service Changes

In 2007, Metrobus implemented a number of changes to the service based on recommendations from a Metrobus' 5-year Transit Service Plan. While routing, service level and schedule adjustments may be needed to reflect change in land use, activity generators, demographics, travel patterns, and budget availability, transit users generally do not like to experience changes in service. Passengers' commuting habits and schedule of activities often depend on the transit service hours and frequency of operation on specific routes. When these factors are changed, passengers are forced to change their daily habits. Overall, the long term effects of service changes may be positive, but in the short term passengers tend to be opposed to them. The specific service changes that occurred in 2007 are outlined in **Section 5.1.4**.

Three years have passed since the service was modified. This time period is generally sufficient for existing passengers to get used to service changes and new passengers to understand the service change and try the service where applicable. However, reported ridership has continued to decline.

One of the key questions of this study was whether or not the ridership decline was a direct result of the 2007 service change. It is important to note that this ridership decline began between 2006 and 2007, before the service change. Nonetheless, the service change was put in place to help increase ridership, and this result apparently was not achieved.

The study team probed this question in more detail through a number of different methods. This included:

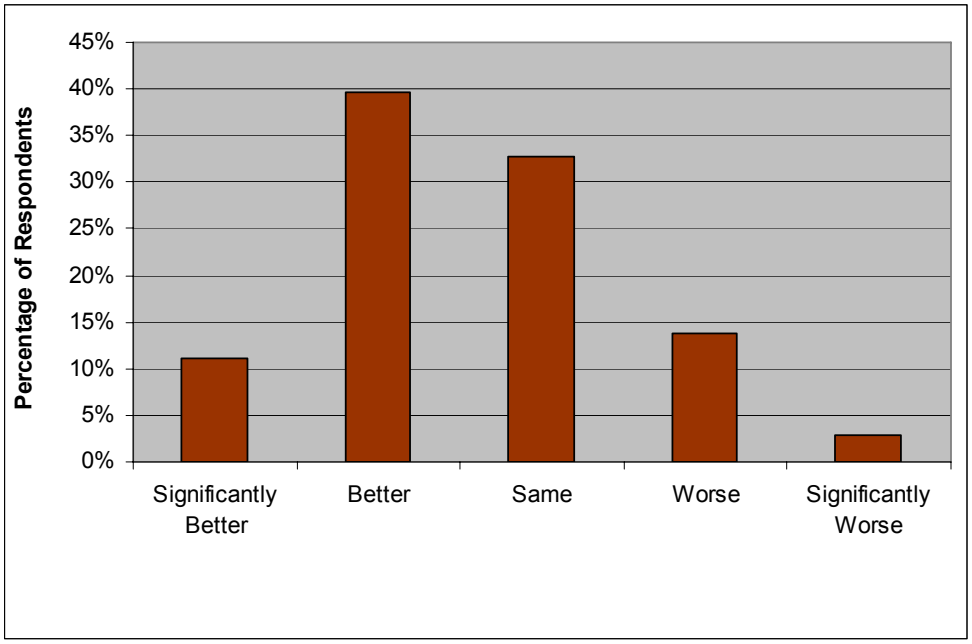
1. An on-board passenger survey;
2. An online community survey; and
3. A focus group of passengers that had used the service before and after the service change.

5.1.1 On-board Passenger Survey

The onboard passenger survey, queried passengers on their opinions about the 2007 service changes and their use of Metrobus services since the changes. Of the 960 responses received for that

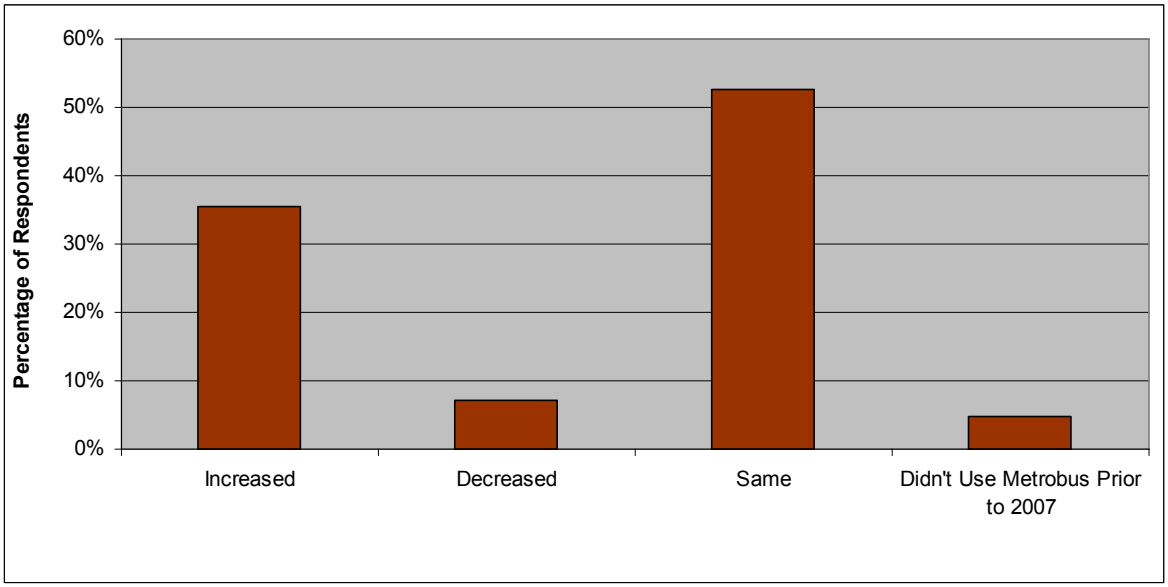
question, 647 (or 67 percent) indicated that they had used the service before 2007. The results are outlined in **Figure 6** and **Figure 7**.

Figure 6 – Passenger Opinions of Metrobus Services Since 2007



A combined 51 percent of respondents indicated that the service was "better" or "significantly better" after the 2007 changes, while only a combined 17 percent indicated "worse" or "significantly worse".

Figure 7 – Change in Use Since 2007



Also, **Figure 7** shows that respondents are generally using Metrobus services more often since the 2007 service changes. Thirty-five (35) percent of respondents indicated that their use of Metrobus

services has increased, while only 7 percent indicated a decrease in transit use since 2007. The majority of respondents indicated that their use of Metrobus had remained the same.

The results of the on-board passenger survey do not support any correlation between the 2007 service changes and the reported ridership decline. Generally, transit passengers have been happy with the service changes that were made, which have either increased their use of the system or caused it to remain the same.

There is a caveat that should be noted in this assessment. The on-board passenger survey only probed existing riders. Passengers that were adversely affected by the service changes may no longer be using Metrobus and therefore were not surveyed. While this is a possibility, there were few passenger complaints that occurred after the service changes were made that suggest that a significant number of customers stopped using the transit service.

It should also be noted that 43 percent of respondents were age 24 or below (mainly students) while 4 percent of respondents were 65 and above (seniors). Seniors and students who use transit tend to be more dependent on transit and their frequency of use is less likely to be affected by service changes.

5.1.2 Online Community Survey

The online community survey on the Metrobus' website, which was available for former passengers as well as current passengers, showed that respondents were generally aware of the service changes but were indifferent to the changes and they have continued to use Metrobus with the same frequency as before. Two-hundred and fifteen (215) of the 373 respondents indicated that they used Metrobus services before 2007 and that they were familiar with the service changes. **Figure 8** and **Figure 9** illustrate the experiences of respondents and usage of the system since the service changes.

Figure 8 – Passenger Experiences with Metrobus Since the 2007 Service Change

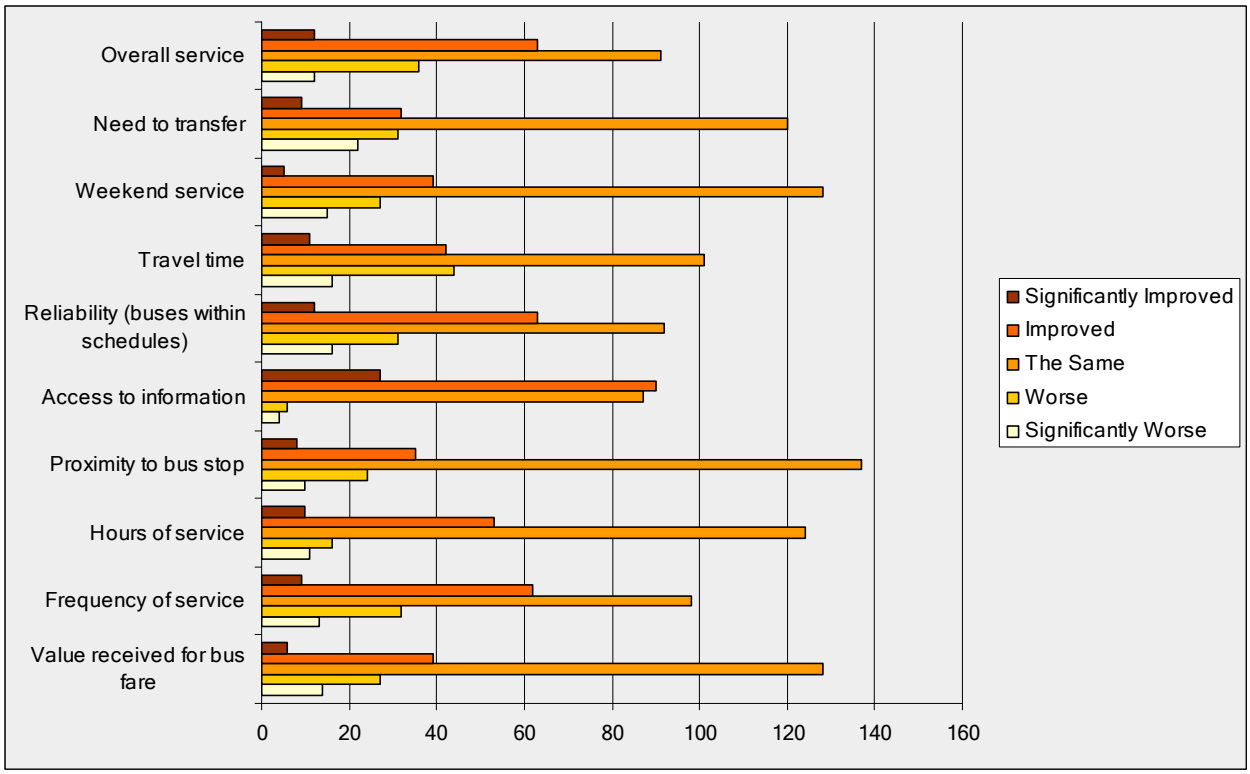
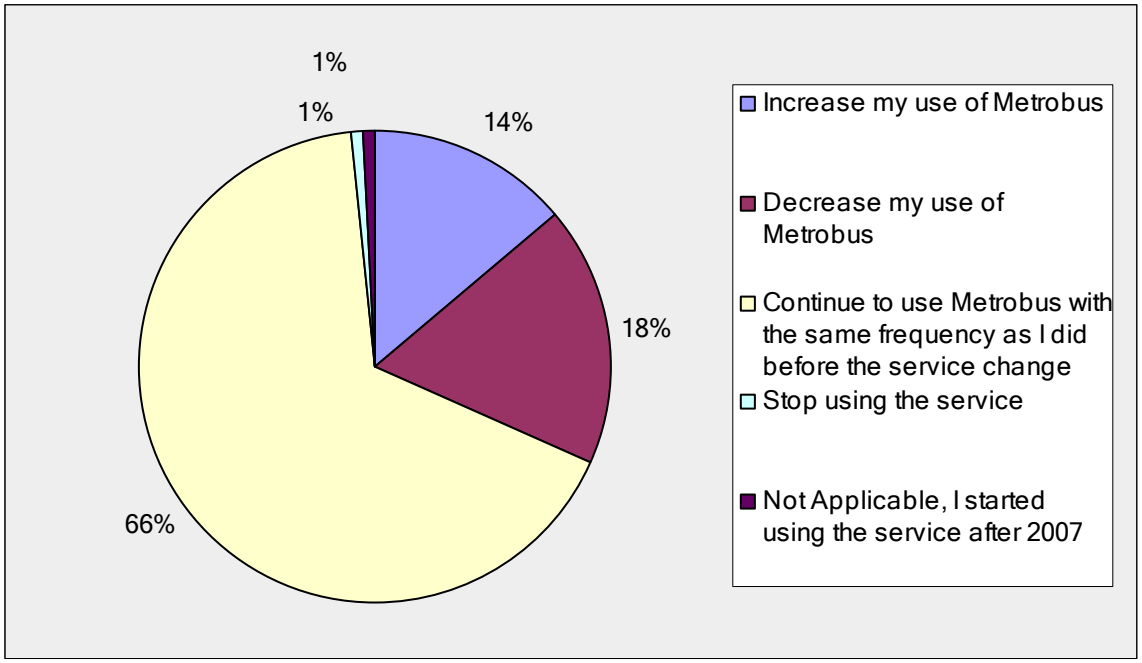


Figure 9 – Metrobus Use Since the 2007 Service Changes



Non-users (have not used Metrobus in the past 3 months) made up 8.8 percent of respondents. These individuals cited long travel times, inconvenient schedules and preferring to drive as their main reasons for not using Metrobus services. While this is not a statistically reliable survey, the information is valuable in providing an overall perspective on the transit service, particularly from the view of non-users.

5.1.3 User Focus Group

Participants at a user focus group where asked about their thoughts on the overall system change that occurred in 2007. Based on the 11 persons in attendance, four users felt overall service was improved, five felt it was about the same, and no one indicated it was worse. General comments received regarding the service change included:

- One person felt travel times were greatly increased;
- Some felt changes to Routes 3 and 10 were inconvenient;
- Several people noted that you could now get to places in St John's quicker even if there are more transfers;
- Several people felt there was better on time performance and good service at transfer points;
- Hours of service were considered better for St John's;
- Concern about decrease in number of shelters (vandalism); and
- Signage was better before, hard to discern new stop signs.

The results of the focus group indicated some concerns over the system changes, particularly travel times on certain routes. However, the majority of participants indicated a satisfaction with the system change, with many indicating that further service improvements are still required.

5.1.4 Assessment of 2007 Service Recommendations

A number of recommendations were made in the 2007 service review. A detailed assessment of these recommendations was completed to better understand their potential impact on ridership and strategies moving forward. Overall, eight strategic recommendations were made:

1. Change in Service Structure

Recommendation: The report recommended a change in the routing structuring, including service frequency, scheduling, and hours of service. This included moving to a two-tiered network of base routes and local routes. The base routes form the primary links between key destination points within the City and the secondary network of local routes provide broader coverage into local areas. The base routes generally have higher service frequencies and hours of service reflecting the higher levels of transit use along each corridor. Special express routes designed to provide specific service links supplement the route network. The recommended route structure is outlined below:

- **Base Routes:** 1, 2, and 3
- **Local Routes:** 10, 11, 12, 14, 15, 16, 18, and 19
- **Express Route:** 17

Outcome: Overall, most of the system changes in the report were adopted. Route 17 remained as a Base Route and the proposed service changes in Mount Pearl were not accepted by the Town Council. The recommendation to improve Sunday service was not fully implemented, as some routes still run on an hourly frequency when the service standards document states a maximum 30 minute frequency. This change in service was further assessed as a potential factor in the overall ridership decline.

Ridership patterns seem to support this structure of base and local routes. Routes 1, 2, and 3 generally experience higher weekday ridership levels than the local routes. Route 10 is the only local route that has ridership levels that rival the base routes and in-fact it experiences the second highest average weekday ridership of all routes. Route 10 connects the Downtown with the Memorial University, Avalon Mall, and the O'Leary Industrial Park. Route 10 does not have 15 minute peak period headway as provided on the base routes, and consideration should be made to designating this route as a base route.

Some routes provide overlap in coverage. This was apparent in the onboard passenger survey, where 3-5 percent of respondents indicated having the option of transferring to multiple routes to reach the same destination. For example, travelling between the Downtown (City Hall) and Village Shopping Centre can be done on Route 6 or 3. One respondent identified that to get from Quidi Vidi Village to Goulds, he takes Route 15 from Quidi Vidi Village to the Downtown and Route 18 from Village Shopping Centre to Goulds. However, in between he can use either Route 3 or Route 6 to get from the Downtown to Village Shopping Centre. While this overlap may cause some inefficiency in the system, it would not generally lead to a ridership decline as passengers are provided with alternative routes to access their destination. In a number of areas, this occurs due to the structure of the road network.

As a general observation, change in service structure can initially lead to a ridership decline, particularly as passengers get used to the new system. However, this ridership typically comes back and new users are attracted to the system if the service improvements are positive from a level of service perspective.

2. Acquisition of Replacement Buses

Recommendation: The report recommended the acquisition of 9 replacement buses by 2012 to replace vehicles purchased in 1987 and, further, that a 20-year vehicle replacement cycle be adopted and that an average of two to three vehicles per year be acquired after 2012 for this purpose. From a customer's perspective, the recommendation places newer buses on the road and increases the reliability of service (few vehicles breakdowns or servicing requirements).

Outcome: All buses that were due to be replaced were replaced. Beyond this, Metrobus has also committed to replacing a further 26 buses by 2016. This should further bring down the age of the fleet, and improve reliability and comfort for transit users. Since the replacement of buses generally would have a neutral to positive effect on overall ridership, it can be concluded that the composition of the fleet was not a factor in the reported ridership decline.

3. Purchase of Diesel-electric Hybrid Drive Buses

Recommendation: The report recommended that consideration be given to acquiring diesel-electric hybrid drive buses in future provided supplementary funding is available in addition to other needed capital funding for the fleet replacement plan. From a customer perspective, this can enhance the image of Metrobus as an environmentally supportive and sustainable travel alternative.

Outcome: This recommendation has not been implemented and is not a factor in the ridership decline. It should be noted that Metrobus will be testing mini-hybrid units, which has the potential to save fuel. This can be used as part of a positive 'green' marketing campaign, which may have some impact on future ridership. However, this recommendation (since it wasn't implemented) did not have an impact on the decline in ridership.

4. Transit Facility

Recommendation: The report recommended that the existing transit facility on Freshwater Road be replaced and that Metrobus staff be authorized to obtain suitable land for a new facility and to begin the design process for the facility. This will have little impact on direct customer experience but will help the transit system accommodate future growth.

Outcome: The tender for a new transit garage was recently awarded and the facility will be a LEED certified building. The new building may help future operations, but was not a factor in the past ridership decline.

5. Shelters

Recommendation: The report recommended that the 5-year capital budget be updated to acquire 126 shelters at an approximate cost of $1,260,000 for installation at locations throughout the city. This has an impact on the customers overall experience at the bus stop, particularly during inclement weather conditions.

Outcome: This recommendation was not completed. Metrobus did not budget for any new shelters over the past couple of years. This is partially due to the high maintenance costs and the rates of vandalism. Since the need for shelters existed prior to the 2007 review, it can be concluded that this did not contribute to the reported ridership decline. However, the presence of more shelters in the system, particularly during inclement weather conditions will help increase ridership and Metrobus should continue to implement the recommendation.

6. Transit Terminals

Recommendation: The report recommended that staff work with the mall owners at the Village Shopping Centre and the Avalon Mall to construct new, expanded and more transit-friendly transit terminals at those important locations. This would have an impact on the customer's overall experience while transferring or waiting for a bus.

Outcome: No progress on terminal redesign has been achieved to date. The cost of modifying the terminals is borne by the mall owners, and they have not moved forward with a change in the design. Since the problems with the terminal designs existed before the 2007 changes, it can be concluded that the terminals were not a factor in the ridership decline. However, Metrobus should continue to look at opportunities to improve the terminals and work cooperatively with the mall owners to be a part of the design process as discussed in **Section 10**.

7. Transit Supportive Policies

Recommendation: The report recommended that Metrobus staff request the City of St. John's to adopt transit-supportive land use and parking policies as outlined within the report.

Outcome: This recommendation has not been complete. Conversations with the planning staff at the City of St. John's indicate a desire to implement transit supportive development policies, and there needs to be more dialogue between Metrobus and City staff. It can be concluded that with the current rate of growth occurring in the greater St. John's Area, development in areas that are not serviced by transit or that have been built in a manner that does not support effective transit use could have contributed to some of the reported ridership decline (i.e. as population shifts from areas with good transit service levels to areas with lower service levels, or with no transit, then transit ridership will be reduced). It can be further concluded that a continued lack of transit supportive development may contribute to further ridership decline and development in areas not serviced by transit will continue to be a missed opportunity.

8. Transit Priority Measures

Recommendation: The report recommended that Metrobus staff work with the City's traffic and transportation department staff to identify intersections and locations throughout the city where transit priority measures should be introduced to give transit vehicles priority over automobiles and to improve service reliability.

Outcome: To date, no transit priority measures have been implemented. Metrobus has had some recent discussions with the City and have begun preliminary discussions with a supplier. A plan in the immediate future is to replace the radio system in the bus fleet to make sure it is able to accommodate transit priority measures. The City Engineer is also supportive of Metrobus putting in place transit priority measures in some specific locations, however, there needs to be more discussion regarding who would bear the capital cost. It can be concluded that while the lack of transit priority measures is not a significant contributor to the ridership decline, it will be important, as congestion continues to increase, to implement such measures.

5.2 M-Card

The M-Card's potential contribution to ridership decline was discussed in **Section 4** from a reporting perspective. This section describes the M-Card from a user's perspective, in an effort to determine whether its introduction has contributed to ridership decline.

The M-Card system has many advantages that the previous paper monthly pass and 10-ride ticket system did not. The M-Card streamlines the process of collecting fares when passengers are boarding a bus, there is an ease of use in buying and reloading the card at one of the seven convenient locations or at the user's convenience online. Also, a passenger can either purchase a 10-ride ticket, a monthly pass or a 30-day pass. The 30-day pass is not tied to purchases at the beginning of a month. Unlike the monthly pass, the 30-day pass is activated when the card is purchased or reloaded (which could occur anytime during the month). From then it is valid for 30 days. This benefits passengers by allowing them to use the pass when they need it, not being restricted to use during a calendar month. This also benefits Metrobus and pass sales offices as it reduces the influx of pass sales during specific periods (i.e. the end of a month) experienced by most transit systems. M-Card also offers a rewards program that allows users to accumulate points that can then be redeemed to make purchases from the Metrobus rewards catalogue. Metrobus staff are considering the possible phase out of the monthly pass and a move towards the 30-day pass only.

The online community survey, the CNA student survey, and the Memorial University student survey queried respondents on their usage of and opinions of the M-Card. The results were quite positive as outlined below:

Online Community Survey

- 78 percent of respondents use M-Card to pay for their trips;
- 52 percent of transit users are "very familiar", while another 36 percent are "somewhat" familiar with the M-Card;
- Only 36 percent of non-transit users are "not at all familiar" with the M-Card; and
- When asked to rate the convenience of fare (i.e. M-Card), 36 percent of respondents rated it "excellent", while another 45 percent rated it "good".

CNA Student Survey

- 81 percent of respondents use M-Card to pay from their trips;
- 61 percent of respondents are "very familiar", while another 31 percent are "somewhat" familiar with the M-Card; and
- When asked to rate the convenience of fare (i.e. M-Card), 36 percent of respondents rated it "excellent", while another 38 percent rated it "good".

Memorial University Student Survey

- 30 percent of respondents use M-Card to pay from their trips;
- 45 percent of respondents are "very familiar", while another 30 percent are "somewhat" familiar with the M-Card; and
- When asked to rate the convenience of fare (i.e. M-Card), 31 percent of respondents rated it "excellent", while another 43 percent rated it "good".

As mentioned in **Section 4**, there have been some instances where there has been a lag time between the customer reloading their card on-line and it registering on buses. In these situations, the user claimed to have filled the card that day, but the M-Card system did not recognize this. This is not an error, but the process given the existing M-Card technology and the potential lag is communicated to M-Card users via an online agreement when a passenger refills or purchases their

M-Card. While in some cases the transit trip is not made, the low frequency of these occurrences suggests that it is not a significant contributor to ridership decline.

5.3 Summary

Based on the above findings, it is difficult to attribute the reported ridership decline on internal factors within the control of Metrobus. Passengers and the general public have been positive or indifferent to the service changes.

The service changes were generally deemed to be acceptable to the existing transit users and this should have at minimum seen a plateau effect on overall ridership.

The introduction of the M-Card has also made the service more convenient to use, as is evidenced by the growth in M-Card usage over previous paper pass and ticket sales. The rewards program issued by Metrobus for M-Card users also provides incentive to use this fare medium, however, this is likely to be more attractive to existing Metrobus users rather than new users to the system.

This leads to the conclusion that external influences are more of a contributing factor to the overall ridership decline than decisions made internally. This is discussed in more detailed in **Section 6.0**.

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6.0 EXTERNAL EFFECTS

There are a number of external factors that can influence transit use which may have contributed to the reported ridership decline on Metrobus since 2007. External factors are ones that Metrobus has little influence over and include:

1. ***Population and Employment Growth:*** both the rate of growth and location of new population/employment relative to the transit service area;
2. ***Land Use:*** the degree to which land use is supportive of transit (i.e. density, accessibility of bus stops, etc.);
3. ***Undeveloped Lands:*** the degree and type of development occurring within and outside the transit service area;
4. ***Demographic Characteristics:*** the profile of population located within the Metrobus service area, including age, income, gender, etc.;
5. ***Factors Influencing Auto Ownership and Use:*** the cost of vehicle acquisition and operation, parking pricing and availability, and level of road congestion;
6. ***Economic Activity:*** the economic prosperity within the greater St. John's area, including housing affordability, development activity, personal income, etc.; and
7. ***Other Modes:*** the degree to which other non-auto modes are increasing in their share of the travel market (i.e. school bus operations, taxi's, paratransit, walking, cycling, etc.).

Each of these external factors is discussed below in relation to its potential influence to the decline in Metrobus ridership.

6.1 Population and Employment Growth

The degree and location of population growth in Newfoundland has historically been linked to three factors: the unique topography, the rise and fall of the Atlantic fisheries, and more recently the success of the oil and gas industry. It is the latter of these that is starting to and will continue to play a role in shaping future population growth in the St. John's area.

Over the past few decades, St. John's population has been stable. There was a period of population decline in the mid 1990's preceded and followed by population growth. Recently, the oil and gas industry has kick-started rapid population growth. However, the majority of these new residents are locating along the TransCanada Highway Suburban Corridor, namely in the municipalities of Paradise and Conception Bay South. This corridor has increased in population by 95 percent since 1981 (Hemson Consulting Ltd. based on Statistics Canada data, 2009). At the same time, population growth in the Suburban Perimeter (Portugal Cove-St. Philips, Torbay & Logy Bay, Middle Cove, and Outer Cove) has increased by 73 percent (Hemson Consulting Ltd. based on Statistics Canada data, 2009). These areas are currently not served by public transit.

Within Metrobus' existing service area (St. John's and Mount Pearl), the population increased by only 4 percent between 1981 and 2006. While Mount Pearl has reached full build-out, St. John's has areas of developable land still available, especially in its southern urban fringe (Hemson Consulting Ltd. based on Statistics Canada data, 2009).

St. John's economy has had a turbulent 25 years with the collapse of the Atlantic fishing industry. However, recent growth in the oil and gas industry has helped the economy rebound and reach near

record employment rates. Unemployment rates have been in a steady decline since the late 1990's and it is now almost half (just over 8 percent) of what it was in the early 1990's (Hemson Consulting Ltd. based on Statistics Canada data, 2009). Employment has experienced growth every year (except for one) since 1997.

Employment growth by major sector (see **Table 7**) shows that the most growth has occurred in the goods producing sector, specifically oil and gas, forestry, etc. There has also been significant growth in professional and business services. Even with this growth in the past 20 years, the largest employer remains health care and social services.

Table 7 – Employment Growth by Industry in St. John's CMA

	1990	1995	2000	2005	2009	Growth
Total employed	**79**	**79.4**	**83.5**	**90.3**	**99.2**	**20%**
Total: Goods-producing sector	*9.7*	*9.6*	*9.9*	*11.7*	*14.9*	*35%*
Agriculture	0	0.5	0	0	0	0%
Forestry, fishing, mining, oil and gas	1	1.6	1.8	1.5	3.6	72%
Utilities	1.2	0.6	0.8	1.3	1.1	-9%
Construction	3.4	4.2	3.8	4.7	5.7	40%
Manufacturing	3.9	2.7	3.1	3.9	4.3	9%
Total: Services-producing sector	*69.3*	*69.8*	*73.6*	*78.6*	*84.4*	*18%*
Trade	14.3	14.1	14	17.1	15.5	8%
Transportation and warehousing	4.3	4.2	4	4.1	4.6	7%
Finance, insurance, real estate and leasing	4.5	4.8	4.7	4.3	4.7	4%
Professional, scientific and technical services	3.6	3.4	4.5	5.2	6.1	41%
Business, building and other support services	1.8	1.6	2.7	4.6	4	55%
Educational services	8.4	7	7.9	8.5	8.2	-2%
Health care and social assistance	12	13.4	12.9	11.7	16.9	29%
Information, culture and recreation	3.7	5.1	4.6	4.5	5.4	31%
Accommodation and food services	4.7	4.6	6.9	6.7	5.7	18%
Other services	3.8	3.6	3.7	4.3	4	5%
Public administration	8.4	8	7.6	7.7	9.3	10%

Source: St. John's Department of Economic Development, Tourism, and Culture 2009

The information presented in this section provides some insight into possible reasons for the ridership decline. The greater St. John's area is growing in population. However, population growth is occurring mainly in the suburbs (Paradise, Conception Bay South), which are not served by transit. St. John's is also growing in employment. However, the many of the industries that are growing the fastest (forestry, oil and gas and construction) have work schedules and are in locations that are difficult to serve with transit. In addition, an increasing portion of the workforce in St. John's resides in suburbs which are not accessible by transit.

6.2 Land Use

As a result of its rich history and position as an established regional centre, St. John's has a wide variety of land use and density patterns. The older areas of the City including the downtown have a compact urban form and range of high density housing types including apartment buildings, rowhouses, and semi-detached houses. Central St. John's is configured as a patchwork of neighbourhood street grids. These areas are very conducive to transit service as the travel market is concentrated around a network of streets that is efficiently navigable by transit vehicles. However, the size and physical environment of central St. John's makes it very walkable as well. With increasing distance from the downtown, density generally becomes lower and transit usage always increases with density (at both trip origins and destinations). The suburban areas are characterised by low density residential neighbourhoods with commercial clusters. Commercial clusters can be important destinations and transfer points, but low density suburbs are not conducive to efficient transit services. The character of the retail land use in St. John's is also varied, with boutiques and specialty shops located in the downtown alongside offices, and a regional mall and a number of big box retail developments occurring alongside residential subdivisions and business parks. Mount Pearl is characterised by a small downtown anchored by City Hall, residential subdivisions, and big box commercial uses clustered in several locations.

Most of the Region's employment opportunities are concentrated in Downtown St. John's and in business and industrial parks in St. John's and Mount Pearl, such as Donovan's Business Park in Mount Pearl and O'Leary Industrial Park in St. John's. Community infrastructure, such as schools, universities and colleges, health care facilities, libraries and other public services are located in the urban centre of the Region, including the Memorial University campus and surrounding health, government and institutional uses.

This means that many people from surrounding communities travel into the core for work and to access regional services and facilities. This travel is often accommodated on the regional corridors such as Torbay Road between St. John's and Torbay and Topsail Road, Kenmount Road or the Outer Ring Road between St. John's and Paradise. This travel demand is currently not captured by Metrobus.

While in several ways the recent land use patterns are not conducive to transit ridership growth, there has been little change in land use patterns that would have contributed to the reported ridership decline. Land use, however, should be considered as a key factor in influencing future ridership growth.

6.3 Undeveloped Lands

St. John's still has 962 hectares of undeveloped land available for future residential development, while Mount Pearl has developed more than 95 percent of the land it has zoned for residential use and has only 33 hectares remaining. Conception Bay South and Paradise have 1,955 hectares of land zoned for residential development that remains undeveloped (Unpublished Newfoundland and Labrador Department of Municipal Affairs Report, 2009).

There are many developments under construction and in various stages of review. St. John's is anticipating growth in various areas throughout the city, with some of the largest subdivision applications for the Goulds, Kilbride, Southlands, the west side of Ruby Line, the areas around Kenmount and Thorburn Roads, and Airport Heights. Approximately 14,000 units (or lots) can be expected within the City of St. John's boundaries if all developments currently under construction and future subdivision developments are fully implemented. Much of the development that has

occurred in St. John's has been low density and not transit supportive. Mount Pearl is almost fully built out with only 4 percent of land zoned residential available for future development (Unpublished Newfoundland and Labrador Department of Municipal Affairs Report, 2009).

St. John's is also proposing to amend the Regional Policy Plan to allow for development above the 190 metres contour elevation. Removal of this policy restriction would open up an additional 290 hectares of developable land in the Southlands area and 200 hectares in the Southwest Development Area. A recent review of the St. John's Agricultural Development Area by the Provincial government is also recommending that 567 hectares of agricultural land be made available for urban development, including 443 hectares in Portugal Cove – St. Philip's near Windsor Lake (Newfoundland and Labrador Department of Natural Resources, 2009).

Residential expansion is expected to continue in the rapidly growing Town of Paradise. Major growth is anticipated around Adams Pond and adjacent to Octagon Pond. Development is comprised of large lot, low density districts with local commercial uses. However, land is set aside for higher density development and will be developed according to market conditions. Overall, almost 6,000 residential units are expected in Paradise, while almost 5,000 residential units are expected in Conception Bay South. Big box retail development (40 hectares) and light industrial use (16 hectares) are also expected in Conception Bay South. (Unpublished Newfoundland and Labrador Department of Municipal Affairs Report, 2009).

Overall, there is a general oversupply of land planned for and potentially available for residential development even though most (75 percent) residential development is expected to be single detached. There is, however, a need for more employment uses and a new business park in the range of 200 hectares (Unpublished Newfoundland and Labrador Department of Municipal Affairs Report, 2009).

To address overall servicing needs, many provinces in Canada have developed growth plans to guide Official / Development Plans in each municipality. In Ontario, the provincial government developed a 'Places to Grow' growth plan. One of the keys to this plan is a 40 percent intensification target. This means that all municipalities must ensure that 40 percent of new development occurs in existing built-up areas (intensification) as opposed to greenfield development. This initiative helps support the effective delivery of services, including transit.

Public transit service should be proactive in servicing future development areas. Most of the areas identified for development in St. John's are currently served by transit, however coverage and service levels may need to be increased. Paradise currently does not have transit service, and a previous transit study commissioned by the Town identified some need for service but concluded that if would not be cost effective. Clearly, a regional transit strategy will be required to address ridership growth opportunities in the greater St. John's area.

6.4 Demographic Characteristics

Aging Population

St. John's population profile has been aging over the past 20 years. Levels of natural population increase in the region are declining due to decreasing fertility rates, the aging of the population overall, and particularly the aging of the "baby boomers" beyond the childbearing years.

It is important to understand that the amount and type of housing occurring in the region is directly dependent on the age structure. An older population is generally characterized by smaller households as "empty nesters" are formed when the offspring move out. Labour force participation

in an aging society is lower as the labour force is generally comprised of the 20 to 60 year old population.

The senior population tends to be more dependent on transit than other age groups and requires different services, forms of service delivery, and levels of service. It is important for Metrobus to fully understand the needs of this age group and proactively cater to them.

Household Formation versus Population Growth

Household formation in St. John's is occurring at a faster rate than population growth. This means that the number of occupants per household is getting smaller. This is a result of two factors:

- An older population creates more households than a younger population as 'empty nest' and single person households increase dramatically; and
- The declining birthrate reduces the number of children per household.

A third factor is the growth in prosperity in recent years in Northeast Avalon. In periods of prosperity more young people tend to move out of their family home and many have moved to peripheral locations where the cost of housing is less expensive. This trend contributes to transit ridership decline.

Birthrate

The birthrate in St. John's has been decreasing. Students are a big part of transit ridership as they often have no other means of getting to/from school. The declining number of school aged children is contributing to Metrobus' ridership decline.

6.5 Factors Influencing Auto Ownership and Use

Auto Ownership

Auto use is inversely proportional to transit ridership. Generally, in times of economic prosperity auto use tends to increase and St. John's recent economic boom as a result of the oil industry is reflected in increased auto use. According to a recent issue of Moneysense Magazine, St. John's ranks sixth in the percentage of new cars on the road out of 178 communities in Canada. This is ahead of Toronto, Vancouver, Calgary, and Montreal, the major centres of population in Canada. Since 2007, it can be inferred that more residents are able to own and operate cars and that this trend has had a negative impact on Metrobus ridership.

According to the CUTA Transit Vision 2040 report, transit fares are increasingly expensive compared to automobile use. Transit fares in Canada have been rising faster than inflation and have increased by 25 percent in real terms over the past decade.

Parking Supply and Price

The St. John's Downtown Development Commission completed a Downtown Parking Study in 2009 that analysed the existing parking supply and pricing and outlined a Parking Management Plan based on Downtown growth and anticipated parking demand. This report found that on weekdays, on-street parking utilization peaks at 80 percent while off-street parking utilization peaks at 61 percent. On street utilization is 100 percent on the west side of Downtown during the weekday peak. This analysis indicates that on street parking is well used throughout the Downtown area with some capacity available on the east and in off street facilities/lots. On weekends there is ample

capacity available as utilization is 61 percent on street and 24 percent off street (Downtown St. John's Parking Study, 2009).

Contributing to a person's choice for driving downtown is the low cost of parking. In the downtown, the City's rate ($60) for monthly parking is lower than the cost of parking in comparable cities as well as the cost of a Metrobus adult monthly pass ($70). Parking in major employment areas outside of the downtown is generally free, with the exception of Memorial University.

Since 2007, the parking supply and pricing situation has not changed sufficiently to be considered a major impact on the reported ridership decline. However, combined with the increased economic prosperity, generally low congestion levels and the low cost of auto ownership, the pricing and supply of parking throughout the transit service area are major reasons why people are choosing the automobile for their travel needs.

6.6 Economic Activity

The recent economic prosperity that St. John's has been experiencing has been discussed in the previous section as it relates to automobile ownership, household formation, and employment growth. Signs of this economic prosperity are also evident in personal income level, which has been on a steady increase. Between 2008 and 2009, total personal income increased by almost 6 percent (St. John's Department of Economic Development, Tourism, and Culture, 2009). This increase in disposable income is one of the factors that are contributing to increased auto ownership.

Oil and Gas Industry

The recent economic recession has not completely bypassed St. John's, although the rise of the oil industry has helped cushion the impact. While residential building permits increased slightly between 2008 and 2009, non-residential building permits declined by over 25 percent. St. John's GDP also dropped 6.9 percent between 2008 and 2009, while the otherwise declining unemployment rate increased by 0.5 percentage points (St. John's Department of Economic Development, Tourism, and Culture, 2009).

While economic growth generally has a positive impact on transit ridership, the type of economic growth occurring in St. John's may not. The oil industry is increasingly now focused on off-shore oil production instead of on-shore oil refining as in decades past. Employees that work on off-shore oil rigs often spend extended periods of time off-shore and do not make daily commutes to/from work. It should be noted that the off-shore oil industry, brings with it a demand for office space to house supportive industries. Engineering, technologists, and administrative personnel make up 81 percent of the workforce in companies directly involved in the oil and gas sector (City of St. John's et al, 2004). However, these jobs are generally not shift oriented, are mostly held by higher income individuals and are therefore not a strong contributor to ridership growth.

6.7 Other Modes

Active Transportation

There is growing participation and interest in active transportation (walking, cycling) in St. John's in recognition of its health benefits and growing popularity as an alternative to automobile travel. As a result, St. John's recently began implementing a 20 Year Cycling Master Plan that will create an integrated cycling and trail network throughout the City. The Plan does identify the importance of integrating active transportation with transit and makes a recommendation for Metrobus to work together with the City of St. John's in an effort to integrate these modes (5 Year Transit Service

Plan, 2007). This would give the public greater travel choice and help Metrobus make up for any potential ridership lost to active transportation. However, this likely represents a small percentage of the city's overall mode share and there is little evidence that the percentage of persons that walk or cycle has risen to such a degree that it would influence transit ridership.

School Buses

While ridership has been relatively constant over the past decade, the demographic characteristics of the market have been changing. The purchase of yellow school buses by the school boards and declining enrolment in elementary/high schools has resulted in a drop of elementary/high school student ridership from 770,000 passengers in 1997 to 260,000 passengers in 2005 (5 Year Transit Service Plan, 2007). Most of this ridership loss occurred before the 2007 service change.

Paratransit

The City of John's provides a paratransit system for those whose lack of mobility makes it difficult to use Metrobus services. The system operates a door-to-door service where users pre-book trips. Since 1997 (when City assumed responsibility of the system), ridership has more than tripled over and is expected to continue to increase (St. John's Paratransit Review, 2009). While demand has slowed in recent years (see **Table 8**), a recent review of paratransit services suggests that it will continue to grow. Between 2006 and 2008, the number of annual trips increased by just under 10,000. Much of this is due to an increase in capacity provided on the system, suggesting a large latent demand. While this does not account for the loss of ridership on Metrobus, it may be a small contributing factor which will grow in significance, particularly with an aging population.

Table 8 – Growth in Passenger Paratransit Passenger Trips (1997-2008)

Year	Trips	Growth
1997	27,000	
1998	33,150	22.8%
1999	39,300	18.6%
2000	45,450	15.6%
2001	51,600	13.5%
2002	57,750	11.9%
2003	63,900	10.6%
2004	70,050	9.6%
2005	76,200	8.8%
2006	82,350	8.1%
2007	88,500	7.5%
2008	91,500	3.4%
Average Annual Growth		**11.9%**

Source: St. John's Paratransit Review, 2009

The recommendations of the Paratransit Review suggested that Metrobus increase its accessible bus fleet in an effort to absorb some of the ridership growth experienced by the City's paratransit system (St. John's Paratransit Review, 2009).

6.8 Summary

There are a number of external factors mentioned above that seem to be contributing to ridership decline.

Population and employment growth is occurring at a rapid rate in the greater St. John's area. However, the majority of this growth is occurring in areas outside the City of St. John's and Mount Pearl, where there is no transit service available. Growth within the transit service area is stagnant. Household size (persons per household) continues to get smaller and birthrate continues to decline. The majority of people moving outside the City of St. John's are young families. Based on the results of the on-board passenger survey, passengers between the ages of 20 and 34 represent the majority of transit riders, and this segment of the population within the service area may see a decline.

The senior's population is a viable market for Metrobus as they tend to live in smaller households in more mixed use and dense areas to give them better access to daily necessities. However, as their associated mobility issues increase, they are making the switch to door-to-door and accessible paratransit services. According to the on-board passenger survey, few seniors are using Metrobus.

The recent boom in the oil and gas industry is seeing an increase in the employment rate and overall economic prosperity. Much of this employment growth is occurring off-shore and in areas not supported by transit. While there are spin-off office jobs that have increased in downtown St. John's, many of these are high paying with employees living outside of the City.

As a result of this economic prosperity, automobile ownership is increasing, with St. John's ranked the 6th highest in percentage of new cars on the road in all of Canada. The adequate parking supply, low pricing and lack of significant congestion all create a situation where the private vehicle becomes the preferred choice of travel. While this situation is not new, the economic prosperity is allowing more and more people to choose to drive.

These factors lead to a situation where the lifestyle decisions of many residents are no longer compatible with the existing transit structure. Many residents are choosing to live in areas not serviced by transit or are choosing alternative modes that better suit their lifestyle and reflect an increased ability to pay for a higher level of service. This is a primary reason for the ridership decline.

This does not, however, mean that Metrobus has no control over its destiny. While the 2007 service changes were generally found to be favourable, the fact that ridership did not grow from the proposed recommendations in the report suggests that Metrobus needs to move even further to address this new reality.

It would appear that while changes were made to improve the service, the system is still modelled under the old reality of responding to the travel needs of a limited market within St. John's/Mount Pearl.

Level of service is a key factor in people's transportation decisions. Metrobus has responded with innovations such as the M-Card and an effective marketing plan. However, for Metrobus to increase ridership, new market and service approaches are necessary.

PART C: ASSESSMENT OF MARKET OPPORTUNITIES

7.0 MARKET ASSESSMENT

An assessment of the existing and future market for transit was conducted to better understand the operating environment and ridership growth opportunities for Metrobus. Key markets for transit services include students, employees, and seniors. Population and employment growth opportunities and transit's ability to respond were also assessed.

7.1 Post-Secondary Market

There is one university and one major college in St. John's: Memorial University and CNA. Memorial University has two campuses in St. John's; the main campus located along Prince Phillip Drive and the Marine Institute located to the north of the main campus along Ridge Road. CNA also has two campuses in St. John's; at the Marine Institute location and on Prince Phillip Drive just northeast of the Memorial University main campus.

Memorial University is the largest university in Atlantic Canada, with more than 100 degree programs, and a total student population of 17,000. In addition, the university employs 950 full time faculty, 850 seasonal instructors, and 2,300 administrative and support staff.

CNA is one of the largest post-secondary educational and skills training centres in Atlantic Canada. There are 17 campus locations across Newfoundland with about 100 full time and 200 part time courses catering to about 20,000 students. The Prince Philip Drive Campus has 1,500 students while the Marine Institute Campus has 1,000 students.

There are numerous transit routes which service Memorial University and CNA, directly connecting students to the surrounding nodes and communities. The Memorial University main campus is served by 10 routes, Marine Institute by 4 routes, and CNA by 4 routes. There is a semester pass available for students at a price of $245 for four months. By comparison, the price of an adult monthly pass for 4 months is $280.

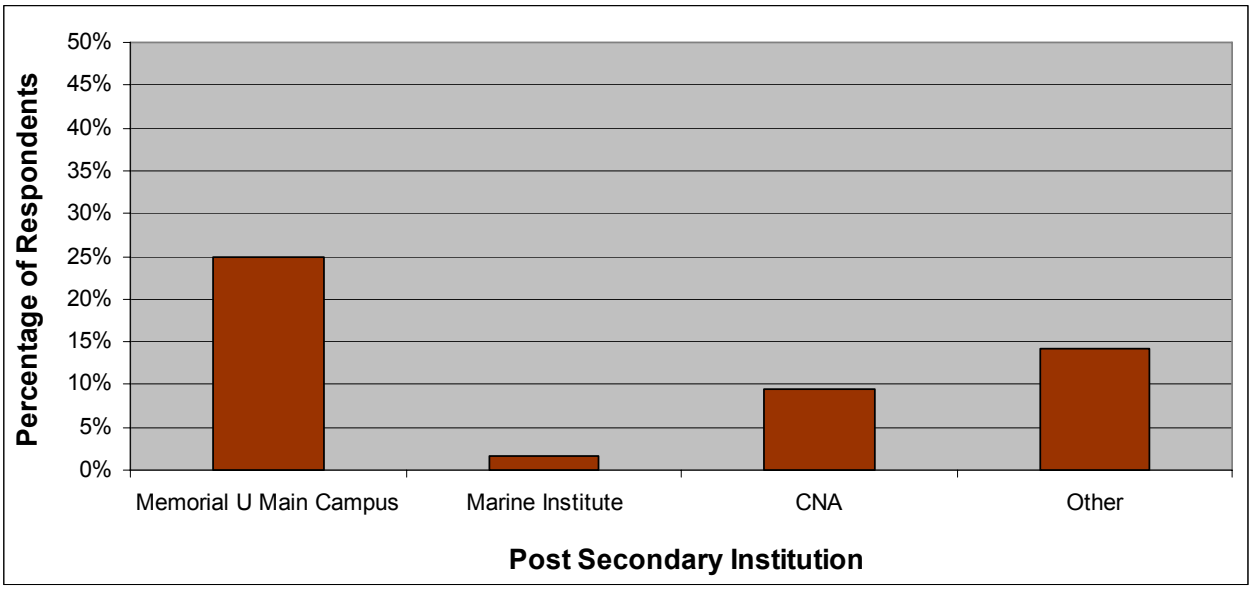
There are housing affordability and commute issues for post-secondary students residing in the St. John's area. With Metrobus only serving St. John's and Mount Pearl, access to housing outside of the transit service area is difficult for students without access to a car.

Some of the other prominent post-secondary institutions located in St. John's include:

- Centre for Nursing Studies – Est. 1995, 205 students, 100 Forest Road, Quidi Vidi;
- Academy Canada – 470 students, 167-169 Kenmount Road, O'Leary Industrial Park;
- Academy Canada – Trades College – 550 students 37-45 Harding Road , White Hills Industrial Park;
- CompuCollege – St. John's Campus – graduates about 250 students/year, 275 Duckworth Street, downtown;
- Keyin College – St. John's Campus – 44 Austin Street, 300 students, O'Leary Industrial Park; and
- LeMoine's School of Aesthetics and Hair Design – 55 Duckworth Street, downtown (no enrolment available).

These institutions are a key market for Metrobus in attracting higher ridership. According to the passenger survey, approximately 50 percent of respondents attended a post secondary institution. This is further broken down in **Figure 10**. As illustrated, the majority of post secondary student riders are from Memorial University. While 25 percent of the ridership is significant, this is not as high as other municipalities with similar sized institutions. This is discussed further in **Section 12**.

Figure 10 – Post Secondary Ridership (2009 Metrobus Passenger Survey)



7.2 Secondary School Market

Public schools in St. John's and Mount Pearl are managed by the Eastern School District. There are 6 secondary schools in St. John's catering to approximately 4,000 students. There are also 2 secondary schools in Mount Pearl (enrolment not available) (Eastern District School Board, 2010).

All schools in St. John's are fairly central and are well served by transit. The secondary schools in Mount Pearl are served by Routes 21 and 22, which provide coverage over most of Mount Pearl's urban area and connect to Village Shopping Centre in St. John's. Due to the broad coverage area these routes are somewhat indirect.

There is a declining enrolment (especially in central St. John's), aging infrastructure and shifting demographics. The province made a commitment to provide yellow school bus service for children outside a specified walking distance criterion. This has led to a reduction of Metrobus' role in providing transportation for students. Student ridership was 770,000 passengers in 1997 but only 260,000 passengers in 2005. According to the on-board passenger survey only 13 percent of the ridership is aged 0-19 (elementary and secondary school students). For comparison, recent on-board passenger survey for Guelph Transit in Ontario (a similar sized municipality) found that 27 percent of the ridership was aged 0-19. This is a market that is not well captured by Metrobus.

7.3 Hospital Market

There are four hospitals servicing St. John's. These include:

- Janeway Children's Hospital;

- General Hospital/Heath Sciences Centre;
- St. Clare's Mercy Hospital; and
- Waterford Hospital.

Janeway Children's Hospital (Janeway) is located at 300 Prince Philip Drive on the Memorial University Campus beside the Memorial University Health Sciences Centre and the General Hospital. The Janeway has been specializing in child care since 1966 with the new and current facility opening in 2001. The hospital has a total of 80 beds. In an average year the Janeway receives 29,551 Emergency Department visits, 28,922 outpatient visits to the Rehabilitation Centre, and 48,857 outpatient visits to the Medicine and Surgery departments. The Janeway is very well served by transit. Routes 10, 12, 15, 16, and 23 connect directly to the Janeway while Routes 1, 14, and 17 are a short walk away at the Memorial University Centre Terminal.

The General Hospital is the largest acute care facility in the province. The General is a tertiary or high-level acute care facility serving the people of the entire province. It is a teaching hospital and is connected to Memorial University's Schools of Medicine, Pharmacy and Nursing. It is also connected and shares services and staff with the Janeway Children's Health and Rehabilitation Centre. The Women's Heath Clinic is also located in the General Hospital.

St. Clare's Mercy Hospital (St. Clare's) is located in the Downtown at 154 LeMarchant Road. St. Clare's is a tertiary adult acute care hospital which has been serving the people of Newfoundland and Labrador since 1922. The hospital is served by Route 2 and Route 11 providing higher frequency service and direct connection to the Downtown, Avalon Mall, Village Shopping Centre, and Torbay Road Mall.

Waterford Hospital (Waterford) is located on Waterford Bridge Road in the St. John's south end. The Waterford specializes in the treatment and care of the mentally ill. On a typical day less than 200 patients occupy beds in the Waterford. Waterford is served by Route 3 and 6 providing direct connections to Village Shopping Centre, the Downtown and Kilbride/Goulds. Village Shopping Centre Terminal is also just a short walk away to the north.

Given the high level of transit service and the concentration of employment, the hospital sector is an ideal candidate for employee transit pass programs.

7.4 Commercial/Employment Market

Major employment concentrations in St. John's are found downtown, in and around the Memorial University, in business parks, and at retail centres.

As the provincial capital and a regional centre, a major employer in St. John's is the provincial government. The Confederation Building on Prince Philip Drive is a major centre of provincial government employment, while the Petten Building houses the Provincial Department of Fisheries and Aquaculture on Strawberry Marsh Road. Employment by industry and large employers within the city are identified in **Table 9** (Statistics Canada, 2006) and **Table 10** (St. John's Department of Economic Development, Tourism, and Culture, 2009).

Table 9 – Employment by Industry in St. John's

Industry	Employees *(approx.)*
Forestry, Fishing, Mining, Oil and Gas	3,600
Utilities	1,100
Construction	5,700
Manufacturing	4,300
Trade	**15,500**
Transportation and Warehousing	4,600
Finance, Insurance, Real Estate, Leasing	4,700
Professional, Scientific and Technical Services	6,100
Business, Building, and other Support Services	4,000
Educational Services	**8,200**
Health Care and Social Assistance	**16,900**
Information, Culture and Recreation	5,400
Accommodation and Food Services	5,700
Public Administration	**9,300**
Other Services	4,000

The four largest industries by employment size are Health Care and Social Assistance, Trade, Public Administration, and Educational Services. These are all typically fixed workplace employment, meaning that employees travel on a regular basis to/from the same location. This type of regular, frequent travel is ideal for transit service provision.

Table 10 –Large Employers in St. John's

Employer	Employees *(approx.)*
Eastern Health	5,800
Government of Newfoundland and Labrador	4,000
Government of Canada	4,000
Memorial University of Newfoundland	3,400
City of John's	1,200
Convergys	1,000
Aliant	1,000*
Sobeys Stores	850
Walmart Canada	800
St. John's International Airport	500
TeleTech (Mount Pearl)	400-600

** have experienced some layoffs, figure is inflated*

The Downtown is a major employment centre and active for business, retail and tourism. The Downtown Development Commission represents 550 member companies/businesses representing 8,000 to 10,000 employees, including Aliant. The downtown also houses several government

buildings and City Hall. Shortage of parking is seen as a major issue in the downtown and Metrobus is considered a potential solution.

Memorial University and its immediate surroundings (Health Services Centre and Confederation Building) is another large concentration of employment within St. John's, with approximately 10,000 employees. Parking is free at the Confederation Building and Health Sciences Complex. At Memorial University, parking is relatively inexpensive, however, supply is limited.

Secondary concentrations of employment include O'Leary Industrial Park (major industrial employers) and Avalon Mall.

The Downtown, Memorial University area, and Avalon Mall are well served by transit, however only Routes 10 and 16 penetrate into the O'Leary Business Park. Route 10 provides service 7 days a week within core Metrobus hours concentrated on morning and afternoon weekday peak times. Route 16 provides service only on weekdays and only until the early evening. A problem with this type of service is that industrial area employers often operate on shift schedules which may start/end outside of core Metrobus hours.

The primary commercial areas in St. John's outside of the Downtown are Avalon Mall, Village Shopping Centre, and the power centres in the north end off Torbay Road (Stavanger Drive area). Avalon Mall is the major regional mall in the area with 9 routes converging at an on-site terminal. The Village Shopping Centre is well serviced by transit, with 11 routes converging at an on-site terminal. The Mall houses a number of national retailers plus Convergys Call Centre (150/200 staff), Good Life Fitness, the St John's Telegram and an office of Desjardins Financial services. Based on discussions with the Village Mall Property Manager, there are approximately 500 employees at the mall, of which about 20 percent use transit.

The power centres in the Stavanger Drive area are only accessed by Route 3 and 23 and the auto-oriented design of the centres makes them difficult to service with transit. Route 3 provides good coverage and direct connection to the Downtown and Village Shopping Centre. Route 23 connects to Memorial University and Avalon Mall but does not provide service on Sundays or late evening service on Saturdays. The Power Centre in the Kelsey Drive area is serviced by Routes 10 and 16.

7.5 Industrial Market

There are three industrial parks in St. John's and Mount Pearl that are served with base and local routes. Industrial areas are traditionally difficult to service by fixed route transit. This is due to low densities, staggered shift times, and auto-oriented development. Specialized service strategies may be warranted in industrial areas to maximize performance and increase the level of service for users. Existing service to industrial parks within the Metrobus service area is detailed below.

O'Leary Industrial Park

The O'Leary Industrial Park is located to the west of Avalon Mall (where 9 routes converge). Route 10 provides service through the industrial park with connection to Avalon Mall, Memorial University, and Downtown. Service is provided between 6:10am and 12:15am, Monday to Friday; 6:50am and 12:20am, Saturday; and 8:20am and 8:40pm Sundays at frequencies ranging from 30 minutes (weekdays only) to 60 minutes. Transfers to most places in the service area can be made at Avalon Mall.

Harvey's Industrial Park and Stavanger Drive Retail Area

Harvey's Industrial Park (Stavanger Drive retail area) is located east of the Airport at the northern edge of the urban boundary. It is served by Route 3 connecting to Torbay Road Mall, Downtown, and Village Shopping Centre and by Route 23 connecting to Avalon Mall and Memorial University. This area is well served with routes providing good coverage and direct service to all major transit hubs. Route 23 does not provide service on Sundays or late evening service on Saturdays.

Donovan's, Beclin and St. Anne's Industrial Parks

Donovan's and Beclin Industrial Parks are located beside each other at the western edge of Mount Pearl. St. Anne's Industrial Park is just west of the aforementioned parks in Paradise. Only one route (Route 22) traverses through the Donovan's and Beclin Industrial parks, leaving much of the area without service. Route 22 connects into the Village Shopping Centre and also serves the residential communities in Mount Pearl. At Village Shopping Centre connections can be made to 10 other routes to access various locations within the service area. Route 22 has limited weekday peak time service at a 60 minute frequency. No service is provided to the St. Anne's Industrial Park. It should be noted that service to these industrial parks is under the jurisdiction of other municipalities. A modified service agreement would need to be in place with Mount Pearl to alter service to Donovan's and Beclin Industrial Parks and a new service agreement would need to be in place with Paradise to offer service to St. Anne's Industrial Park.

7.6 Tourism / Recreation

Prominent tourism attractions in the St. John's area are often outside of the urban area and include scenic coastal routes, rural communities and hiking trails. However, for the over 300,000 tourists arriving from outside of Newfoundland, St. John's International Airport is the major access point to the St. John's area. There are a cluster of heritage attractions in and around St. John's with quality dining, accommodations, learning and cultural entertainment experiences. There areas are well served by transit.

7.7 St. John's International Airport

St. John's International Airport, located to the north of the City, is the major point of entry for tourism and business travel to the region. It is also a significant component of the local economy as the Airport Authority employs 100 employees directly, with another 400 employed by other companies operating at St. John's International Airport. Passenger traffic at the airport has been growing rapidly. Traffic in recent years has reached 1.2 million passengers annually with plans to increase capacity to 2 million and the introduction of additional parking. Military traffic makes up about one third of all passenger traffic, while 60 percent is business related (Unpublished Newfoundland and Labrador Department of Municipal Affairs Report, 2009).

Cargo traffic represents a small portion of the current operations, but the airport is planning to undertake a study of its cargo operations and has also submitted plans to develop 175 acres of land for supportive industrial uses. That is about half of the total area still available for development on the airport lands.

Currently, there is only one route that approaches St. John's International Airport but does not connect directly to the terminal building. Route 14 runs between the southern vicinity of the airport, Torbay Road Mall, the Memorial University Main Campus and Marine Institute.

8.0 BENCHMARK REVIEW

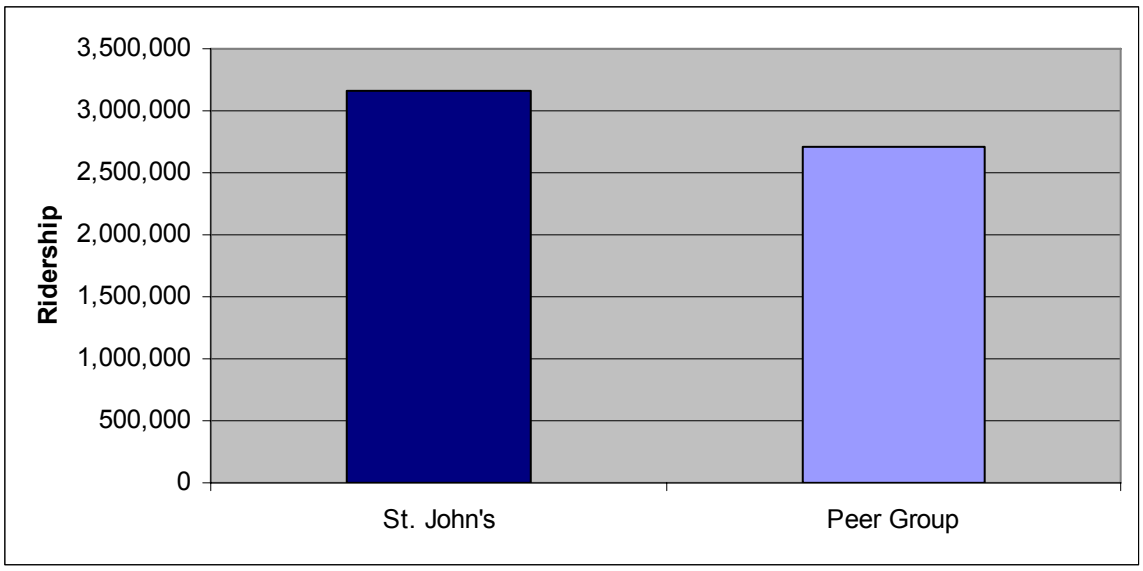
A benchmark review was conducted using Canadian transit systems in municipalities with similar urban characteristics as St. John's. The peer group was developed based on 2008 statistics from the Canadian Urban Transit Association (CUTA) and includes municipalities with a population between 50,000 and 150,000 (population group 3 – not including Whistler, B.C.)

Municipalities used in the peer review comparison are indicated in **Appendix F**.

8.1 System Characteristics

Metrobus' service area population is 130,427, which is higher than the peer group's average of 96,760. As indicated in **Figure 11**, Metrobus is also above the average reported ridership among its peer group.

Figure 11 – Revenue Passengers

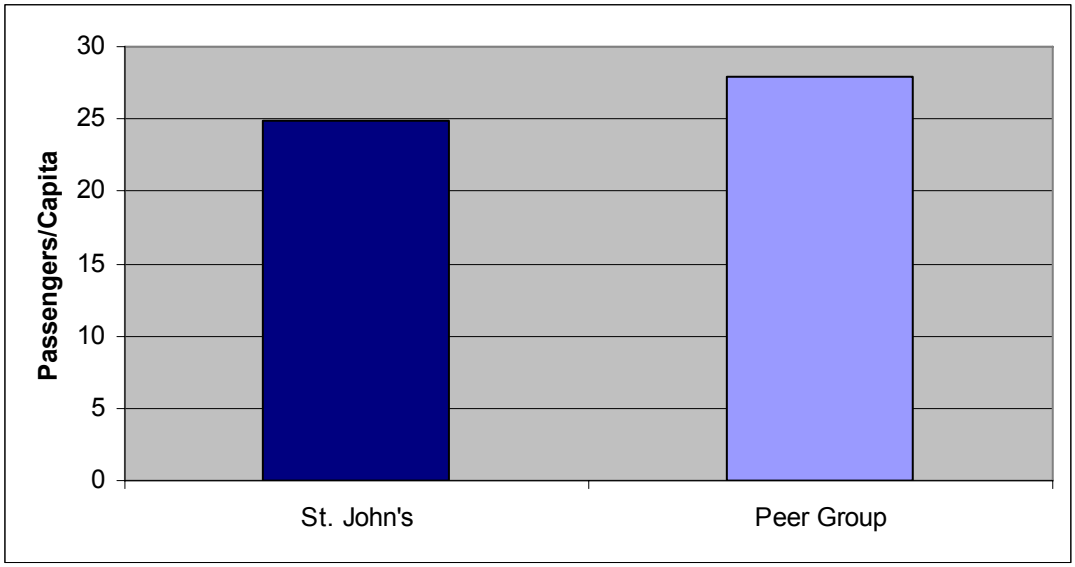


Metrobus operates 53 buses. The peer group average is 42 buses, with a minimum of 13 and a maximum of 84 buses.

8.2 Transit Utilization

Service utilization is measured through two indicators: regular service passengers per capita and regular service passengers per revenue vehicle hour. "Regular service passengers per capita" is a good measure of utilization since it takes into account the population of the transit service area. **Figure 12** illustrates this statistic for the peer group.

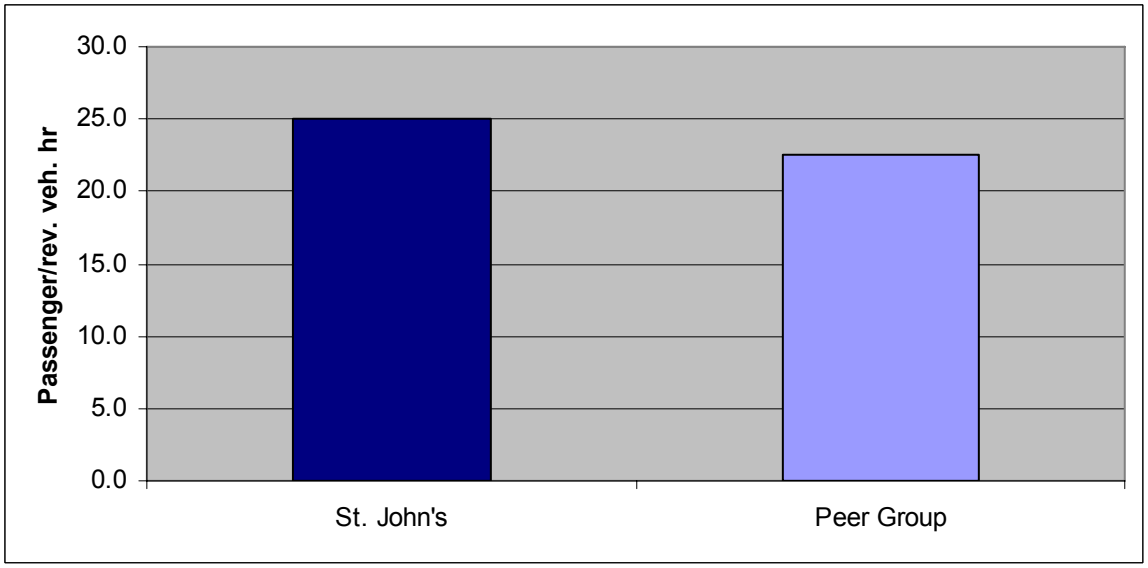
Figure 12 – Regular Service Passengers per Capita



Metrobus is attracting a ridership/capita of 24.84, which is slightly below the peer group average of 26.93. This indicates an opportunity to attract additional ridership through service level improvements or demand management techniques.

"Regular service passengers per revenue vehicle hour" is a measure of system productivity. **Figure 13** illustrates this statistic for the St. John's' peer group. Metrobus is currently achieving 24.96 passengers per revenue vehicle hour, which is above the overall peer group average of 23.18 (range from 10.43 to 34.72). This means that the system is being well utilized based on the hours of service provided. While the system is productive, it should be noted that this is not a good indication of desirability of the service, which is provided using the ridership per capita performance indicator (identified above).

Figure 13 – Ridership per Revenue Service Hour



8.3 Amount of Service

Table 11 illustrates the service hours provided by select systems in the peer group. Metrobus provides weekday service between 6:30am and 12:30am, Saturday service between 7:30am and 12:30am, and Sunday service between 8:30am and 8:30pm. Its 18 hour service day on weekdays and 17 hours of service on Saturdays is slightly below the select peer group average of 18.5 hours and 17.75 hours respectively. Sunday service hours are in line with the peer group average. This means that Metrobus is providing slightly less service hours than other systems with similar service area populations.

Table 11 – Hours of Operation

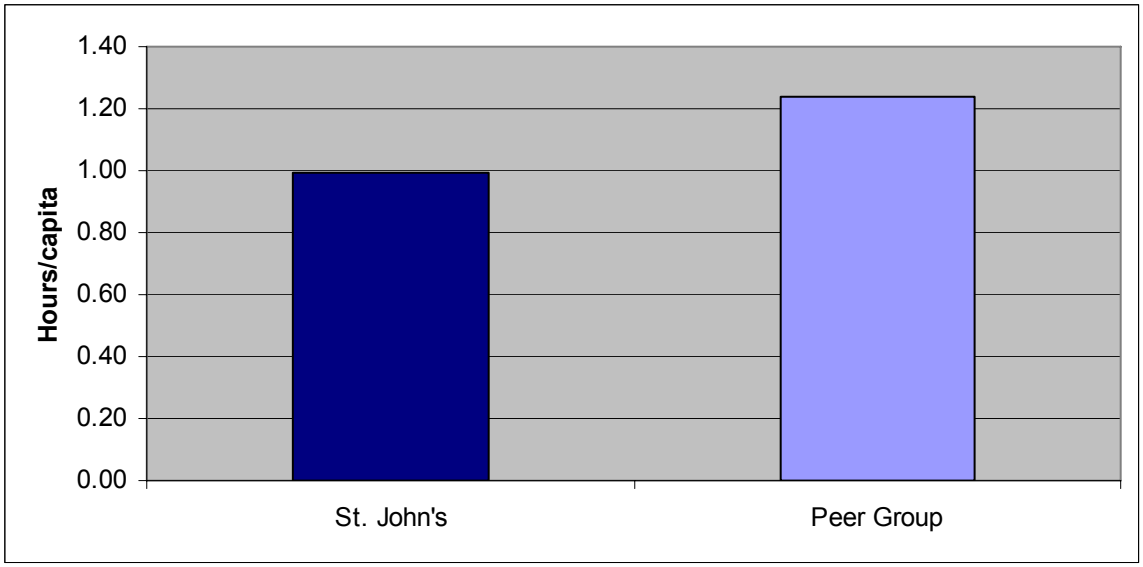
System**	Monday - Friday			Saturday			Sunday/Holiday		
	Start	End	Hours*	Start	End	Hours*	Start	End	Hours*
St. John's *(127,097)*	***6:30 AM***	***12:30 AM***	***18***	***7:30 AM***	***12:30 AM***	***17***	***8:30 AM***	***8:30 PM***	***12***
Moncton *(120,525)*	6:20 AM	11:10 PM	16.75	6:20 AM	11:10 PM	16.75	7:35 AM	7:50 PM	12.25
Saint John *(122,389)*	5:15 AM	12:20 AM	19	6:00 AM	12:20 AM	18.25	8:20 AM	9:05PM***	12.75
Barrie *(124,200)*	5:45 AM	12:30 AM	18.75	7:15 AM	12:30 AM	17.25	9:00 AM	7:15 PM	10.25
Guelph *(120,000)*	5:30 AM	1:00 AM	19.5	5:30 AM	1:00 AM	19.5	9:00 AM	7:00 PM	10
Thunder Bay *(109,000)*	6:00 AM	12:20 AM	18.5	6:00 AM	12:20 AM	18.5	9:00 AM	11:00 PM	14
Average	5:53 AM	12: 18 AM	18.5	6:26 AM	12:18 AM	17.75	8:34 AM	8:26 PM	12

**rounded to the nearest quarter hour **service area population ***limited routes*

8.4 Level of Service

A good measure of the amount of service provided is revenue vehicle hours per capita. **Figure 14** illustrates the comparison of this performance measure. St. John's is at 1.00 revenue vehicle hour per capita, which is lower than the peer group average of 1.21 (with a range between 0.12 and 7.43). While Metrobus services one of the larger populations in the peer group, level of service is below the peer group average. It should be noted that service level is a key determinant of overall ridership.

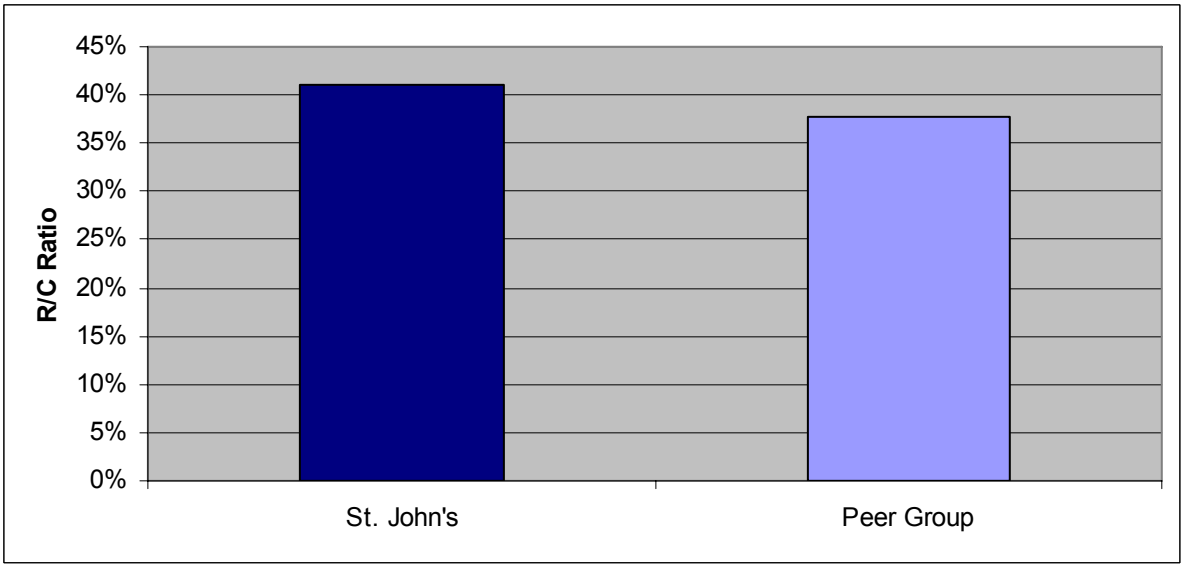
Figure 14 – Revenue Vehicle Hours per Capita



8.5 Revenue/Cost Ratio

One measure of the financial performance of a system is the revenue/cost (R/C) ratio, which is the percentage of operating costs recovered from passenger revenues. All Canadian transit systems operate at a deficit with the balance of funding coming from municipal subsidy and sometimes provincial contribution. For a system of Metrobus' size, a common target is an R/C ratio of 40 to 50 percent. **Figure 15** illustrates the R/C ratio's in Metrobus' peer group. Metrobus' R/C ratio is slightly above average for its peer group.

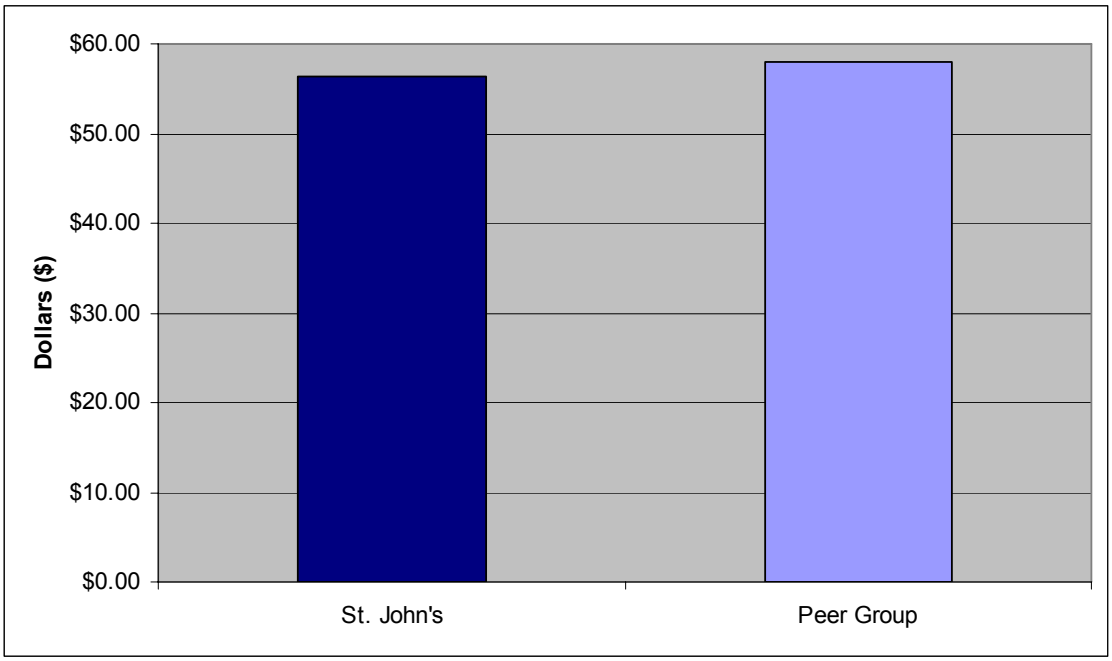
Figure 15 – Revenue/Cost Ratio



8.6 Municipal Subsidy

"Municipal subsidy per capita" is another financial measure indicating the contribution municipalities are providing to transit systems relative to their peer group. As identified in **Figure 16**, the municipal subsidy per capita provided by St. John's is only slightly below the peer group average.

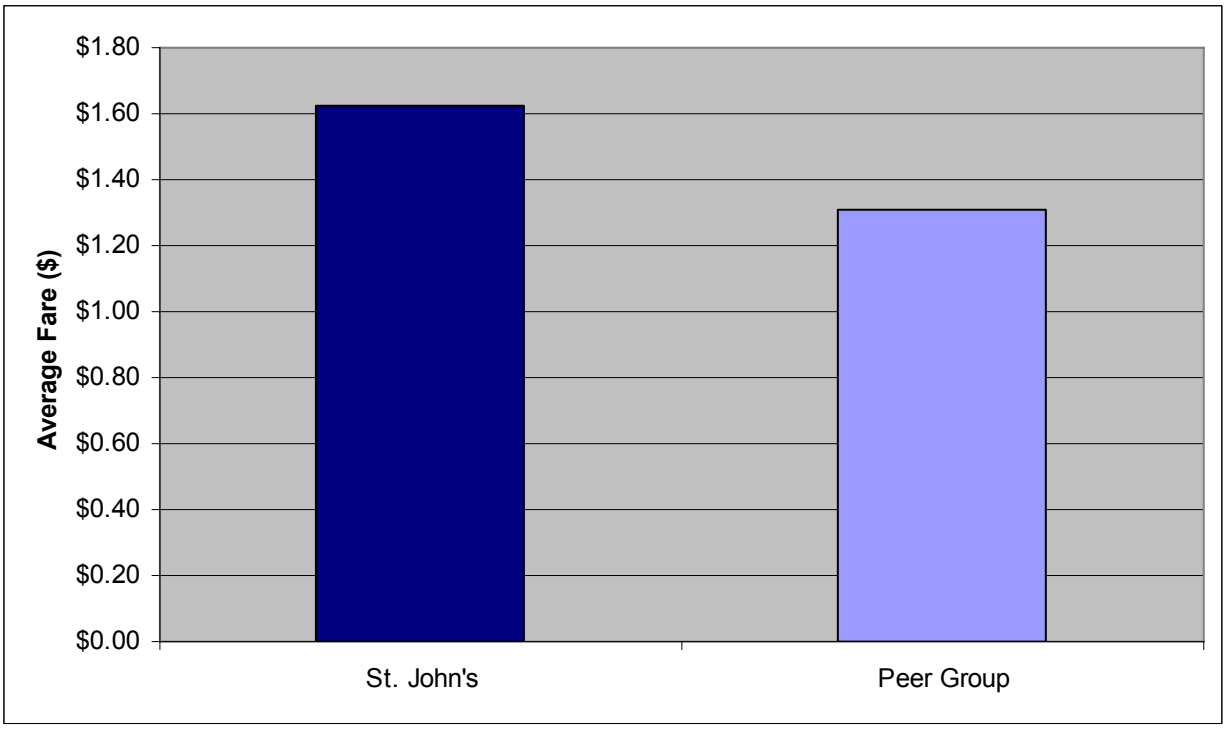
Figure 16 – Municipal Subsidy per Capita



8.7 Fare Structure

Metrobus offers several fare options to its passengers, including cash fare, multi ride and monthly passes. A semester pass targeted to post-secondary students is available at a cost of $245 for 4 months. Metrobus' average fare is $1.63, which is higher than the peer group average of $1.32. The peer group average fare ranges from $0.94 to $2.36. Average fare is calculated by dividing passenger revenue by number of revenue passengers and is shown in **Figure 17**.

Figure 17 – Average Fare



The fare options provided in St. John's relative to its peer group are illustrated in **Table 12**. Cash fares in St. John's are generally in line with the select systems from the peer group. The exception is child (youth) cash fares which are lower as most other municipalities charge the same cash fare for all users. Ticket prices and monthly passes are generally lower in St. John's than the select systems from the peer group. The exception is adult tickets/passes which are higher as again most municipalities charge the same price for all users.

Table 12 – Fare Structure (2008)

Fare Type	St. John's*	Moncton**	Saint John	Barrie	Guelph	Thunder Bay	Average
Cash Fares							
Adult	$2.25	$2.00	$2.25	$2.50	$2.25	$2.35	$2.27
Child (Youths)	$1.75	$2.00	$2.00	$2.50	-	$2.35	$2.12
Student	–	$2.00	$2.25	$2.50	$2.25	$2.35	$2.27
Senior	$2.25	$2.00	$2.00	$2.25	$2.25	$2.35	$2.18
Tickets (Unit Price)							
Adult	$2.00	$1.80	$1.75	$2.20	$1.95	$1.75	$1.91
Child (Youths)	$1.50	$1.80	$1.50	$1.90	-	$1.75	$1.69
Student	–	$1.80	$1.50	$1.90	$1.60	$1.75	$1.71
Senior	$1.50	$1.80	$1.50	$1.90	$1.60	$1.75	$1.68

Fare Type	St. John's*	Moncton**	Saint John	Barrie	Guelph	Thunder Bay	Average
Monthly Pass							
Adult	$70.00	$58.00	$59.00	$70.00	$63.00	$67.00	$64.50
Child (Youths)	$45.00	$44.00	$39.00	$47.50	-	$57.00	$46.50
Student	–	$44.00	$49.00	$53.50	$57.00	$57.00	$52.10
Senior	$45.00	$44.00	$39.00	$47.50	$52.00	$57.00	$47.42

** - St. John's has a student semester pass for $245*
*** - Moncton - Punch Pass: 20 for $34.50*

8.8 Cost Effectiveness

Cost effectiveness is measured by the total direct operating expense divided by regular service passenger trips (the cost to operate the service per passenger) or by direct operating expenses divided by revenue service hours.

Figure 18 illustrates the cost effectiveness of Metrobus relative to its peer group. The Metrobus cost of $4.11 per passenger is above the average of $3.66. The highest in the peer group is Wood Buffalo at $11.01.

Figure 18 – Total Direct Operating Expenses per Regular Service Passenger

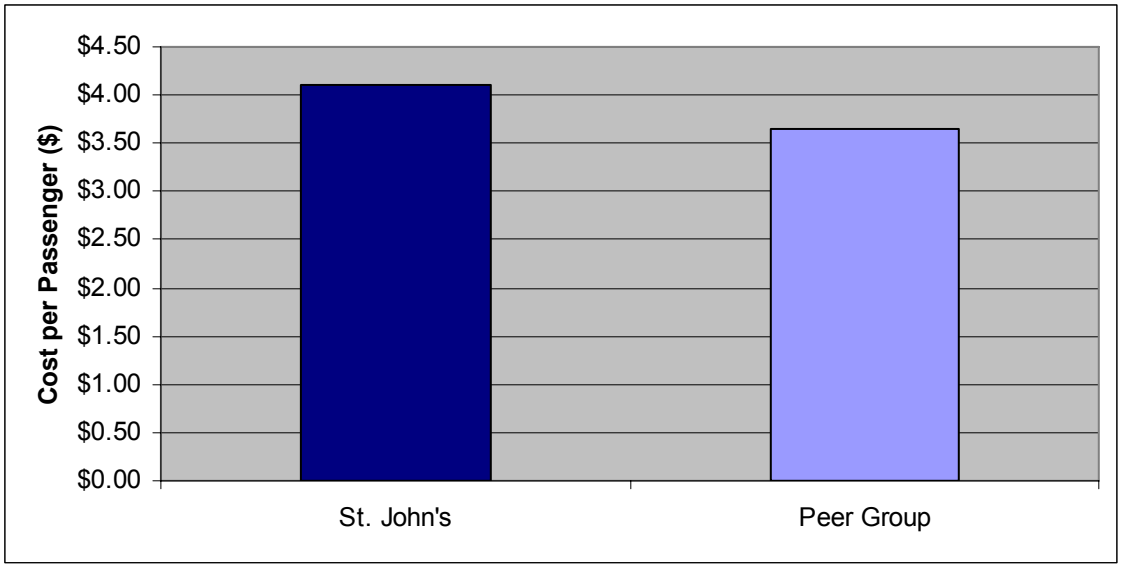
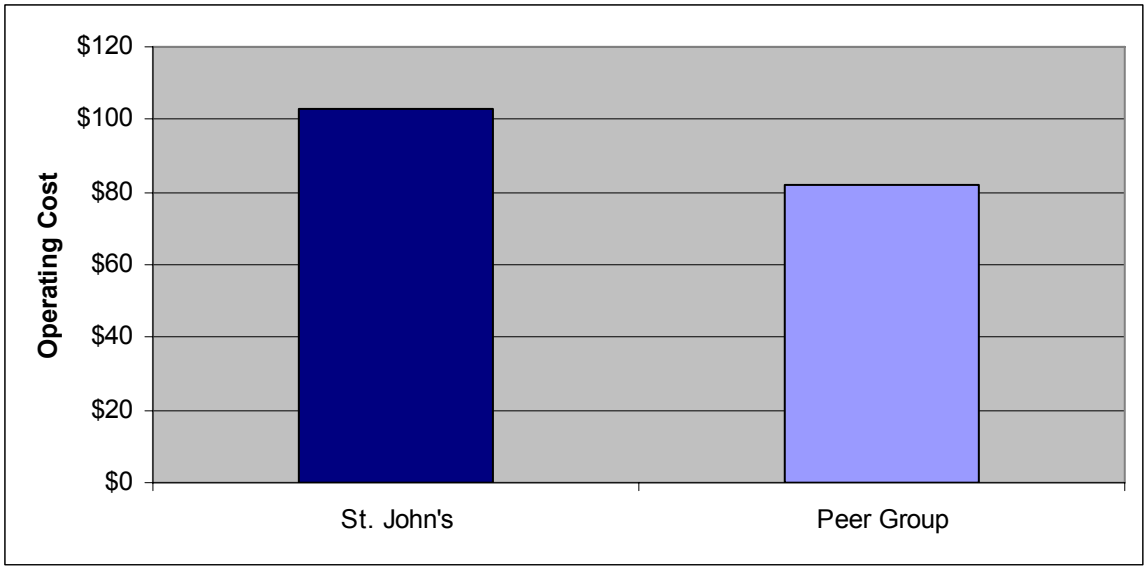


Figure 19 illustrates direct operating costs per revenue service hours (which takes into account the efficiency of existing operations). Metrobus is also above the peer group average in this category, partly due to higher fuel prices and taxes in Newfoundland and Labrador.

Figure 19 – Total Direct Operating Expenses per Revenue Service Hour



9.0 EXTERNAL TRENDS

A number of national and local trends which may influence future transit use are identified here as both potential opportunities and challenges for Metrobus.

9.1 Opportunities

9.1.1 Ridership and Transit Investment are Growing

In many parts of the country, public transit is in a stronger position today that it has been since the 1950's. Ridership is growing, with a record ridership across Canada in 2007 of 1.76 billion trips which was a 3.1 percent increase over 2006 (CUTA Transit Vision 2040). The environmental benefits of transit are widely recognized, and transit capital investment by federal and many provincial governments has surged over the past five years. The provincial investment represents a recovery from diminished funding in the 1990s, while federal funding for transit projects is a new phenomenon, increasing from zero in 2001 to $240 million in 2005, and over $600 million in 2007 (CUTA Transit Vision 2040). Funding is particularly significant in Ontario, where the provincial government provides 3 cents a litre from the gas tax to public transit systems. This funding is for both operating and capital costs and is designed to support ridership growth. Therefore, provincial funding is considered an addition to (not a replacement of) municipal contributions. This type of funding has gone a long way to support ridership growth in Ontario.

In Newfoundland Labrador, the province currently does not provide funding for public transit. This reduces the ability for transit ridership growth through improvements in service. Several policies and programs of the province are related to environmental sustainability but the role that transit can play in achieving this is not fully appreciated and this has not translated to a financial contribution toward improved transit operations.

The federal government is directing some gas tax revenues towards infrastructure through a federal-provincial agreement. However, none of this funding was provided to Metrobus to support system expansion/maintenance. Metrobus did receive money through the federal Public Transit Capital Trust and has used this money to invest in their new transit garage.

9.1.2 Advanced Technologies

Transit has been benefiting from advances in information and communications technologies, particularly in the areas of customer information, fare systems, and service control. Access to the internet has enabled personalized trip planning to be offered, increasing customer convenience and reducing operating costs. Access to real-time information through mobile devices has also made the use of transit more convenient (CUTA Transit Vision 2040).

Metrobus is a transit leader in the adoption of new technologies with features such as the M-Card and a very advanced web site. Metrobus recently implemented an online trip planner and also provides real-time updates via its website and mobile notifications for users. It is important to note that while technology improvements are important to enhance the users' experience, it does not replace the desirable service level improvements (i.e. speed, frequency, hours of service) as the key factors in ridership growth.

9.1.3 Aging Population

The elderly are an increasingly prominent segment of society and they will expect to be socially and economically active and independent. Many will work longer, by choice and by need. Most will be accustomed to driving and many will live in areas that are currently poorly served by transit. While active, aging seniors will require support and will bring higher expectations about the quality of transportation services offered (CUTA Transit Vision 2040).

The largest population group in the Northeast Avalon Region has moved from 20-24 in 1986 to 40-44 in 2006. It is expected to move to the 50-54 group by 2016 and 60-64 by 2026. The '60 and over' population has seen a striking growth rate from 12 percent of the total population in 1986, to 17 percent in 2006 with expected further growth to 23 percent by 2016 and 30 percent by 2026 (Unpublished Newfoundland and Labrador Department of Municipal Affairs Report, 2009).

With the City's total population expected to remain stable for the foreseeable future, the rapid growth in the senior's population has major implications for Metrobus, as this group is characterised by increasing mobility issues.

The relationship between the incidence of disability and age can be demonstrated using data from the Participation and Activity Limitation Survey (PALS) data collected by Statistics Canada every five years. Data from the 2001 survey has been used in this report as complete data from the 2006 survey is not available. It is noted that in the PALS surveys, a disability is defined as a condition that limits everyday activities because of a condition or health problem. It is recognized that this is a broad definition of disability and would include many individuals who do not require specialized transit for travel.

Table 13 shows the incidence of disability for different age groups. This data clearly indicates the increasing incidence of disability among older population groups, with the incidence of disability among persons 75 and older being over four times that of the total population.

Table 13 – Incident of Disability by Age Group (2001)

Age Group	Percent of Total Population with Disabilities
0 - 14 years	3.3%
15 to 64 years	9.9%
65 to 74 years	31.2%
75 + years	53.3%
Total Population	12.4%

It is important that transit service is in place to provide the trip making options that will be needed by seniors. In many communities a 'family of services' approach is being adopted to ensure that increasing seniors travel can be accommodated in the most efficient and cost effective manner. This is further discussed in **Section 15.0**.

9.1.4 Urban Lifestyle will be Increasingly Popular

The trend to urban living will continue as barriers to infill and greater density are reduced, enabling improved urban services and making condominium living a more common lifestyle choice for all

sectors of society (particularly with a trend towards few occupants per household) (CUTA Transit Vision 2040).

In St. John's, the housing demand in the short term is expected to continue to be dominated by single detached housing. The major subdivision applications are at the outskirts of the City in areas such as the Goulds, Kilbride, and Airport Heights. However, in the long term as the population ages and household size decreases, it is expected that there will be a stronger desire for condominium urban living, where amenities will be more easily accessible and home maintenance will be reduced. Land has been set aside for higher density development in Paradise that will be developed based on market demand (Unpublished Newfoundland and Labrador Department of Municipal Affairs Report, 2009).

An apartment market exists in St. John's and the central area contains a significant concentration of duplexes (historic single family dwellings divided into two units) (Unpublished Newfoundland and Labrador Department of Municipal Affairs Report, 2009). However, the central areas in St. John's and Mount Pearl have a stable population and significant medium to high density developments have not been identified (with the exception of the redevelopment of the former military base by Canada Lands and a few smaller developments such as a mixed use residential area in Pleasantville). There is an opportunity to cater to high density mixed use urban living opportunities for the increasingly aging population and their small households.

9.2 Challenges

9.2.1 Environmental Issues and Public Awareness

Transportation is the second largest source of greenhouse gas (GHG) emissions in Canada. It represents 27 percent of total GHG emissions, a share expected to remain constant until 2020. However, emissions for the transportation sector are expected to increase by 31 percent between 2006 and 2030 (CUTA Transit Vision 2040).

In the province of Newfoundland and Labrador, the percent of GHG emissions from transportation is even higher, at 37 percent (2007 Energy Plan, Province of Newfoundland and Labrador).

Growing support for sustainable policies and practices, along with increasing constraints, will lead to a greater willingness to adopt lifestyle changes. Walking and cycling will become more popular and better integrated into our lifestyles as their benefits for personal health and quality of life are more valued (CUTA Transit Vision 2040).

The impacts of transit on the environment have long been recognized. While the environmental benefits of public transit are widely accepted, attitudes are changing towards the traditional transit bus, and acceptance of its noise, vibration and emissions is decreasing (CUTA Transit Vision 2040). In St. John's, this recognition of the environmental benefits of public transit is not as strong, however, the need for the service is recognized from an accessibility perspective.

Experience with alternative fuels has been mixed and progress slow. The widespread use of bio-diesel and diesel-electric hybrid buses are examples of this (CUTA Transit Vision 2040). It is important for Metrobus to recognize this growing trend and continue with the purchase of hybrid buses and aggressive marketing highlighting the environmental benefits of mass transportation.

"Clean cars" will become a market force and major public policy objective, possibly undercutting transit's status as a green alternative (CUTA Transit Vision 2040). Many automobile manufacturers

are spending significant resources on developing hybrid and electric cars. As these hybrid and electric cars become more technologically advanced and affordable, consumers may begin to view driving their low/zero emission vehicles as a most environmentally friendly option. Consumer acceptance of diesel buses will continue to decrease.

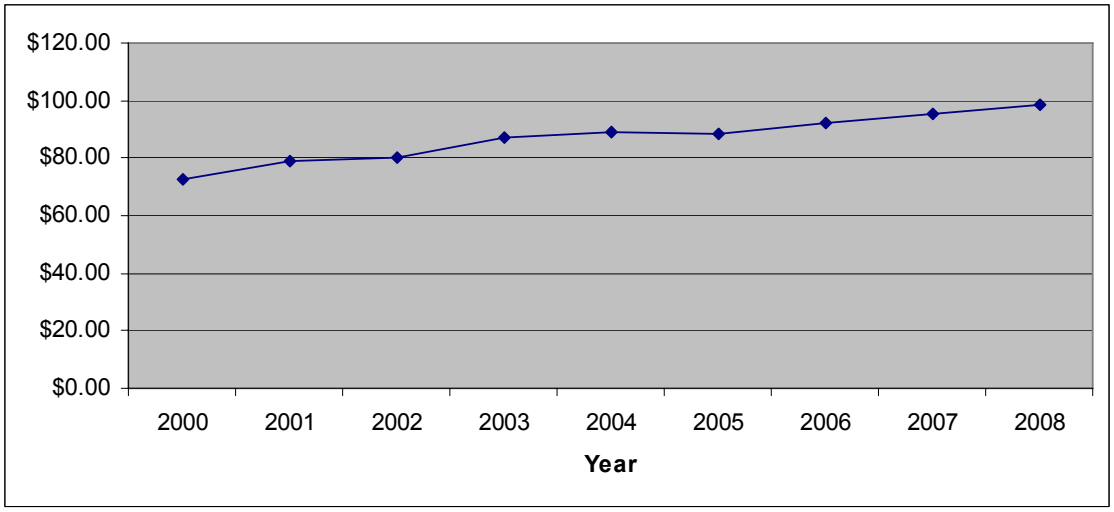
The Province has taken this approach towards GHG reduction targets in its 2005 Climate Change Action Plan and its 2007 Energy Plan. Transit is not seen as a key to reducing provincial GHG emissions due to the rural nature and limited public transit systems in the province. As a result, some of the key recommendations in the Energy Plan are focused on influencing individuals concerning vehicle purchases, driving habits and distances travelled. This includes consideration of rebates to encourage the purchase of fuel efficient vehicles such as hybrids and diesels (i.e. tax rebates or a scaled annual license fee for vehicles based on energy efficiency), the establishment of idle free zones, and the development of commuter parking areas at key junctions to encourage car pooling.

9.2.2 Rapidly Rising Operating Costs

Transit operating costs have been growing faster than inflation. Newer, more complex and heavier buses are more expensive to maintain and use more fuel, and customer expectations have grown. Employee wages and benefits are also increasing industry wide, resulting in higher overall operating costs. Over the last decade, the cost per vehicle hour has risen by 10 percent in real terms (CUTA Transit Vision 2040).

This is also the case in St. John's. **Figure 20** illustrates the cost efficiency of Metrobus since 2000. In Metrobus' case, Total Direct Operating Expenses / Total Vehicle Hours increased by 35 percent in this 8 year span.

Figure 20 – Total Direct Operating Expenses/Revenue Vehicle Hour



9.2.3 Mobility Constraints and Quality of Life

Continuation of current land use trends will lead to a further dispersal of origins and destinations, longer trip lengths and rising travel times and costs. The conflict between the demand for independent car-based mobility and the physical limitations of our urban environments will grow. Congestion and delay will increase while parking will become more scarce and costly. While these

trends will make public transit more attractive relative to the private automobile, people's travel behavior will be very difficult to change (CUTA Transit Vision 2040).

In St. John's, general road congestion is not a significant issue, however, as the population continues to grow, there will be higher demands placed on existing roads and highways. Given that the distribution of growth is occurring outside of Metrobus' service area, it will become increasingly difficult to service this demand via transit.

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PART D: STRATEGIC DIRECTIONS

10.0 OBSERVATIONS ON ROUTE STRUCTURE AND TRANSIT OPERATIONS

During the course of this study and based on the experience of various team members, a number of observations were made and improvements proposed which are summarized in this section. Overall, the basic service structure (routes, schedules, level of service) seems well accepted by the transit users and a major shift from the 2007 service design is not recommended at this time. However, it is also recognized that external factors are a major cause of declining ridership and this trend may continue. Two general themes emerge to promote an increase in transit ridership: increase the availability of service and increase the level of service provided. Each of these themes involves some future reorientation in service structure. At the same time, limited funding is an issue and moving forward requires innovative strategies to deliver quality transit services in a cost effective manner with continued support from the city and greater St. John's area to meet ridership growth targets.

The following comments should be considered as opportunities to improve the system with a major operational review proposed in three to five years (or sooner if a major initiative such as U-Pass comes forward) as well as opportunities to rethink service delivery (i.e. the provision of a more integrated regional service).

10.1 Route Designations

Route designations provide a clear delineation of level of service that users can expect. The designations are based on overall ridership and should be continued. As an immediate step, the designation of route types should be reviewed and some adjustments made. Metrobus currently provides three types of routes based on overall performance:

- Base Routes: 15 minute peak frequency, all day service;
- Primary Routes: 30 minute peak frequency, all day service; and
- Secondary Routes: 60 minute peak frequency, service until 6:30pm.

A sample of daily ridership per route was reviewed as part of the on-board passenger survey. Ridership on each route is quite varied, with Base routes generally attracting the highest ridership and Secondary Routes attracting the lowest level of ridership. Part of this is due to the attractors and primary destinations each route connects to, but some of the ridership results are also due to the level of service provided.

Based on a review of ridership, it appears that the designation of two routes should be updated, with service frequencies and service hours modified to match the new designation. Route 10 is currently categorized as a Primary Local Route. Service frequency is 30 minutes on weekdays, 30 minutes on Saturdays, and 45 minutes on Sundays. However, in terms of total daily ridership Route 10 ranks second behind Route 2. This also stresses the significance of the route in serving strong origins and destinations such as the Avalon Mall, Memorial University/Health Sciences Centre and the downtown. It is recommended that Route 10 be upgraded to a Base Route to reflect its high ridership and to potentially capture more demand. With a 15 minute frequency during peak periods, there should be a positive impact on ridership.

This recommendation would require an increase in capital (vehicle acquisition) and operating costs and should be subject to a detailed budget review.

Route 15 is designated as a Secondary Route. This route also provides service between the Avalon Mall, Memorial University/Health Sciences Centre and the downtown (using an alternate route). The route is designated as a Secondary route while service frequencies and ridership match that of a Primary Route. It is recommended that this route be officially designated as a Primary Route. While this will not impact overall revenue service hours provided, the designation will reinforce the importance of the route designation structure currently used by Metrobus in its planning decisions and service standards document.

Recommendations:

1. That Metrobus designate Route 10 and Route 15 as a Base and Primary Route respectively, including improvements to level of service where required. This is subject to budget availability.

10.2 Route Structure

The route structure is generally satisfactory and provides good coverage throughout the St. John's and Mount Pearl urban area. However, there are two observations outlined below which resulted from consultation activities and from field and secondary research, where applicable improvements are suggested.

10.2.1 Long Routes (Travel Time)

The online community survey (**Appendix A**) asked respondents about their opinions of various elements of Metrobus and what improvements they would like to see. "Travel time and route directness" rated poorly when respondents were asked to rate Metrobus elements and "shorter travel times" rated high when respondents were asked about possible improvements. This suggests that some routes are longer than they should be and there are too many transfers required to reach certain destinations.

Overall trip times by passengers are measured in several components: walk time to the transit stop, wait time at the transit stop, vehicle time while riding the bus, and walk time to a destination. If transfers are required for a trip, this adds an additional wait time for a second bus. The overall time of the trip from a passenger's perspective is the combination of the out-of-vehicle time and the in-vehicle time. This total time will influence a passenger's decision to use transit. Typically, passengers value reductions in out-of-vehicle times over in-vehicle times because of the perception that they are moving towards their destination while in the vehicle.

Transfers are a major disincentive for transit users. As well as increasing travel time, they introduce an uncertainty for users (i.e. will the connection be successful). Having to physically transfer between buses can be minimized for users by interlining routes.

WALKING DISTANCE

There is a balance to be reached between directness of the bus route and walking distance for users to the bus stops. Reduced walking distance generally means more indirect routes, as buses need to traverse more local streets to reduce walking distance. The 2007 service study looked to increase the directness of routes, which has an impact on both the number of transfers and walking distance.

Most transit system's service standards state a policy of 400 metre walking distance to a bus stop for 90 to 95 percent of residents in the urban area. The standard adopted for Metrobus is similar and states:

> ***"90% of all urban residences, places of work, secondary and post secondary schools, shopping centres, and public facilities in the urban area should be within a 400 metre distance of a bus stop during the daytime on weekdays and Saturdays, and within 800 metres of a bus stop during the late evenings and on Sundays and Holidays."***

Due to the hilly topography in many parts of the city along with the high snowfall and wind conditions in a typical winter, the walking distances under this service standard may be viewed as too onerous by a number of residents, especially with an older and aging population. However, increased coverage comes at the expense of additional transit subsidy or reduced directness of routes.

Overall, coverage (walking distance) provided by Metrobus seems to be adequate. There are certain areas in the system that would likely benefit from increased coverage, including the residential and industrial areas northeast of the downtown (east of Torbay Road), however, this is best addressed in more detailed in a comprehensive service review.

ROUTE DIRECTNESS

Most routes within the existing system are direct and provide two-way service. No changes are proposed to these routes. However, there are several one-way routes that are fairly long and which increases travel time on the inbound or outbound trip. Two primary examples are Routes 21 and 22, which provide service to Mount Pearl. Users of these routes have fairly long travel times, and this was voiced strongly by a number of stakeholders and members of the public during consultation activities. While the 2007 service review recommended modification to the routing to make it more direct, this service change was not approved by the City of Mount Pearl.

Another example in the system is service to Airport Heights (Route 14), where there is a large circuitous one-way loop that lengthens passenger travel time.

As a general practice, routes should be designed as direct two-way service with the potential for a small collection loop at the end. This is not always possible given the topography and the road network without sacrificing access/coverage. Improving route directness would involve increasing overall level of service (by increasing bus kilometres provided) or identifying alternative service delivery methods for these areas (see **Section 13.0**). These routes (14, 21 and 22[4]) should be further assessed in an upcoming operational review.

TERMINAL LOCATIONS (ROUTE STRUCTURE)

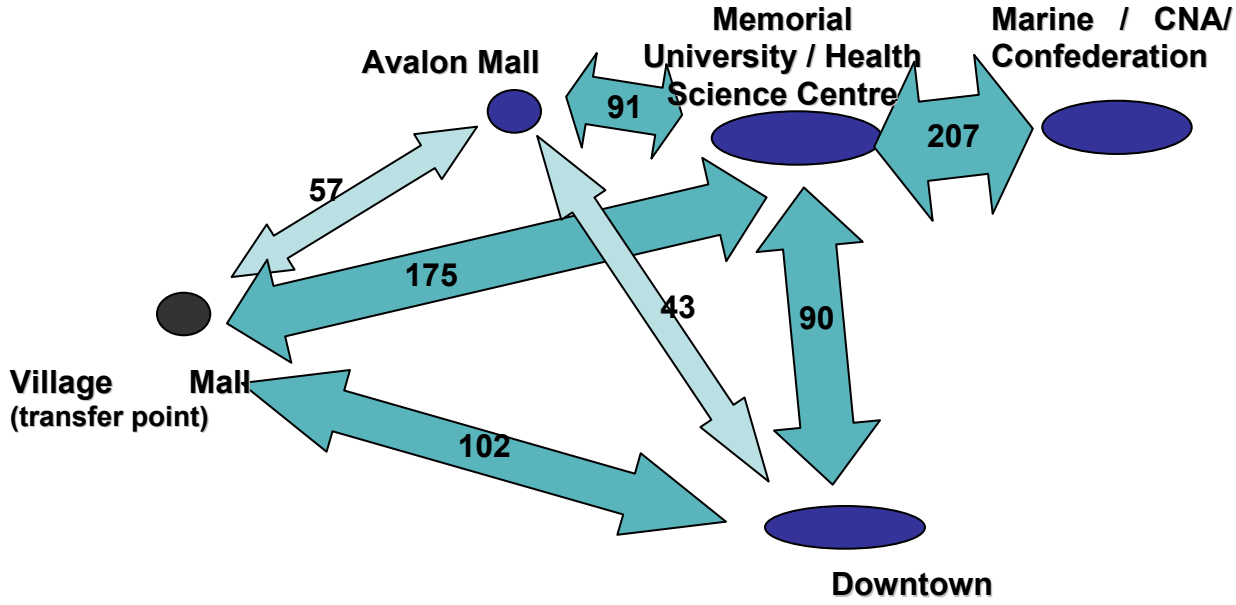
The location and design of each of the sub-terminals also has an impact on overall travel time. Terminals should serve not only as strategically located transfer points but also as key destinations.

Five key nodes or transfer points were identified as part of Metrobus' system. These are Village Shopping Centre, Avalon Mall, Memorial University/ Health Sciences Centre, Marine Institute/ Confederation Building Area and the downtown.

[4] Note: Route 21 and 27 are under the jurisdiction of the Town of Mount Pearl and any changes to the route structure would need to be approved by Town Council.

Figure 21 below illustrates passenger desire lines between these major nodes/transfer points based on the results of the one-day on-board passenger survey. This includes passengers from zones on the periphery destined to one of these zones. For example, passengers travelling between Mount Pearl and the downtown were added to the desire line between the Village Shopping Centre and the downtown since passengers are required to transfer at this point to access the downtown.

Figure 21 – Illustrative Route Structure (Based on Daily Passenger Demand)



The Village Shopping Centre terminal is an ideal location for capturing several routes on the periphery to allow passengers to further access any of the other nodes to the east (i.e. the downtown). This is an effective terminal location within the system and should be continued in future service designs. It also serves as a primary destination, with many passengers destined to the location for retail, commercial and employment purposes.

The Avalon Mall terminal is located at the edge of the urban area near the O'Leary Industrial Park. While the mall provides an attractive destination, its location does not serve the same 'intercept' function as the Village Shopping Centre terminal. Only Route 16 and Route 10 are located west of the terminal, with the other routes located to the south and the east. This can cause some indirect travel if the terminal is used primarily as a transfer point.

For example, Routes 19 and 12 all operate between the Village Shopping Centre and the Avalon Mall, providing a connection between the residential areas and these two destinations. However, there is no direct connection from the residential areas north of the Village Mall to the downtown or Memorial University/Health Sciences Centre, and passengers destined to these nodes are required to transfer. If a transfer is made at Avalon Mall, passengers must travel in the opposite direction to reach the transfer point before ultimately heading to their final destination. Consideration of more direct routes to these destinations should be explored to reduce overall travel time.

The highest demand is between the Marine/CNA/Confederation Building node. Both function as a destination first and a transfer facility second. Given the prominence of these locations as a destination, it may be suitable to explore one of these two areas as primary transit hub and reduce the role of Avalon Mall.

Route 10 is a well used service between the Avalon Mall and the downtown. However, to access the downtown, the route first goes through Memorial University and the Health Sciences Centre, adding real and perceived travel time for passengers destined to the downtown. As seen in **Figure 21**, while the strongest demand from the north to the downtown is from Memorial University/Health Science Centre and Marine College/CNA/Confederation Building, there is still some demand from the Avalon Mall, and the potential for a direct route from the Avalon Mall to the downtown should also be considered.

Overall, the route structure should streamline services between major origin-destination pairs as much as possible to avoid multiple transfers and reduce travel time. As the system grows, direct two-way service between each of the origin-destination pairs identified in **Figure 21** should be considered. While some of these travel demands are well serviced by existing routes (i.e. Route 1 and 2), there may be additional routes or modifications to consider. In particular, the role of Avalon Mall as a transfer facility should be re-examined in a follow-up service review with a potential to relocate this facility at the Memorial University /Confederation Building node.

TRANSFERS

Waiting time typically has the largest negative impact on ridership since the transit user is no closer to getting to their destination, no matter how long they wait. Wait time consists of both waiting for the initial bus and waiting for a transferring bus and is influenced by overall frequency and the need to transfer.

The time spent waiting at bus stops/terminals for transfers and the need for transfers to get from origin to destination greatly influence the satisfaction of a transit passenger's trip. All surveys (online, Memorial University student, CNA student, and on-board) queried respondents on the number of transfers they have to make on their primary (most prevalent) or current trip. The results are as follows:

- online community survey - 48 percent require transfer(s);
- on-board passenger survey – 40 percent require 1 transfer, 6 percent require 2 transfers;
- CNA student survey – 45 percent require 1 transfer; and
- Memorial University student survey – 24 percent require 1 transfer, 3 percent require 2 transfers, and 1 percent requires more than 2 transfers.

This is considered a high number of transfers and opportunities to reduce the number of transfers or the impact of transfers were explored. There are three ways to minimize the impact of transfers:

1. Arrange for timed transfers at terminals were possible;
2. Avoid the transfer altogether; and
3. Interline routes with a high number of transfers.

For passengers requiring a transfer, transfer-waiting time is shown to be of greater importance than the initial wait time for the first bus. This is because with a reliable service, the initial wait time is within a passenger's control (they can adjust their time of arrival at the transit stop). In contrast, waiting time at the transfer point cannot be controlled by the passenger unless the schedule provides timed transfers (routes depart a transfer point at the same time).

Most routes accommodate timed transfers at the Avalon Mall and Village Shopping Centre terminals. These terminals provide a major transfer point for passengers residing in the periphery of the city wanting to access a final destination in the central area of St. John's. In the downtown, many transfers are not timed, requiring passengers to walk a longer distance to their destination or wait for the transferring bus. Options to address this situation are discussed in **Section 12.0** of this report.

While a service structure of providing 'timed transfers' is a good step in reducing overall travel time, the need for the transfer itself is an issue that should be addressed moving forward. This is particularly the case at the Village Shopping Centre, where most routes end at the terminal (with the exception of Route 6 which continues through the terminal). This forces all passengers to get off their bus and transfer onto another route if their destination is not the Village Shopping Centre itself.

The agreement between Mount Pearl and the City of St. John's forces passengers on the two routes that provide service in Mount Pearl (Route 21 and 22) to transfer at the Village Shopping Centre Terminal. Correcting this situation would require an amendment to the current operating agreement and is recommended. This situation is further discussed in **Section 18.0** of this report.

Avoiding the transfer altogether may involve a significant modification of the route structure which is not recommended at this time. The practice of providing sub-terminals is seen as effective, particularly given the large and narrow (north to south) geography of the transit service area. St. John's also has several dominant destinations outside of the downtown (i.e. Memorial University, CNA, hospital, Confederation Building) and reorienting all routes to one central location would likely create the need for more transfers. The potential of moving the primary transfer point in the north from Avalon Mall to Memorial University/Confederation Building node should be explored to minimize transfers.

Interlining routes can be a benefit to users and an effective strategy for Metrobus, which does not currently conduct this practice. Interlining routes allows some passengers to avoid physical transfers, as buses simply change route signs at the terminal, allowing passengers transferring to the interlined route to remain on board their bus. This reduces transfer anxiety and is particularly beneficial during inclement weather conditions.

The other benefit of interlining is to improve driver operating conditions on routes with poor on-time performance. Interlining allows a 'tight' route to be matched with a route with more flexibility in its schedule, allowing the driver to recover the schedule on the alternate run. Interlining generally requires routes to run on a common frequency which has an impact on which routes can be interlined.

To determine the appropriate routes to be interlined, Metrobus should conduct a transfer trace to determine which routes have a high number of passengers transferring between them. Interlined pairs should be selected to maximize passenger convenience (by minimizing physical transfers), obtain productivity in driver scheduling and provide relief for routes with tight run times. There are few drawbacks to interlining routes and this is a common practice in most systems.

While Metrobus currently does not interline any routes, certain routes function in a similar nature to an interlined route pair. For example, Route 2 provides connection between the Avalon Mall Terminal, the Torbay Mall Terminal, two Downtown transfer points, and the Village Shopping Centre Terminal. This route is essentially two routes combined into one, covering a large

geographic area in St. John's and avoiding the need for passengers to physically transfer at many terminals. Interlining other routes would provide similar benefits.

SERVICE TO THE AIRPORT

Provision of public transit service to the St. John's International Airport was identified through the consultation process as a potential direction for Metrobus. The airport employs 100 people directly, with another 400 employed by companies operating at the airport. Passenger traffic at the airport has been growing rapidly. Traffic in recent years has reached 1.2 million passengers annually with plans to increase passenger capacity to 2 million and introduce additional parking.

The challenge of servicing the airport with transit is in the ability to attract airline passengers. Many recreational travellers have heavy luggage that is more suitable to taxi than transit. Business travellers tend to be on expenses and less inclined to use transit. Ridership potential at airports also tends to fluctuate and peak at certain periods of the day. This may not be compatible with scheduled fixed route service and the amount of airline passenger traffic may not be high enough to support a 30 minute frequency of transit service. Experience with transit service to other Canadian airports should be reviewed.

Currently, Route 14 approaches the Airport, but does not connect directly to the terminal building. Providing a connection might be feasible, but the focus should be on accommodating employees (including employees in the surrounding area) rather than airline passengers. An initial trial for this service (to test the market) may be a zone bus application which includes the Airport Heights neighbourhood (see **Section 13.1**) or as an Industrial Special application (see **Section 13.3**). For the above reasons, service to the airport is not considered a high priority for ridership growth and should be addressed in a future operational review.

Recommendations:

1. Metrobus should further review corridor service opportunities between each of the major nodes within the system, including the potential provision of more direct two-way service;
2. Metrobus should explore the opportunity to increase the importance of the Memorial University/Confederation Building node as a transfer point given the dominance of this location as a key destination in the system. This would involve a reduction in the significance of the Avalon Mall terminal as a transfer point (however, maintaining this location as a key destination);
3. Metrobus should explore opportunities to interline routes at each of the terminals (based on the results of a transfer trace and assessment of schedule compatibility). This should include developing an agreement to have full integration between Mount Pearl routes and routes within St. John's (avoiding a forced transfer); and
4. Metrobus should explore the feasibility of implementing a transit service to/from St. John's International Airport. Options include express bus connecting to the downtown, Memorial University /Confederation Building, etc., extension of existing routes, zone bus or an industrial special. This is considered a medium-term initiative to be completed in conjunction with a future operational review update.

10.3 Hours of Service

Analysis of the benchmark review in **Section 8.0** reveals that the service hours (revenue vehicle hours/capita) for Metrobus are higher than the Atlantic Canada peer group average but below its

Population Group 3 peer group average. When passengers were asked to rate their satisfaction with specific elements of Metrobus as part of the on-board passenger survey, service hours received a significantly lower score than the other system characteristics. Twenty-nine (29) percent of respondents rated service hours as "very poor", while another 22 percent rated it as "poor". Respondents to the online community survey were also unhappy with the hours of service, particularly for weekend service. Thirty-eight (38) percent of respondents rated weekend service as "very poor", while another 34 percent rated it "poor". When asked what improvements would get them to use Metrobus more often, respondents noted:

- Increased bus service on Saturdays;
- Increased bus service on Sundays/Holidays; and
- Later end of service on weekends.

Overall, service hours for Base and Primary routes seem adequate and in line with peer systems. On Secondary routes, service ends at 6:30pm on weekdays and Saturdays, and many do not operate on Sundays. For passengers using the system outside of typical work times, the system becomes a challenge to use. In many systems with high levels of post-secondary riders, there is significant demand for late evening services and sometimes these services are provided as separately funded semi express services.

While extending services on weekends and evenings will not necessarily generate significant ridership, it is important to note that effective service during the off-peak periods can have a medium to long term positive impact on peak period ridership, as it provides passengers additional flexibility if they ever need to take a bus outside of their regular commuting hours. There are also a number of shift workers, students, seniors and 'stay at home' parents that would benefit from improved off-peak service.

The choice to extend service is a balance between level of service and cost effectiveness. Ridership during evenings and weekends is typically low, and the decision should be made based on minimum passenger boardings or a policy decision to achieve a minimum level of service for passengers.

Given the limited resources available to Metrobus, it is not recommended that fixed route service be extended on Secondary routes at this time. However, there may be an opportunity to look at servicing the evening period using low demand service delivery options such as TransCab or Zone Bus which are described in more detail in **Section 13.1** of this report.

In the 2-3 year time frame (or sooner with the implementation of a U-Pass program), Metrobus should reassess service hours as part of an overall operational review.

Recommendations:

1. Metrobus should maintain existing service hours over the next two years for fixed route service; and
2. Metrobus should explore opportunities to extend service hours in areas covered by Secondary Routes using special applications for low demand periods or areas.

10.4 Service Frequency

Existing service frequencies are quite varied with buses operating as low as 15 and as high as 60 minutes apart. Service frequencies over 30 minutes are considered very inconvenient for passengers in most urban settings. Based on studies completed in other North American transit systems,

frequency changes typically have a service elasticity of between +0.3 to +0.5. This means that a doubling of service frequency (i.e. from 1 bus an hour to 2 buses an hour) would increase ridership on that route by 30 to 50 percent. When frequency improvements occur on previously infrequent service (i.e. hourly service to half-hour service), ridership impacts are typically greater than when the same percentage change occurs in a service that is already frequent (i.e. 10 minute service to 5 minute service). If the area being served has very low population density then alternative techniques to scheduled fixed route service should be considered (see **Section 13.0**).

While level of service improvements can have impacts on overall municipal subsidy, improving the level of service is key to responding to the external pressures facing Metrobus. To increase ridership growth, Metrobus must be more than about providing accessibility for those in need, but must also be convenient and attractive for those who have a transportation choice. A realistic goal is not to replace the private vehicle, but to reduce the number of vehicles required in a typical household (i.e. move from a three car household to a two car household) by developing an acceptable transit alternative.

It is recommended that service frequencies not be greater than 30 minutes during weekday peak periods and during the midday off-peak on all routes. This would entail an update of existing service standards and a significant increase in service on all Secondary Routes, which operate at a 60 minute peak frequency.

Financial implications of this level of investment could be mitigated through an increase in passenger revenue (due to ridership increase and/or fare adjustment), the introduction of a U-Pass or the provision of a more cost effective service delivery strategy for low demand areas which still meets the basic service standard.

While, weekend service hours are generally comparable with systems of similar size, most routes only run on a 60 minute frequency. A 60 minute service frequency is not conducive to attracting ridership even on weekends/holidays. A recent study completed for Guelph Transit (in Metrobus' peer group) recommended 30 minute weekend/holiday frequencies. Another alternative would be a TransCab or Zone Bus Strategy, outlined in **Section 13.0.**

Recommendations

1. Metrobus should develop a strategy to improve frequencies to 30 minutes for weekday peak periods and during the midday off-peak on all routes; and
2. Where peak period service does not warrant 30 minute fixed route service, Metrobus should consider the implementation of alternative service strategies such as TransCab or Zone Bus to achieve the 30 minute frequency standard at a lower cost.

10.5 Service to Post Secondary Institutions

One effective service strategy to significantly increase ridership is to expand the level of service provided to post-secondary institutions. Both Memorial University and CNA have a large potential transit market that can be capitalized on by improving service levels and better addressing demand.

A key strategy to effectively accommodate an increase in service levels is by influencing transit demand through a Universal Pass (U-Pass) program. A U-Pass program provides all enrolled students with a transit pass included as part of their tuition; and therefore the revenue required to significantly increase service levels targeted towards this market.

A U-Pass program results from a specific negotiation typically conducted among the transit system, the administration of the post-secondary institution and the student association. When implemented, all students pay a fixed amount as part of their fees and have full access to transit on a semester or annual basis. Typically, the cost is significantly discounted from a regular monthly pass because the U-Pass is universal (all students contribute to the program but not all students use the service).

A student referendum is required to launch the initiative and experience has shown that once implemented there is very high approval rating by all parties. Aside from the specific benefits related to low travel cost, reduced campus parking requirements, increased location choice for student accommodations, reduction of neighbourhood issues, etc., there is the significant benefit that accrues to the environment from the growth in transit usage by post-secondary students. For transit systems, the benefit is both additional revenue and a move to **higher service levels** throughout the service area which benefits all users.

Table 14 illustrates the comparison of Metrobus with several communities that have successfully implemented a U-Pass with post-secondary institutions.

Table 14 – U-Pass Comparison (2008 data)

Municipality	Service Area Population	Ridership/ Capita	Revenue Vehicle Hours/Capita	Revenue/Cost
St. John's,	127,097	24.84	1.0	41%
Guelph, ON	120,000	44.79	1.87	39%
St. Catharines, ON	150,000	34.29	0.99	53%
North Bay, ON	49,000	37.23	1.24	52%
Halifax, NS	312,400	62.52	2.26	52%

The comparison shows that municipalities that have implemented the U-Pass have been able to achieve significantly higher service levels and utilization, with reasonable financial efficiency. In Guelph, students are very satisfied with the U-Pass and constitute approximately 57 percent of the system ridership. With an enrolment of 20,000, Guelph University is comparable to Memorial University with a 17,000 enrolment. The key difference is that Guelph University students make up 57 percent of Guelph Transit's ridership while post-secondary students in St. John's only make up 27 percent Metrobus ridership. The fare and subsequent level of service provided is a key differentiator. The Metrobus semester pass costs $245 while a one semester U-Pass in Guelph costs $62. Since the pass is universal and applied to all 20,000 students, the revenue generated was used to improve overall service levels. The program is so popular among students that in 2010 students voted 90 percent in favour of a 41 percent increase in the cost of the U-Pass to better reflect the service provided (currently $82.15 per semester).

In St. Catharines, the U-Pass was implemented in 2003. In 2002 the ridership was 3,000,000 and by 2005 ridership had increased to 4,600,000. In Halifax, average monthly transit trips by students increased from 7-8 trips to 14 trips after the first year of implementation (CUTA U-Pass Toolkit, 2004).

CNA and Memorial University students were asked about their level of interest in a U-Pass for their respective post-secondary institution. Based on the information provided, 65 percent of CNA

students responded that they would be "very interested" in exploring the implementation of a U-Pass while another 26.5 percent said that they would be "somewhat interested". At the Memorial University, the survey found that 66.6 percent of respondents would be "very interested" and another 25.1 percent of students would be "somewhat interested" in exploring the possibility of implementing the U-Pass.

U-Pass implementation generally results in a win-win-win situation among the students, administration and transit service and benefits include:

Students:

- Reduced transportation costs for current transit users;
- Opportunity to eliminate/reduce dependence on cars;
- Improved transit service levels, including weekends and evenings;
- Access to improved and more affordable housing options; and
- Contribution to sustainable environment.

Memorial University and CNA Administration:

- Reduced parking requirements and frees up space for other uses;
- Higher transit service levels available for faculty and staff;
- Reduce conflicts between community/students as off campus housing is more dispersed; and
- Contribution to sustainable environment.

Metrobus and City:

- Significant ridership growth;
- New and guaranteed revenue source (5 year contract);
- Service level expansion which benefits all users;
- Attract students to transit and develop future market;
- Improves transit's image and role in community;
- Reduced road congestion especially near Memorial University and CNA campus; and
- Potential to defer some capital expenditures (roads, parking).

Recommendations:

1. Metrobus further explore the opportunity to expand service to Memorial University and CNA to meet this high demand market; and
2. Metrobus initiate discussions with the student unions at Memorial University and CNA for the implementation of a U-Pass agreement. This will require Metrobus to establish a preliminary negotiating position with consideration given to potential service level improvements that may be required, associated costs and staffing/equipment needs and revenue requirements. A clear understanding of current revenues from students will help

guide the determination of an acceptable U-Pass pricing strategy. The program is meant to be a revenue neutral agreement between the students and Metrobus whereby the costs of any service improvements are fully compensated. Separate programs can be developed for undergraduate and graduate students. The opportunity to develop a pass program at the same time for university/college faculty and staff should also be explored.

11.0 TRANSIT PRIORITY AND SIGNAL CONTROL

While St. John's and Mount Pearl do not yet experience sustained congestion issues, the rapid population expansion outside of the Metrobus service area and the continued trend of employment growth within St. John's will see an increase in overall congestion on a number of the major arterial roads and highways during peak periods. Traffic delays can reduce the on-time performance and reliability of transit service (i.e. delays, missed transfers), limit route expansion opportunities, and ultimately may require the purchase of additional buses to address demand and maintain service standards.

At this time, the congestion levels and transit service levels (frequency and ridership) on Metrobus do not warrant rapid transit initiatives (i.e. Bus Rapid Transit) that are used in systems such as Halifax or Ottawa, but there are some site specific areas where cost effective transit priority solutions can improve the overall level of transit service, mitigate bus delays and reduce operating costs in a growing system. This was a key recommendation in the 2007 Transit Service Review.

For all routes, transit priority solutions would increase the reliability of the system and increase overall schedule adherence. Such measures are especially important for the road network in the vicinity of transit terminals such as Village Mall, Avalon Mall, Memorial University and the downtown.

Based on the assessment above, it is recommended that Metrobus work with the Engineering Department to identify areas of potential bus delay where transit priority improvements could help increase the reliability and productivity of services. While an extensive transit priority system is not recommended at this time, initial improvements could include:

- the development of queue jump lanes at congested intersections to allow buses to 'jump the queue';
- minor geometric design improvements at intersections where buses have difficulty making turning movements;
- left turn signal priority for transit vehicles in the vicinity of existing terminals and transfer points;
- site specific access/egress improvements where transit vehicles are off the public roadway (e.g. at the Village Mall or Avalon Mall);
- shifting bus stop locations where transit vehicles have difficulty merging back into lanes of traffic or moving stops to the far side of intersections where there are long right turn vehicle queues in front of a transit stop (to avoid transit vehicles having to stop twice);
- on-street parking restrictions and enforcement at locations where parked vehicles can block buses from accessing/egressing stops or effectively manoeuvring on the road network;
- traffic signal priority for approaching buses (in the medium to long-term) coordinated with the city's signal system; and
- allowing 'bus only' left turns from through lanes at specific signalized intersections.

Typically, transit priority measures are most effective at high bus volume locations, terminals and areas of significant traffic delay. A comprehensive study of delay to transit vehicles would be the best means to identify and prioritize candidate locations for transit priority measures.

The following table highlights the range of the costs associated with transit priority measures.

Table 15 – Transit Priority Typical Costs

Transit Priority Measure	Estimated Cost
Installation of traffic control loops to allow traffic signal pre-emption where no intersection traffic controller upgrade is required.	$2,000- $6,000
Pavement marking and signage modification to designate a right turn only lane to operate with "buses excepted" (e.g. where there are two far-sided receiving lanes)	$3,000 - $5,000
Intersection traffic controller and cabinet and cabinet upgrade and installation of traffic control loops to allow for Transit Signal Priority (TSP)	$6,000 - $10,000
Queue jump requiring pavement marking and signage modifications AND upgrade to intersection traffic controller and installation of traffic control loops	$25,000 - $35,000
Queue jump requiring relocation of traffic signal poles and other construction work.	$100,000

In addition to this, each bus would need to be equipped with a GPS unit or Infrared technology to communicate with the traffic control system. The cost of this technology can range between $3,000 and $5,000 per bus.

While implementing transit priority measures will be increasingly important as Metrobus grows, it is not considered an immediate priority. In the vicinity of major terminals, geometric improvements, parking restrictions and other passive transit priority solutions (i.e. installation of a general traffic signal) should be considered in the immediate term.

Recommendations:

1. That Metrobus work with the City's Engineering Department to identify opportunities where cost effective transit priority solutions can improve the overall level of transit service, mitigate bus delays and reduce costs in a growing system;
2. That the development of projects for St. John's road and traffic capital programs include identification of and provision for potential transit priority measures as appropriate; and
3. That the installation of transit priority measures in the vicinity of existing terminals be fast tracked to test the concept and productivity benefits.

12.0 TERMINAL AND BUS STOP DESIGN

12.1 Transit Terminals

The design and operation of the transit terminals at Village Shopping Centre, Avalon Mall, Memorial University and the downtown could be improved. While the location of these terminals is seen as effective, the overall design of the terminals should be reviewed. Some concerns are:

- Unproductive time for buses to access and egress the terminals;
- Passenger confusion in locating buses;
- Potential safety issues with bus/pedestrian and bus/vehicle conflicts; and
- Lack of driver amenities and limited passenger amenities.

The safe, effective and efficient design of a transit terminal requires that buses always move in a forward direction (flow through operation), that bus bays are assigned to specific routes for ease of passenger access/transfers, that passenger and pedestrian movements are accommodated (to the maximum extent possible) without crossing active traffic lanes or between buses and that buses are able to move effectively to and from the road network, perhaps using transit priority measures. **Appendix G** contains some layout drawings of efficient off street terminal designs and further discussion of these design principles.

When a transit terminal is located on private property there is usually a formal agreement between transit and the property owner setting out terms and conditions for operations, maintenance and modifications. In many cases transit is fully integrated into the surrounding land use functions and the terminal becomes a 'mobility hub' integrating various transportation modes and acting as a catalyst for adjacent development that is transit supportive.

AVALON MALL AND VILLAGE SHOPPING CENTRE TERMINALS

The experience of using either the Village or Avalon terminals is particularly poor from a passenger perspective and is certainly a disincentive to ridership growth. From personal observation the drivers do an excellent job of assisting passengers at these terminals.

In both cases, there are not enough bays to accommodate all the buses that use the terminal. As a result, buses park beside each other and passengers are forced to walk between and behind buses to transfer. This is considered an unsafe situation for passengers, particularly as buses pull in and out of the terminal. Since buses do not always stop in the same location, this also creates some passenger confusion regarding transferring to another bus. Finally, since many transfers are made off the paved asphalt (instead of a raised platform), accessibility for persons with mobility issues are compromised. This becomes an increasing concern with an aging population and reduces the effectiveness of low floor buses.

From a system productivity perspective, the time lost in these inefficient terminal operations is a significant burden. At the Avalon Mall, buses must pass by a very busy store which has a number of customers crossing the travel lane. There is also a significant queue that can form at the exit of the mall, particularly with buses that need to make a left turn. Transit priority features at this exit would reduce overall delay and increase reliability at this intersection.

At the Village Shopping Centre, the primary concerns are the inadequate platform size and the excessive queuing/time loss in getting buses back on the road. Three rows of buses are parked at this terminal, with only one row adjacent to a platform. A new design would accommodate all buses on a single platform. The location of the terminal is ideal due to the proximity to the mall entrance and the close proximity to the surrounding arterial road network. Transit signal priority features at the mall exit (at Hamlyn Road) and at Topsail Road should be considered to reduce delays and improve reliability.

Since transfer locations are fundamental to system design and the capacity requirements are well understood, it is recommended that Metrobus initiate feasibility studies, in cooperation with the property owners, to establish improvement opportunities at each location. It should be noted that if the prominence of the Avalon Mall as a transfer facility is reduced (as per **Section 10.2**), the number of bays in the existing facility may be appropriate and the study would focus on circulation and transit priority measures.

MEMORIAL UNIVERSITY TERMINAL

The Memorial University Terminal is located at the entrance of the University Centre on Arctic Avenue. Buses pull right to the front door of the building, allowing passengers to wait inside the building for their next bus. There are some pedestrian and vehicle conflicts at this location which can slow down buses, however, no incidents were reported by drivers. Consideration, however, should be given to making this a 'bus only' location, and to relocate areas for passenger drop off and pick ups.

A challenge for Metrobus with this terminal location occurs when outbound buses make a left turn at the intersection of Arctic Avenue and Clinch Crescent. This intersection is a one-way stop, with the freeflow on Clinch Crescent. Buses waiting for a gap in traffic can be delayed for several minutes, particularly during the peak period due to traffic from the Health Sciences Centre. Consideration should be given to signalize this intersection or put a transit priority measure in place to reduce overall bus delay.

It is therefore recommended that Metrobus work with the University on restricting vehicle access to the terminal and work with the City on potential transit priority measures at Clinch Crescent. Such improvements will be even more critical if the proposed U-Pass initiative is implemented.

If the Memorial University node is determined to be a more effective transfer point than the Avalon Mall, Metrobus should work with the University on assessing a suitable location for a transfer facility in the 2-3 year time frame, or at such time that a U-Pass agreement with the University is initiated.

DOWNTOWN TERMINALS

Downtown St. John's has three major transfer points. These are Military & Forest, Freshwater & LeMarchant, and St. John's Convention Centre (Water Street and Waldegrave Street). A number of stakeholders and members of the public consulted during this study indicated some confusion about where to access a bus in the downtown. Each terminal is located near the edge of the downtown. While seven routes access the downtown area, only three of these routes traverse through the heart of the downtown area (Routes 3, 6 and 10). This creates the potential need for an additional transfer or a longer walk than many passengers are willing to take (particularly during inclement weather conditions).

The challenge with the downtown is that there are few opportunities to build a more centralized terminal due to the limited land availability. The streets within the downtown are also fairly narrow

and can become congested during peak periods, increasing overall travel time. Nonetheless, to make transit a more attractive option to access the downtown, there is a need to better centralize the service and reduce passenger confusion of where to access the bus.

Addressing the downtown terminal issue would require a more detailed effort and a separate terminal study should be initiated to address the feasibility of a new downtown terminal location. A study would look at boardings/alightings at each current terminal, travel patterns of users within the downtown, availability of land or servicing options to move people within the downtown (i.e. a high frequency shuttle connecting the three terminals). This study should involve participation from the Downtown Development Commission and the City's Engineering Department as it impacts employment and parking issues.

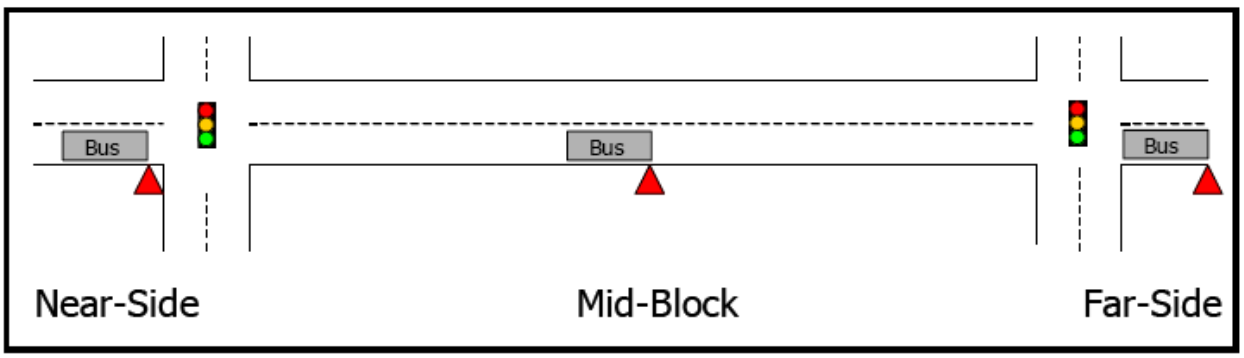
12.2 Bus Stops

At a lower level but equally important is the need for Metrobus to follow up on previous recommendations for upgrading bus stops and improving year round access to all transit stops. The topography and climate in St. John's presents some unique challenges and particularly with an aging population, the ability for passengers to access the stops and have some minimal level of shelter while waiting for service is essential to grow the ridership. This is particularly important during inclement weather conditions.

The optimal location of curb-side bus stops was also identified as an issue that should be addressed. There are three options for curb-side bus stops (illustrated in **Figure 22** below):

- far-side – bus stop located immediately after an intersection;
- near-side – bus stop located immediately before an intersection; and
- mid-block – bus stop located in the middle of a block between intersections.

Figure 22 – Bus Stop Location Options



**Source: Transit Capacity and Quality of Service Manual – 2nd Edition, Transportation Research Board, 2003*

The advantages and disadvantages of the location of each stop are illustrated in **Table 16**.

Table 16 – Advantages / Disadvantages of Bus Stop Location

Stop Location	Advantages	Disadvantages
Far-side	Provides signal priority for buses at intersections, since buses pass through the intersection before stopping when the signal is green.	Could result in traffic queued in the intersection when a bus stops in a travel lanes.
	Provide merging gaps in traffic flow created by a signalized intersection.	Can add to dwell time by causing buses to stop at a red light, and stop again on the far side once the light is green.
	Minimize conflicts with right-turning vehicles and buses and provide additional right turn capacity for vehicles.	May increase the number of rear-end crashes if drivers do not expect the bus to stop again after the red light.
Near-side	Eliminates potential double stopping	Increase conflict with right-turning vehicles (drivers delayed or attempting to turn right in front of the stopped transit vehicles).
	Allows passengers to board and alight when buses are stopped at red light.	Complicated bus signal priority operation.
	Minimizes interferences when traffic is heavy on the far side of an intersection.	Increased dwell times if bus stop on a green light and the light turns red during passenger boarding/alighting.
	Gives bus drivers a wide-angled view of the intersection.	May cause sight distance to be obscured for side street vehicles stopped to the right of the bus.
	Allows a passenger to access buses close to crosswalk.	
Mid-block	Minimizes sight distance problems for vehicles and pedestrians	Requires additional distance for no-parking restrictions
	May result in passenger waiting areas experiences less pedestrian congestion.	Encourages passengers to cross street mid-block (jay-walking)
		Increases walking distance for passengers crossing at intersections.

**Source: Transit Capacity and Quality of Service Manual – 2nd Edition, Transportation Research Board, 2003*

The existing practice in St. John's is to place bus stops on the near-side of the intersection (where possible). However, there has been a desire from the City to locate certain bus stops mid-block and away from signalized intersections. Locating bus stops at a mid-block location (with a bus bay) can reduce overall delays to vehicle traffic over a near side location, particularly if buses at the stop block a heavily used right turn lane. However, vehicle capacity is not the only factor that should be considered when setting a policy on appropriate bus stop location. The location of bus stops should balance the needs of pedestrians, transit users and private automobile users. Safety is always the

number one concern; particularly for pedestrians who are the most vulnerable when an accident occurs. Other factors that should be considered (in order of priority) should be:

1. Pedestrian safety;
2. Bus passengers safety;
3. General traffic safety;
4. Bus passenger convenience;
5. Freedom of bus movement;
6. Roadway capacity;
7. Minimization of nuisances to property owners; and
8. Auto driver convenience.

It is generally recommended that bus stops should be located at the near-side of the intersection at intersections controlled by stop signs. This prevents buses from stopping twice (once at the stop sign and once at the bus stop).

At signalized intersections, the practice of near-side versus far-side stop placement is often debated. Each has their own advantages and disadvantages, primarily with regards to passenger convenience.

The placement of stops on the near-side of an intersection can reduce the number of times a bus needs to stop. However, if there are long queues at the light, a bus may be forced to stop three times (once behind the queue, once at the stop and again if the light turns red while boarding/alighting passengers).

Bus stops at the far-side of intersections can avoid this situation if the bus reaches the intersection when the light is green. If the light is red, the bus must stop twice (once at the light and the second time at the far-side stop. If transit signal priority is in place, far-side stops are more advantageous due to the ability to extend green time and get a bus through the intersection.

Given that the majority of bus stops are located at the near-side of intersection, it is recommended that this practice be continued. Movement of buses to the far side should be made on a sight specific basis based on the factors described above and re-evaluated as transit priority measures come into place.

Mid-block bus stop locations should generally be avoided unless the distance between two intersections is long or when a particular destination is located at mid-block. This practice increases the uncontrolled interaction between cars and pedestrians caused by pedestrians crossing the street at undesignated locations. If this occurs, a pedestrian cross-walk should be in place.

The disadvantages of mid-block stops from a traffic operations and safety perspective are summarized below:

- At mid-block, vehicles travel at faster speeds and stopping buses will decrease vehicle speeds and reduce the capacity of the roadway in general
    - This is more severe if there is no bus bay and the bus has to stop in a traffic lane.
    - This is more severe if there is only one lane for traffic and opportunities for manoeuvring around the stopped bus do not exist.

- Buses pulling in and out of a stop at mid-block will prompt sudden and often unsafe lane changes.
    - This is more severe if there is no bus bay and cars attempt to join a free-flowing lane from a stopped position behind a bus.

12.3 Shelters

The presence of shelters at major transfer points should be a priority, and these should offer protection from the elements (wind, snow and rain).

Metrobus pays for the shelters, but also earns advertising revenue from them as well. A dedicated Sales Manager is responsible for transit advertising which includes shelters.

Metrobus' existing service standards states that:

> *"Bus shelters should be placed at bus stops depending on various factors such as amount of passenger activity and exposure to weather conditions as well as the average waiting time. Shelters should not be considered at stops where the number of patrons boarding would be less than two (2) per hour or 25 per day."*

This is an appropriate standard for shelters, however, more detail may be warranted to prioritize requests for new shelters. The following factors have been used in other transit systems (in order of priority) and may be considered for Metrobus.

1. High passenger volume boarding areas (i.e. all bus transfer locations);
2. Areas with poor microclimatic conditions (i.e. wind tunnels);
3. Inbound locations on routes over outbound locations;
4. Stops with high senior's usage;
5. Stops that are fully accessible to and used by persons with mobility aids;
6. Stops with good lighting and visibility to minimize instances of vandalism (i.e. along major arterial roads); and
7. Highly visible areas for advertising purposes.

The process of selecting shelter locations should be transparent and based on a clear rationale and criteria as indicated above.

Currently, approximately 8 percent of stops within the Metrobus service area have shelters. The current target for Metrobus is a 15 percent shelter/stop target. This target is appropriate and should be maintained. To achieve this target, an increase in the operating budget is required. Opportunities for shelter based advertising should continue to be sought to off-set the capital and maintenance costs of shelters.

Recommendations:

1. Metrobus should initiate feasibility studies with property owners for terminal improvements and transit priority measures at Avalon Mall and Village Shopping Centre;
2. Metrobus should look at terminal improvements and transit priority opportunities in the vicinity of the Memorial University terminal. As part of a future operational review, an

expanded role for the Memorial University terminal should be explored, which will include a review of potential sites;

3. Metrobus should work with the city and various stakeholders on a study of downtown terminal/transfer point opportunities;
4. Metrobus should develop a set of service standards for bus stop location criteria, with an emphasis on near-side and far-side locations. Mid-block locations should be avoided where possible;
5. Metrobus should strengthen the process of identifying and prioritizing shelter locations. A 15 percent shelter to stop ratio target should be maintained; and
6. Metrobus should work with the City to improve snow clearing around bus stops and upgrade the passenger amenities.

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13.0 STRATEGIES TO SERVICE LOW DEMAND AREAS

With a goal of increasing transit usage and providing people with a travel option that is reasonably competitive, service frequencies beyond 30 minutes and limitations on service hours should be reduced as much as possible. Yet financial realities and the nature of land use and activity patterns clearly result in some geographic locations and/or service times when transit demand is low and difficult to serve productively with a fixed route transit service.

Three approaches are outlined in this section for addressing low demand periods, remote/low density areas and difficult to serve markets. Metrobus should examine its approach to Sunday service and to geographic areas such as Shea Heights, Kilbride, and Goulds which lack the density required to support 30 minute service. A special industrial service strategy is also recommended for consideration.

13.1 Zone Bus

A zone bus is a demand responsive service where a bus operates within a defined geographic area with an established transfer point between all zones.

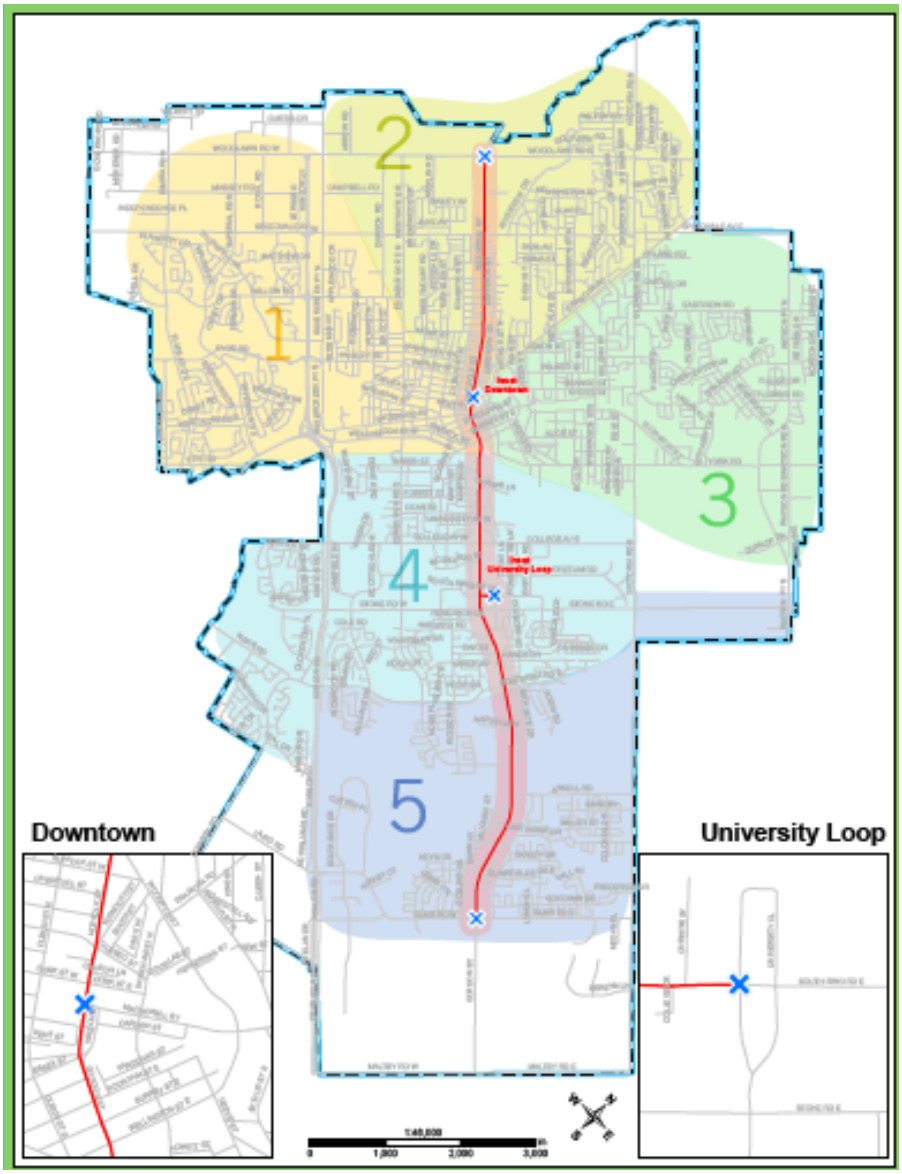
Passengers are required to phone a dispatcher approximately 1 to 2 hours ahead of their desired trip time to find out a designated spot/time for pick up. The bus driver then picks up and drops off passengers within each zone during a set interval (i.e. every half hour) before returning to the transfer point. The route used in the zone is flexible and is based on the scheduled passenger pick-ups and drop offs for each time interval.

Zone bus is most effective in areas or during periods of low ridership demand. Typically, a zone bus can carry 15 to 20 passengers per revenue vehicle hour (depending on the overall size of the zone). By operating within a zone instead of along a fixed route, the catchment area served by one vehicle becomes larger, thereby minimizing the number of buses required to maintain reasonable coverage targets.

A dispatcher position would need to be created in addition to the drivers required to operate the system. Therefore, bus driver savings attributed to a zone bus would need to include the addition of a dispatcher.

Areas within St. John's where a zone bus structure could be considered include Airport Heights, Shea Heights, Kenmount Terrace and Goulds/Kilbride (see also **Section 12.2** for other options). For Sundays a zone bus system, perhaps augmented by fixed route spine services on major arterials connecting the downtown, Village Shopping Centre, Avalon Mall and Memorial University, may be a more productive way to serve this low demand period. **Figure 23** illustrates the approach recommended in Guelph for Sunday and Holiday service which would cut the fleet requirement in half but require an effective dispatch and radio system. The design principle is that people living close to the spine service would walk to the nearest bus stop along the spine route while others living in the various zones call in and request the time/location of the bus travelling in their zone which will take them to any destination within their zone or to a transfer point.

Figure 23 – Sunday Zone Bus Concept in Guelph



From a passenger perspective, a zone bus service provides reduced walking distance to the nearest pick-up/drop-off point compared to a fixed route service. Passengers can often wait for or get dropped off at the nearest intersection to their origin/destination rather than walk to the closest transit stop.

The disadvantage of this service delivery structure is that it requires passengers to pre-plan their trip rather than make a spontaneous trip. Also, the trip on the vehicle may not always be direct, and a passenger picked up first during a run will have to ride the bus for the whole run before reaching a transfer point. If run times are set to a half hour, the impact of this will be minimized.

A Zone Bus is also not designed for high ridership volumes, as the bus must be able to pick up and drop off all passengers that request service during a set interval (typically a half hour). Once a certain level of ridership is reached, zones must become smaller to handle passenger demand, which

reduces the overall cost effectiveness of the Zone Bus structure. Due to this inability to carry as many passengers per trip, a Zone bus becomes less cost effective than a fixed route service when a certain passenger volume is reached. At this point, a transit system typically switches to a fixed route system. This switch can also be seen negatively by many passengers that enjoy the convenience of the zone bus service.

Oakville Transit inaugurated a Zone bus system for low demand periods (evening and Sundays). The system used four vehicles for the Zone bus service, replacing eleven buses that were previously deployed on fixed routes in these off-peak periods. Transfers were made at the GO Transit station, which facilitated transfers to interregional rail service to the City of Toronto. The new Zone bus Sunday service exceeded the previous ridership with seven fewer fixed route vehicles. The cost of operating a zone bus service was about one third of the cost of operating a conventional fixed route service in the same area. However, as ridership grew due to the Zone bus success, the service was replaced with a fixed route service to accommodate growing demands.

13.2 TransCab

TransCab is also an effective service delivery model for low demand areas. TransCab involves an agreement between the transit operator and a local taxi company to pick up/drop off passengers who are eligible for transit service. The taxi company receives the fare plus an additional payment from the transit company and this is usually significantly less expensive then dedicated conventional services operating a fixed route all day. For example if the taxi flat rate is $15.00 and the fare is $2.00, Metrobus would pay the taxi company $13.00 for the trip.

The use of TransCab has been a common practice in the City of Hamilton for a number of years. In this case, the TransCab trip is made to the nearest bus stop and the duplicate ticket is taken as a transfer by the bus driver. No fare is collected on the way in, but a fare is collected on the way out. Although only one half of the fare is collected by the host municipality, it is viewed by Hamilton as a means of filling the bus which is on route in any event.

The advantage of this model is that it provides an inexpensive way for Metrobus to provide service to a low demand area or period. For example, it costs Metrobus $98.56 per hour to operate service. In low demand peripheral areas such as the Goulds, TransCab service could be offered during the off peak periods (i.e. weekends and evenings) instead of regular fixed route service.

If the uptake was infrequent and cost less than the hourly Metrobus rate[5], it would be cost effective to provide a TransCab connecting to a transfer point at the Village Mall. It would also likely improve the level of service for passengers, as service would be more available than the hourly freqency that is currently provided. It may also increase ridership during the peak periods as the TransCab would offer an additional level of flexibility and assurance that a service is available during the off-peaks should the need to travel during this period arise.

The challenge with TransCab is the difficutly implementing the service under the collective agreement with the driver's union. Many system's use this type of service delivery model as a method to build ridership in low demand areas. If a clear service standard is established that guides the introduction of new service, TransCab can be used when ridership falls below the standard as a

[5] For example, if a taxi fare cost $20.00 from the Goulds to the Village Mall and it could make four trips in one hour, the cost for Metrobus would be $80.00 minus fares collected.

method of providing accessibility and building up ridership. Once ridership on the service reaches the minimum hourly target, it is replaced by a traditional transit service operated by a transit driver. Establishing and communicating this standard/policy can often help with the implementaiton of a TransCab service.

13.3 Service to Industrial Areas

The survey that was administered to local businesses through the Board of Trade and the Downtown Development Commission, queried the business' relationship to transit, the importance of transit to their success, and their willingness to partner with Metrobus in implementing various initiatives. The survey found that approximately 56 percent of employers agreed that transit is important to attracting and retaining employees. When asked about partnership opportunities with Metrobus to improve services, 73 percent of respondents replied that they would be willing to distribute Metrobus information to their employees. However, respondents were not very interested in other initiatives such as providing financial contributions for increased service and adjusting shift times to match Metrobus service. Respondents were also asked about their level of agreement with certain statements relating to transit service. The top three statements for which there was agreement are listed below:

- Transit services should be available throughout the greater St. John's area;
- Public transit is an important contributor to achieving environmental goals in our community; and
- Transit is an important part of the solution to downtown parking problems.

Increasingly, industrial land developers and employers are looking for the availability of public transit services to accommodate employees and in some cases because of a corporate commitment to environmental sustainability. Unfortunately, fixed route, scheduled transit services have difficulty effectively and efficiently serving this type of market. Some reasons include:

- Low density industrial development means workers are not concentrated near fixed stops on bus routes. This often means long walks to and from the plant door (especially difficult in winter);
- Routes through industrial areas can become indirect and have poor pedestrian connections from bus stop to factory door;
- In large industrial parks, unproductive deadheading is usually required between industries to access major employers;
- Often there is not adjacent residential or commercial development along the route to assist with ridership and productivity;
- Workplace start and stop times are hard to match with bus schedules especially when a route passes several employers;
- Employees working shifts and weekends may find transit service hours are not always compatible; and
- Employees live in very dispersed areas and many reside outside the transit service area.

In some cases industrial employers are located in close proximity to fixed route transit services which primarily serve residential or commercial areas (i.e. Harvey's Industrial Area – Stavanger Drive Retail Area). When this occurs, Metrobus should continue to provide fixed route service in line with system performance targets and seek opportunities with these employers to encourage increased transit usage. In specific cases, local route adjustments can be made to better match shift times and reduce unproductive deadheading.

For large industrial areas that are not close to residential areas, a unique service offering may be more effective. Two examples in Metrobus' service area include the Donovan Industrial Park in Mount Pearl[6] and the O'Leary Industrial Park in St. John's. There are two approaches suggested to provide transit service to these types of remote industrial areas. The first approach deals with modifications to the current fixed route structure. The second approach is to implement an **industrial special service** tailored to the specific needs of the industrial areas. One type of industrial special would involve a partnership strategy with employer(s) based on a financial target being achieved. The other industrial special strategy is based on establishing and monitoring minimum utilization targets. The various approaches are described below.

OPTION 1 – MODIFICATION OF FIXED ROUTE TRANSIT

The first option is to continue servicing large industrial areas with regular fixed route transit. It is apparent that there are periods of high demand, and other periods where ridership is much less. To address this situation, one option would be to maintain the fixed routes and short-turn buses before reaching the industrial areas during periods of low demand. For example, Route 10 and Route 16 could turn around at Avalon Mall, instead of running through O'Leary Industrial Park.

The benefit of this strategy is increased efficiency for the operator. Short-turning the service would save the operator bus service hours during periods where there is little ridership. One of the challenges of this strategy is developing a route structure that could accommodate periodic short-turns while still maintaining schedules at the transfer points. It would be important to maintain the cycle and not deviate in other areas of the route during the off-peak.

OPTION 2 – INDUSTRIAL SPECIALS

Industrial Specials can be structured to provide more direct and specialized service to larger industrial areas. Designing such services typically involves conducting a survey of industrial employers, including shift times and employee's residential locations and designing a tailored service to meet transit demands.

The benefit of this strategy for the employer and employees is that they are provided a service that is uniquely tailored to fit their needs (i.e. matching shift times and providing more direct service right to the plant door). The industrial service can also be designed to operate during periods when conventional transit is not operating. Finally, specials can be designed to run express between collection points and the industrial area, thereby increasing the attractiveness of the service.

For the operator, the operation of the service can be structured to match demand, thereby increasing the efficiency and effectiveness of the service. Specific runs may also provide the opportunity to minimize split shifts for bus drivers and buses may be integrated into and supplement the base service when returning from the industrial trip.

[6] A change in the service delivery model to this industrial park would need to be approved by the Town of Mount Pearl.

Since industrial specials are based on a partnership approach with employers, monitoring performance is essential. There are two approaches to implementing an industrial special which are described below:

Based on discussions with stakeholders and observations of the current travel market, the pursuit of an Industrial Special strategy to increase ridership should be a lower priority than other initiatives outlined in this report. A strong interest by major employers or industrial developers could be a catalyst for future implementation.

Option 2a – Industrial Special based on Utilization Targets

This approach provides a specially designed industrial service with pre-set utilization targets to determine whether the service should be continued, modified or discontinued. Providing special service to industrial areas can be costly, as a result of having to carry bus fleets beyond the normal, for one or two runs a day, and the cost of manpower outside normal operating hours. This extra cost not only includes the driver but also maintenance and supervision.

This strategy would involve setting a Metrobus guideline to identify acceptable utilization targets. The concept of "Use it or Lose it" is appropriate and underutilized runs would be candidates for discontinuance. For example, a Ridership Guideline for Industrial Specials could be:

1. Acceptable Utilization 20 or more daily average passengers per hour
2. Marginal Utilization 10 to 19 daily average passengers per hour
3. Unacceptable Utilization 9 or fewer daily average passengers per hour

These utilization targets would need to be confirmed if this strategy where selected. The average would be calculated over a three month period. If performance is marginal, Metrobus would provide a notice to the employers on that route to post on their Bulletin Boards that ridership on the specific run has not maintained an economic threshold, but would be extended for a further three month trial period. The notice would include the positive aspects of the service and general information on how to use the bus, the transit pass tax deduction advantages, environmental benefits and personal savings potential compared with auto operation. Such a process has the added advantage of notifying the employer who would be in a position to consider adding incentives for transit use on their own. All runs that are in the unacceptable range for more than a three month period would be discontinued.

These guidelines are recommended for services operating during or close to normal operating hours. Requests for service during extreme off service hours, such as 12:30 to 5:00 AM are difficult to provide efficiently by Metrobus. The local taxi industry may be better equipped to provide these services on a contract basis unless a suitable cost sharing agreement between Metrobus and the industry can be reached.

Option 2b – Financial Partnership Approach

This option involves developing a partnership and specific agreement between Metrobus and the industrial area employers being serviced by transit. The concept is to design an effective dedicated service in cooperation with employers and obtain a minimum financial commitment from them (through the advance purchase of transit passes for employees) before initiating the service.

The benefit of this strategy for the employer and employees is that:

1. Employees can use the pass to access all Metrobus services;
2. Employers can sell transit passes to employees (if desired) to recover some of their cost of service;
3. Provision of transit services will help attract the necessary labour pool for employers;
4. Transit passes are tax deductible, which provides a further financial incentive; and
5. The special industrial service can be designed if required to operate during days and hours where regular transit is not provided.

The benefit of this strategy for Metrobus is that:

1. A specific cost recovery target is set before the service begins operation and the revenue contribution from employers is guaranteed;
2. The strategy is incentive-based for the employers and puts more responsibility on them to encourage the use of transit;
3. The service can be operated on a trial basis and discontinued only by employers opting out. If successful the service is easily expanded under the same principles; and
4. Capital costs may not be required, but if they are then some financial recovery is possible when setting the cost of service.

To implement the above service concept, the following steps are suggested:

1. Metrobus works initially with one large employer (and perhaps the Board of Trade) to spearhead the initiative;
2. Metrobus identifies other nearby employers who might participate in the special service and develop marketing and branding strategies;
3. Metrobus works with these employers to design the Industrial service offering that is tailored to shift times of participating employers;
4. Metrobus sells 6 months' worth of monthly Industrial service using the M-Card to the participating employers;
5. M-Card passes are sold at the Adult Monthly Pass rate, and the number that employers are required to purchase depends on the number of service hours involved and the required cost recovery standard (i.e. between 40 and 75 percent R/C ratio). As an incentive this Special Pass will be usable on all Metrobus services;
6. The employer can choose to give the M-Cards to their employees or sell them at whatever price they wish;
7. Anyone using the Industrial special without an Industrial Special Pass must present a transfer or pay a separate fare. Any extra revenue is credited back to the employer's contribution in the next six month period. This should be relatively easy using the M-Card technology;
8. New employers can sign on during the six month period and again any excess in revenue beyond the target R/C will be credited back to employers' contribution in the next six month period; and
9. Service is reviewed, modified and renegotiated on a six month basis.

This approach is based on recognition that a successful industrial transit service will require both innovation and partnership. **Table 17** provides an example of how the service might operate. The hourly operating cost for the example is assumed to be $98.56 while the monthly pass price is $70.00. Nine hours of service is assumed six days per week with a shuttle operating semi express between key terminals and the locations of participating employers within the industrial area.

Metrobus would have to establish the R/C target and set a minimum call out time (e.g. three hours of consecutive service). Metrobus staff would design the service based on an employee survey and market the service to prospective employers.

Table 17 – Industrial Special Service Example (Based on Different Target R/C's)

Target R/C (set by the City)	Weekday Daily Service Hours	Weekday Daily Cost	Six Month Operating Cost	Six Month Municipal Contribution	Six Month Employer Contribution	Monthly Passes Provided (per month)	Monthly Passes Provided (Six months)	Passengers per hour
70%	9	$887	$134,387	$40,316	$94,071	224	1,344	24.9
60%	9	$887	$134,387	$53,755	$80,632	192	1,152	21.3
50%	9	$887	$134,387	$67,193	$67,193	160	960	17.8
40%	9	$887	$134,387	$80,632	$53,755	128	768	14.2

** Employers can determine the sale price of passes to its employees. A minimum of 6 consecutive months of passes must be purchased.*

To minimize their financial contribution, employers would need to sell a minimum number of transit passes to its employees. If an employer sells more, then they could keep the difference, sell passes at a slightly reduced cost or invest in higher service levels. This provides an incentive for employers to encourage employees to take transit while Metrobus ensures it maintains an acceptable financial performance.

MAINTAINING COVERAGE DURING OFF-PEAKS

A limitation to this strategy is reduced schedule flexibility for some industrial employees. Limiting service hours to peak period industrial shift times increases efficiency, however, the schedule may not accommodate all shift times. Employees that need to leave work early (due to medical or family emergency) or arrive late may also be left stranded if their travel need is outside or between the limited transit hours. Employees who commit to using the Industrial special need to be guaranteed a safe and effective way to/from work in these cases so they can have the confidence to leave their car at home.

TransCab can be used during the off-peak to accommodate this situation and provide the basis for the implementation of an Emergency Ride Home program in partnership with employers.

An Emergency Ride Home Program in industrial areas often supplements the industrial service strategy described above. This program should be available to employees who pledge to take transit or carpool (as a passenger) to work. What constitutes an "emergency" should be carefully defined to ensure that the program is not too restrictive but is also not susceptible to abuse. In most Emergency Ride Home Programs employees are fully or partially reimbursed for taxi fares used to get to/from work in extraordinary circumstances. An Emergency Ride Home Program needs to be flexible and user friendly to encourage commitment to use alternative modes for commuting. This program is typically funded by the employer, but Metrobus could also provide a small contribution to employers participating in a financial partnership for Industrial specials.

SUMMARY

If Metrobus moves towards improving overall service levels, the exploration of innovative service strategies to serve low demand areas and periods is essential to off-set the relatively high costs while maintaining or improving overall service levels.

To identify opportunities to employ these strategies, more detailed ridership counts should be conducted by period of the day, day of the week or in specific geographic areas to determine where ridership targets fall below utilization standards for fixed route service.

Opportunities for alternative service strategies should then be explored in these areas. This may involve discussion with the public and/or key stakeholders (i.e. a local taxi company or major employers). In industrial areas, achieving the involvement of employers is important, particularly in areas that are difficult to service. Discussions with employers should emphasize the need to provide custom designed service for employees and the importance of such services to attracting and retaining a capable labour pool. Partnership and endorsement involving the Board of Trade and various industry associations may also be helpful.

Recommendations:

1. Metrobus should collect and assess ridership per hour on a typical weekday, Sundays and Saturday's via a passenger boarding and alighting survey;
2. Metrobus should identify areas and periods of low demand and conduct a more complete review of low demand service strategies with the objective of improving level of service and/or reducing operating costs and capital requirements; and
3. As a medium-term priority, Metrobus should initiate discussions with potential partners for the implementation of Industrial special service strategies.

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14.0 FARE STRATEGIES

14.1 M-Card

The implementation of the M-Card in 2006 replaced the 10 Ride Card, Monthly and Semester Pass paper media. Its introduction has increased revenue security as well as provided the flexibility to introduce other fare payment options in the future. It has also been beneficial to transit users as the added convenience allows passengers to fill up their cards at stations and on the internet and not be left looking for exact change as they board the bus. The various surveys have found that the M-Card has been significantly more popular than cash as a means of fare payment and M-Card usage covers about 75-80 percent of riders[7].

It is recommended that Metrobus continue to expand the M-Card system and introduce more outlets and technology upgrades. M-Card also offers the opportunity to develop a combined transit and parking pass. By recognizing that some transit users will occasionally require a car for specific trip making, having the M-Card compatible with parking payment systems will increase the convenience of the card for transit users, particularly at strategically located park and ride lots.

M-Card is also very adaptable to special promotions, rewards programs and affinity programs with retailers or other partners. Metrobus is a transit industry leader with this technology and should continue the momentum already developed.

14.2 Fare Strategy and Affordability

Fare increases, no matter how small, are viewed negatively by passengers especially if they perceive that the service they are receiving has not improved. However, fare increases are needed to keep up with the rising costs of operating and maintaining the system (e.g. fuel, wages, etc.).

Ideally, small fare increases should be implemented annually during the budgeting process to avoid large one-time increases to "catch up". Larger fare increases should be tied to the introduction of new services, extended service hours or improved frequency of service, provision of new equipment or in response to extraordinary circumstances (e.g. sudden, dramatic increase in fuel costs). This approach to setting fares will give customers the impression that they are getting appropriate value from the increased fare.

Metrobus has several fare categories, with discounts to specific demographic groups (seniors, students, children) offered for 10-ride tickets and monthly passes.

There is also a single cash fare for all age categories (with the exception of child fares), which is effective and appropriate. Metrobus should move as quickly as possible to a single cash fare for all categories as this will greatly simplify ridership reporting and operations while reducing potential for conflict between drivers and users.

Pricing strategies and incentives should continue to move as many users as possible from cash to tickets and passes on the M-Card. While this reduces the average fare, the conversion of occasional cash riders to become more regular transit users is a key growth strategy.

The practice of discounting fares for key promotions (i.e. Eighties Promotion in August) is an effective means of getting people to try the service or use it more. The Eighties Promotion reduced

[7] This statistic was noted from the passenger surveys. Actual system usage of M-Card is between 60 to 65 percent of riders.

transit fares to a $1.00 during three Friday's in August. This led to the highest ridership in August over recent years. While such marketing campaigns should be continued, deep fare discounts are not recommended as a basis for setting fares. A fare reduction would attract some increased ridership, however, the system needs to achieve a sustainable revenue to cost ratio to maintain effective operations. Several studies have found that level of service is a much higher determinant of ridership than fare pricing (in technical terms, service elasticity is much higher than fare elasticity for transit systems). Therefore, the focus on ridership growth should be on service improvements rather than reduction in fares.

The affordability issue, particularly for seniors, was brought up during the public consultation process. There are various approaches to 'affordability' which should be further explored. Typically, municipal transit services are set up to operate as a 'business' in recognition of the significant expenditures required for capital assets, staffing, and operations and the large municipal investment involved. Fare concessions for specific demographic groups such as seniors are typically modest discounts recognizing that the recipients are likely off-peak travellers which may cost the system somewhat less to service than adult peak period travellers. However, applying large discounts to generic groups such as seniors, assumes all members of that group have affordability issues which is increasingly not the case.

The effect of lower fares for one category is that other users must pay more if the system R/C target is to be achieved. Thus the impact of a significant discount for all seniors will be felt by other users and the situation will only accelerate given the aging population projections for the Metrobus service area.

It is recommended that the issue of 'transit affordability' continue to be a subject for the Department of Health & Community Services. Targeting assistance to those in need, capturing the voluntary generosity of service clubs and individual donors, and determining appropriate levels of municipal direct or matching support is a sensitive task that requires this experienced judgement. Transit certainly provides a vital social service but it is best operated as a transportation business with social policy decisions (such as large fare subsidies) left to others.

14.3 Extended Transfer Policy

Transfers are typically issued to passengers traveling from one bus route to another to continue travel in one direction and have a time restriction for use (e.g. 30 minutes). A transfer strategy that is more customer-friendly and increases transit use is the concept of an extended time transfer, which allows a passenger for a single fare to have a brief stop over or travel to and from a destination for trips of short duration. A transfer would only need to be day and time specific and not linked to a route or travel direction. Extended time transfers also reduce the number of fare and transfer disputes and are more easily understood by the public.

The extended transfer provides an added convenience for passengers and a benefit for merchants and should not significantly impact the main ridership base (work and school trips). Typically it might allow someone to make a short evening or mid-day shopping trip on a single fare and encourage occasional users to become regular transit users.

An extended transfer of 90 minutes should have minimal impact on revenue and is a preferred strategy to having lower off peak fares which can be challenging to administer. It also facilitates commercial activity at transfer points and helps deal with affordability issues. It will allow people to shop briefly after work without paying a second fare and be well received by users and merchants. The extended transfer should also increase usage in low demand periods.

Recommendations:

1. Metrobus should continue to expand the M-Card system and introduce more outlets, technology improvements, and pricing strategies to develop higher ridership and compatibility with parking payment systems;
2. Metrobus should move to a single cash fare to simplify ridership reporting and operations;
3. Metrobus should continue to encourage the Department of Health & Community Services to address issues of affordability regarding transit fares; and
4. Metrobus adopt an extended time transfer policy of 90 minutes.

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15.0 PARKING MANAGEMENT AND PRICING

The lack of available parking in certain areas of the downtown and congestion issues are well documented in the 2009 Downtown St. John's Parking Study, and outlined in **Section 6.4**. During the weekday peak times, parking utilization is 100 percent in the west side of the downtown. This is in part due to the relatively cheap price of parking ($60/month in municipal lots compared to $70 for the Metrobus adult monthly pass).

Metered parking in the downtown costs $1.25 per hour, which is relatively inexpensive[8]. The fine for parking at an expired metre is $25.00[9].

The Downtown St. John's Parking Study recommended that parking pricing be reviewed to bring it in line with comparable cities and allow for public transit to be a more competitive choice for travel to/from the Downtown. Specific recommendations included increasing the hourly rate of parking (specifically in high demand areas) and the monthly cost of parking at City-owned, permit parking facilities/lots from $60.00 to $100.00. It was also recommended that metered parking increase from $1.00 per hour to $1.25 per hour (completed) and that fines for parking at an expired metre increase from $15.00 to $25.00 (completed). Parking pricing and supply can play a significant role in Transportation Demand Management, help encourage alternative modes and support overall environmental goals.

To address the downtown parking issue and subsequently increase Metrobus ridership, Metrobus should work collaboratively with the City to address the issue of parking and access through:

15.1 Park and Ride Lots

The Downtown Parking Study specifically addresses the role of transit as part of the Parking Management Plan. The study recommended a 'park and ride' program where express transit routes would assist in attracting more commuter ridership. This recommendation was approved by Council.

'Park and ride' facilities would be implemented at major facilities (with ample parking available) that are far enough from the Downtown to make getting out of the car a practical alternative to continuing the drive downtown and paying for parking. This is coupled with a recommendation that Metrobus expand its service area to capture regional trips as the study found that 35 percent of travellers to and from the downtown reside in areas that are not serviced by transit.

Park and Ride lots have been successful in a number of municipalities, particularly where locations are coupled with express transit services and are located near major arterials. Using existing underutilized space for such parking lots may be appropriate and would limit capital expenditures. Two examples include the Village Shopping Centre (in close proximity to Highway 2) and the Avalon Mall (in close proximity to Highway 50). An agreement would need to be in place with the property owners and the parking location would need to be in close proximity to the transit terminals. The benefit to the mall owners is that park-and-ride users may be more likely to shop at their facilities on the return trip home. To limit spill over, a designated and secured area may need to be established, using the M-Card to gain access.

[8] Recently increased from $1.00 based on recommendations in the 2009 Downtown St. John's Parking Study

[9] Recently increased from $15.00 based on recommendations in the 2009 Downtown St. John's Parking Study

If regional transit is introduced, park and ride facilities can also be explored along the highway corridors near Paradise and Conception Bay South. Semi-express services would be ideal to operate from these areas to the downtown and other major destinations (i.e. Memorial University /CNA/ Confederation Building/East Coast Health Centre).

For service into the downtown, the Downtown Development Commission would be an ideal partner to promote the use of park and ride lots.

While the introduction of Park and Ride lots would provide some ridership growth and assist in reducing overall downtown parking demand, this solution is less effective under the current pricing structure. The monthly cost to park in a municipal lot is $10.00 cheaper than a transit pass, and for this solution to be effective, parking costs should be greater than or equal to a transit pass. The higher the price differential, the more effective this strategy will be.

If the pricing situation is resolved, opportunities to integrate the M-Card with park-and-ride lots (where applicable) should also be explored.

15.2 Parking Supply

One of the challenges for Metrobus is that the study also recommended that additional revenue from the higher parking rates go towards building additional parking spaces.

One of the recommendations in the Downtown Parking Study suggested that the City replace the Parking Exempt Area with Cash in Lieu of Parking (CILP) policy. This was approved by Council in a recent March 22nd, 2010 meeting.

CILP policies are provided where building owners/developers cannot meet minimum parking requirement by-laws for reasons such as site constraints. In this arrangement, they are required to provide the city "cash" in lieu of each space in the minimum parking by-law they have not met. This will go towards developing future parking structures within the downtown for long-term parking. While this strategy is effective in ensuring an adequate future parking supply, it does not address the needs of transit by continually adding to the supply.

Instead of earmarking this money into a parking fund, it is recommended that funds received from the program go towards a general ***'downtown accessibility fund'***. The purpose of the fund would be to improve accessibility into the downtown by all means including parking initiatives, transit solutions, cycling, or transportation demand management applications. Such a comprehensive strategy will better contribute to congestion reduction on downtown streets, pedestrian orientation and the long-term sustainability of the downtown rather than focusing the solution on parking alone.

15.3 Parking Cash Out Program

A number of employers and landlords in the downtown offer free parking to their employees and tenants respectively. This situation provides little incentive for employees who want to take transit. Where employers and landlords are providing free parking, an option should be given to those that would prefer to take transit, walk or cycle.

Parking cash out programs provide a means of reducing weekday morning and afternoon off-street parking demand by providing cash incentives to employees that find alternative means to access the downtown. This is an increasingly popular strategy in cases where parking is currently offered free of charge to employees (as with the City of St. John's) but the costs are covered by the employer in their lease. Using a parking cash-out program in downtown St. John's, perhaps starting with City

Hall employees, employees would be offered a choice between free parking and a monthly cash benefit or a free Metrobus pass. Those who select the monthly cash benefit can then apply it to purchase of a transit pass or arrange car-sharing. If a transit pass is provided, then the employee saves on the costs of operating a private automobile for their downtown commute (Downtown St. John's Parking Study, 2009).

The Victoria Transport Policy Institute shows that parking cash out programs have been implemented in numerous U.S. municipalities, universities, and companies. A study by Shoup (1997) at various urban and suburban worksites found that parking cash out programs resulted in a 13 percent decrease in single occupant car travel and a 9 percent increase in carpooling, 3 percent increase in public transit, and a 1 percent increase in active transportation. However, other studies have found that parking cash out programs typically reduce single occupant vehicle travel by 20 percent. Canadian examples of parking cash out programs include:

- Vancouver Airport – In 2006, the airport began to offer staff a $50 monthly rebate. Within five months 17 percent of employees were participating.
- City of Ottawa – Offers a $72 monthly rebate to its 3,500 staff and parking demand has declined by 18 percent.

It is recommended that Metrobus work with the City and the Downtown Development Commission on implementing a parking cash out program. Financial incentives for a limited period of time may also be provided to those that try Metrobus (i.e. reduced pass cost for 2 months for employees committing to the program).

Recommendations:

1. Metrobus should work with the City to increase the cost of monthly downtown parking at City owned lots (parking cost equivalent or greater than a monthly transit pass);
2. Metrobus should work with the City to identify suitable park and ride locations and development of a fare and service integration strategy;
3. Metrobus should encourage that the Cash in Lieu of Parking program be modified to include transit support as a possible solution to future parking issues; and
4. Metrobus should encourage the implementation of the parking cash out program, (perhaps starting with city employees).

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16.0 FUTURE LAND USE AND DEVELOPMENT

16.1 Transit and Community Planning

As growth continues in the rural and suburban communities on the periphery of the urban core, greater demands are placed on the regional road network to accommodate an increasing amount of commuter traffic. In the downtown area of St. John's in particular, commuting traffic from both within and outside the City creates both growing congestion and parking issues.

The City of St. John's has a large amount of developable land available within its own municipal borders. Transit supportive development should be emphasized when development in these areas occurs. This includes a grid network of local streets connecting to high density corridors that run between major activity areas. Transit needs to be proactive and a 'Transit First' strategy should be implemented in conjunction with any new development to build a culture of transit use among new residents/businesses.

Mega-projects, such as offshore oil extraction do have spin-off and supportive employment on-shore that are required to run the off-shore work. This includes technological, engineering, administrative, and other labour services. Such employment is generally located in business and industrial parks in and around St. John's. As a result several business and industrial parks are at capacity including:

- Donovan's Industrial Park in Mount Pearl;
- Kenmount Industrial Park in Mount Pearl;
- Octagon Pond Industrial Park in Mount Pearl, and
- St. Anne's Industrial Park in Paradise.

Partially as a result of economic growth, there is a high demand for office space in St. John's. Engineers, administrative personnel, and technologists make up about 81 percent of the workforce in companies directly involved in the oil and gas sector. As the oil and gas sector grows, so will office space needs as companies seek locations close to government offices, the financial sector, the airport, and complementary firms. Metrobus needs to engage these companies and build partnerships (perhaps through the Board of Trade) to encourage greater use of public transit services. Where employment centres are well served by fixed route transit, employee pass programs may be appropriate and where employment is in industrial parks which are difficult to serve with fixed routes then strategies involving industrial specials may be the best solution (**Section 11.0)**.

While relations between the City and Metrobus are excellent and the common goals of the two organizations are recognized, there are many issues that require further collaborative efforts such as transit supportive land use, parking strategies, integration of transit and active transportation, selective introduction of transit priority measures, etc. Both the City and Metrobus should encourage more communications between staff from Metrobus and the departments of Planning, Engineering, Public Works and Parks and Economic Development Tourism and Culture. The focus of discussion should include developing an integrated strategy for effective transit service delivery, including transit supportive development policies, growth management, stop placement and design, transit priority measures, maintenance and snow removal, and partnership opportunities for existing and new employers.

16.2 Transit Oriented Development

One factor which is usually a tool for ridership growth but can also be a contributor to ridership decline if ignored is the integration of transit and land use (transit oriented development). Land use can have significant effect on transit ridership and the provision on increased densities is a key to efficient transit service. The closer the transit market lives, works, and plays to efficient transit, the more likely they are to use it. There is also a design element. A transit trip often includes walking or cycling between the bus stop and origin/destination. If the urban landscape is conducive to walking and cycling and a feeling of safety is achieved, it is more likely that a prospective rider will be willing to walk or bike to/from the bus stop instead of getting into a car and driving.

Transit supportive development guidelines are not in place within the City of St. John's. This was a recommendation from the 2007 Transit Review that was never carried through. While discussions with representatives for the City's Planning Department reveal a desire to develop such guidelines, there needs to be a strong local champion to push it forward. It is recommended that Transit Supportive Development Guidelines be developed by Metrobus and the City Planning Department.

Recommendations:

1. Metrobus should work with the City to ensure that new development areas are served by transit and are designed to be transit supportive; and
2. Metrobus should increase management staff communications with various City departments to achieve mutual objectives, including Planning, Engineering, Public Works and Parks and Economic Development Tourism and Culture.

17.0 RESPONDING TO AN AGING SOCIETY

The aging society and its implications for public transit are detailed in **Sections 6.1** and **9.1**. Strategies need to be in place to ensure that Metrobus responds to and capitalizes on this trend, especially as its service area population is rapidly shifting toward an increased percentage of seniors

The paratransit system run separately by the City has been successful and ridership has been increasing significantly. This system is not integrated with Metrobus and is increasingly becoming the transportation of choice for seniors and individuals with mobility issues. While there will always be a need for a "door-to-door" service for some individuals, this type of service delivery is significantly more expensive than use of the conventional transit system. To maximize ridership in an affordable fashion, the City's goal should be to accommodate as many people as possible on conventional services, to accommodate additional trips using a variety of cost effective techniques and to ensure the continued availability of door-to-door services for those that require such individual service for some or all of their travel requirements. This goal can best be achieved through a 'Family of Services' approach.

17.1 Accessible Conventional Services

Metrobus is moving towards full accessibility on its conventional fleet, and this goal should be pushed forward. Metrobus can begin to move towards designating fully accessible routes once there are enough accessible buses in the system to operate on all Core Routes. All low-floor buses purchased in 2010 onwards should be equipped with ramps and assigned to these routes, including spares if buses are out of service. The message to potential users is that a low-floor bus is available at all times of the day on an accessible route. Routes that are fully accessible should be indicated on the Metrobus website.

To encourage existing paratransit registrants to try the low-floor buses on the fixed route service, the dispatcher should receive training on the accessible fixed-route system to offer registered passengers alternatives when the paratransit cannot accommodate a passenger's trip request. Having Travel Training programs in place will also go a long way to achieving better utilization of the two systems. Mobility trainers are in limited supply and Metrobus should seek a partnership with local health care professionals and the Seniors Resource Centre to assist in providing this service. Volunteers may be available to assist seniors in overcoming any anxiety about using conventional services.

17.2 Accessible Stops

Transit users will also benefit from improved accessibility at bus stops and other facilities. The implementation of low-floor bus routes will need to be coordinated with the curbing of roads. Low-floor buses that stop on sections of the road that do not have street curbs or sidewalk connections will not be effectively utilized. The implementation of low-floor bus routes will therefore need to be coordinated with the curbing of streets, or at least specific stops without curbs. This level of accessibility provision should be part of the site plan approval process for new developments. Accessibility improvements at the existing Avalon and Village Mall terminals are two key issues that will also need to be addressed.

Winter conditions make it more difficult for many passengers with mobility limitations (particularly persons in wheelchairs or with vision impairments) to reach bus stops because of snowdrifts and banks on sidewalks and at transit stops. Stratford Transit (Ontario) has limited passenger loss in the winter because of their good snow clearing program. For this strategy to be successful in St. John's,

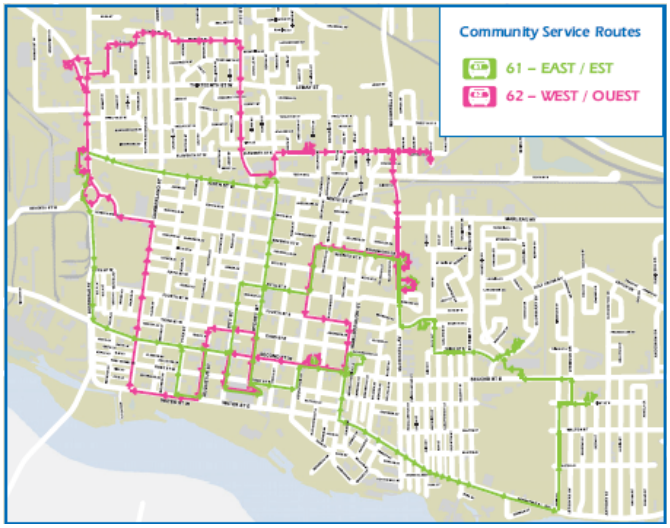
snow clearing should be coordinated with the roads department and prioritized at bus stops, shelters, and sidewalks on 'accessible' transit routes. Budgets will need to be increased.

17.3 Family of Services

It is recommended that Metrobus work with the City to implement a mutually beneficial "Family of Services" approach.

With a goal of allowing as many people as possible to remain active and in their own homes, the need to accommodate increased travel by a growing number of seniors with mobility issues is a challenge. Recognizing that some people will always require a door-to-door service and that this option is the most expensive service delivery model, many communities have looked to implement a "family of services" approach which includes the purchase of fully accessible transit buses for conventional routes and the introduction of travel training programs to encourage greater use of these services which have the lowest cost per trip. Some paratransit registrants are able to use conventional transit seasonally or during daylight hours and travel training helps overcome any concerns with trying this lower cost option. Short term fare incentives have also been used to encourage people to try conventional accessible systems.

Taxi scrip programs are another element of the family of services approach and can be implemented at lower costs per trip than a dedicated van service. Here the municipality typically sells a book of taxi coupons at a 50 percent discount to registered paratransit users and this provides the opportunity for spontaneous trip making.



Cornwall Transit Community Bus Routes

Community Bus services designed for the seniors market and for persons with mobility issues can also be effective in managing the increasing demand for travel. Community Bus uses a small accessible vehicle with a fixed route that is designed to provide accessibility over mobility. This means that bus routes are brought closer to key origins and destinations to minimize walking distance. Community Bus is targeted to seniors and persons with disabilities typically linking major origins and destinations of interest to this market (senior's and assisted living residences, malls, apartment buildings, medical facilities, recreation facilities, etc.).

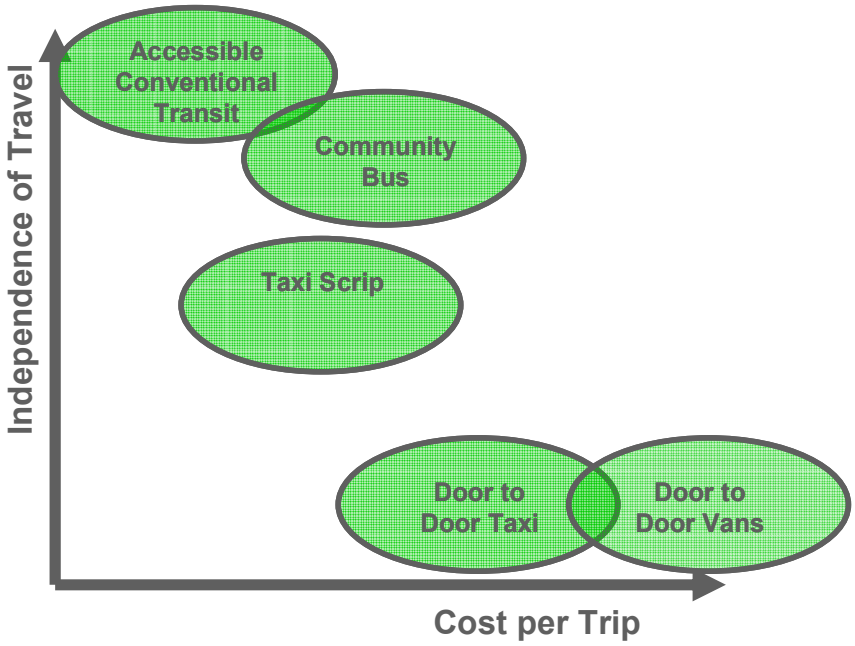
The advantage of this fixed route model is that it provides greater accessibility for residents, particularly for seniors and persons with disabilities. Some seniors find it difficult to use conventional fixed route local transit because the distance from their residence to a bus stop is a disincentive, or having to physically transfer between buses is an issue. When provided alongside a parallel paratransit service, it can reduce the overall demand on the more costly paratransit system.

A disadvantage of this service is the increased travel time, which will reduce the attractiveness of this service for some riders. Metrobus previously offered a Community bus service and obtained very low ridership. The need to integrate such a service with paratransit operations is significant and it is suggested that the Community bus also be used for at least one pre schedule paratransit trip on each route cycle to improve productivity and encourage registered users to try the service.

It is recommended that Metrobus explore opportunities to implement a Community bus service. This should begin with a survey of registered paratransit users, including their place of origin and key destinations. Metrobus should also target senior's homes to help design a service. Generally, service hours for Community Bus routes are between 9:00am and 4:00pm. If well designed and promoted, Community Bus services can generate 3 to 5 times the trips per hour of a typical paratransit service.

The overall Family of Services concept is illustrated in **Figure 24**. The conceptual illustration indicated the average cost per trip for each service offering and the level of independence of travel to persons with disabilities. The benefit of the Family of Services approach is to balance these to competing objectives to provide maximum accessibility while managing costs.

Figure 24 – Family of Service Concept



Recommendations:

1. Metrobus should designate certain routes as 'fully accessible' once there are enough accessible buses in place to operate all Core Routes (including spares);
2. Metrobus should work with the City to implement a "Family of Services" approach to conventional and paratransit services for seniors and persons with mobility issues;
3. Metrobus should begin discussions with the Senior's Resource Centre and other health providers to develop travel training opportunities for seniors and persons with disabilities;
4. Metrobus should implement a Community Bus route on a trial basis, in partnership with senior's organizations such as the Seniors Resource Centre. The service should be designed in consultation with senior's groups and the paratransit service provider; and
5. Metrobus should work with the City to improve snow clearing practices, particularly around bus stops used by a large senior's population.

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18.0 REGIONAL TRANSIT

There is a strong case to be made for the extension of Metrobus service into currently unserved areas in the greater St. John's region. The suburban corridor consisting of Paradise and Conception Bay South is the fastest growing area in the greater St. John's urban area. Two thirds of population growth in the Northeast Avalon Region between 2001 and 2006 occurred in Paradise and Conception Bay South and such residential growth is expected to continue. At the same time, employment opportunities and major community infrastructure is located in St. John's. This creates an increasing, car-oriented travel pattern between St. John's and Paradise/Conception Bay South (Unpublished Newfoundland and Labrador Department of Municipal Affairs Report, 2009).

While upgrades to the regional road infrastructure will help accommodate growth in these suburban corridor communities, congestion levels can be expected to increase especially at critical locations and intersections near major traffic generators. Parking supply issues will also become more critical, particularly in downtown St. John's and community goals to conserve energy, improve air quality and reduce emissions will be impacted (Unpublished Newfoundland and Labrador Department of Municipal Affairs Report, 2009).

Some of the more prominent existing regional roads include:

- Outer Ring Road – Provides connections to most of the arterial roadways radiating away from St. John's and outlying communities.
- Pitts Memorial Drive – Facilitates the movement of goods from the port facility in St. John's to the TransCanada Highway and industrial parks in Mount Pearl and Paradise. Could be a candidate for express industrial service.
- Kenmount Road – Major arterial for commuting traffic from Paradise and other areas to the O'Leary Industrial Park and the Avalon Mall.
- Topsail Road – Carries local and through traffic to Conception Bay South, Paradise, and Mount Pearl.

There are also plans for major road network improvements. The Torbay Bypass Road will provide for a faster connection between Torbay and the communities of Flatrock and Pouch Cove. Conception Bay South Bypass Road will facilitate faster travel to the southern portion of the Conception Bay South urban area. The connection of the Team Gushue Highway from Kenmount to the Harbour Arterial provides an opportunity for faster regional express service that may be worth exploring (Unpublished Newfoundland and Labrador Department of Municipal Affairs Report, 2009).

The 2006 census data shows that there is a large movement of workers into St. John's from communities within the Northeast Avalon Region, as well as other communities on Conception Bay, the southeastern coast of the Avalon Peninsula. There is also a large flow of workers into Mount Pearl, most likely to industrial areas on the west side of Mount Pearl.

The introduction of regional transit service would play a significant role in addressing current concerns and future growth pressures. Metrobus is ideally structured to take on a regional mandate for transit service delivery. With the assistance of the province, local municipalities have been able to achieve regional cooperation in the delivery of police, fire and water services, and based on experience in other jurisdictions a move to efficient region-wide transit services would require some

facilitation by the province. This would likely entail the formation of a regional implementation team which would include representatives from Metrobus and each participating municipality (St. John's, Mount Pearl, Paradise, Conception Bay South and Torbay as a priority). It would be important for service standards to be developed to guide a consistent performance based approach to service delivery across the region. This would ensure a minimum level of service for residents while maintaining agreed to financial performance targets. For example, to meet performance guidelines, it may be decided that a fixed route structure is not appropriate for a certain municipality, but instead park-and-ride lots with express service is more appropriate. The performance standards should be flexible enough to recognize that different operating strategies may be more effective in servicing different municipalities.

Governance and financial arrangements would be major topics to address and the provincial role as facilitator of regional cooperation is very important. Pending the development of a regional coordinating structure, Metrobus should continue to offer interregional services to municipalities outside the City of St. John's on a full cost recovery basis.

Mount Pearl

The service arrangement with Mount Pearl should be reviewed. Mount Pearl is located adjacent and to the southwest of St. John's. Its current population (2006) is 24,671 and it is served by Metrobus Routes 21 and 22 under a cost recovery contract.

- Route 21 runs 7 days a week at a 60 minute frequency and connects to Village Shopping Centre; and
- Route 22 has 3 weekday morning and 3 weekday afternoon runs at a 60 minute frequency and connects to Village Shopping Centre.

Average daily (weekday) ridership on Routes 21 and 22 are 389 and 106 respectively for a total of 495 passengers.

Total revenue service hours and ridership in Mount Pearl was compared to transit ridership in similar sized cities. This is illustrated in **Table 18.**

Table 18 – Mount Pearl Ridership Comparison

Municipality	Service Area Population	Revenue Service Hours per Capita	Ridership	Ridership/Capita
Mount Pearl, NL	24,671	0.28	139,000*	5.6
Corner Brook, NL	20,083	0.45	99,695	4.9
Whitehorse, Yukon	25,403	0.66	269,088	10.6
Yellowknife, NWT	19,155	0.48	167,958	8.8
Stratford, ON	32,000	1.01	547,484	17.1
Prince Albert, SK	34,000	0.53	259,608	7.6

*Note: ridership taken from passenger boardings on routes serving Mount Pearl from the 2007 Service Plan. Saturday ridership estimated at 50 percent of weekday and Sunday as 25 percent of weekday.

As illustrated, the City of Mount Pearl provides a low level of service compared to other municipalities within its peer group. This has led to a low level of ridership which might be expected to double if services were improved.

While Metrobus operates the service on behalf of Mount Pearl, it has little control over the planning and level of service provided. In 2007, several changes in service were recommended in Mount Pearl, however, none were adopted by the City Council.

While the low ridership does not impact Metrobus' bottom line (since it operates at full cost recovery), this situation has a negative impact on the image of Metrobus as an organization (i.e. the service is only for people without other travel options).

Without a regional transit agreement in place, Metrobus is faced with two options. The first is to continue with business as usual and accept the responsibility for operating service to Mount Pearl at full cost recovery.

The second option is to have more influence on the level of service provided in municipalities where Metrobus operates.

Metrobus has a set of Commission adopted service standards. These service standards should be applied throughout Metrobus' transit service area, regardless of the municipal jurisdiction in which it operates. Service standards should guide not only level of service but also performance. This may involve an update to service standards to identify performance targets such as service utilization or load factor that would identify minimum service levels and financial targets required in the system. For example, if Metrobus were to move towards a minimum 30 minute weekday peak period headway, this would need to be updated in the service standards document and applied to all routes, including those in municipalities that have contracted out service.

Metrobus should consider adopting a system-wide service standards document that would be applied to all municipalities that may be serviced by Metrobus. This will allow Metrobus to operate as an integrated system and the public to receive consistent treatment. Given the existing agreement in place, this may be applied on a move forward basis (i.e. for new municipalities that wish to receive service by Metrobus).

Metrobus should also work with the City of Mount Pearl to interline routes at the Village Mall. As previously identified, the current practice is for all Mount Pearl routes to terminate at the Village Shopping Centre and for buses to return to Mount Pearl. This creates a forced transfer for passengers and reduces the attractiveness of the service.

Recommendations:

1. Metrobus should request the Province to facilitate and assist municipalities in achieving regional cooperation in the provision of public transit services. This should include at a minimum transit services linking St. John's, Mount Pearl, Paradise, Conception Bay South and Torbay; and
2. In the short-term, Metrobus should begin discussions with the City of Mount Pearl to develop a service standards document which outlines a minimum level of service for passenger, regardless of political jurisdiction. Full service integration should also be explored. More directive standards should be set on a go forward basis (i.e. with new municipalities that request service by Metrobus).

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PART E: SUMMARY OF RECOMMENDATIONS AND NEXT STEPS

19.0 RECOMMENDATIONS

The report outlines a number of conclusions regarding the delivery of transit services in St. John's and Mount Pearl and recommended strategies that should be considered over the short to medium-term. A number of recommendations will need to be further reviewed and modified as part of a comprehensive operational review that should coincide with the successful implementation of a U-Pass at Memorial University or within the 2 to 5 year time frame.

The following presents a summary of key recommendations and implementation strategies. Each strategy makes reference to the section of the report that provides supporting rationale for the recommendation. A time period is also assigned for each recommendation which recognizes both priority and ease of implementation. These are:

IT - Immediate term (within 1 year)

ST – Short term (1 to 3 years)

MT – Medium term (3 to 5 years)

19.1 Transit Operations

While this study did not involve a detailed assessment of transit operations, a number of improvements to transit routes and services were recommended. Most of these involve improving service levels to meet the changing market realities.

The most significant conclusion is the need to continuously increase service levels to reflect the changing market reality. With a more prosperous St. John's area, travelling on Metrobus must be more competitive with the private automobile by providing a level of service that is flexible and convenient. Sixty minute service headways, long or circuitous routes and multiple transfers will not attract ridership. Achieving this objective involves greater investment in the transit system.

To mitigate this investment, exploration of opportunities to make better use of existing resources were also identified. Strategies to service low demand areas and periods were recommended as a way to reallocate less productive service hours to areas that require additional service.

While there are a number of changes that Metrobus can address immediately, most should be tied to a 5-year operational study update. Since the system underwent major changes in 2007, this should occur in the 2 to 5 year time-frame.

Table 19 - Transit Operations Recommendations

Recommendation	Timing	Next Steps
Route Designation (Section 10.1)		
Designate Route 15 as a Primary Route.	IT	Update service standards to include Route 15 as a Primary Route. No increase in operating or capital cost.
Designate Route 10 as a Base Route, including improvements to level of service.	ST	Seek Commission approval to increase revenue service hours. Update service standards to reflect new designation. Subject to budget availability and capital (buses required).
Route Structure (Section 10.2)		
Review corridor service opportunities between each of the major nodes within the system, including the potential provision of more direct two-way service.	ST	Complete as part of a five-year operational review update (2 to 5 year timeframe).
Explore the opportunity to increase the importance of the Memorial University/ Confederation Building node as a transfer point.	IT ST	Conduct passenger boarding/alighting survey at each terminal. Complete as part of a five-year operational review update (2 to 5 year timeframe) or with potential U-Pass opportunity at Memorial University.
Explore opportunities to interline routes at each of the terminals.	IT	Conduct a transfer trace and assessment of schedule compatibility for possible route pairs. Identify routes that should be interlined at each terminal. Initiate discussions with Mount Pearl to interline routes and avoid the forced transfer at the Village Mall terminal.
Hours of Service (Section 10.3)		
Explore opportunities to extend service hours in areas covered by Secondary Routes using applications for low demand periods or areas such as TransCab, Zone bus or industrial specials.	IT	Conduct passenger boarding and alighting counts to determine areas of low demand. Implement new approaches, subject to budget approval.

Recommendation	Timing	Next Steps
Maintain existing service hours as a minimum over the next two years.	ST	Reassess as part of a five-year operational review update (2 to 5 year timeframe) or with potential U-Pass opportunity at Memorial University.
Service Frequency (Section 10.4)		
Develop a strategy to improve frequencies to a minimum of 30 minutes during weekday peak periods and during the midday off-peak on all routes.	ST	Implement as part of a five-year operational review update (2 to 5 year timeframe). Where peak period service does not warrant 30 minute fixed route service, explore implementation of alternative service strategies such as TransCab or Zone Bus to achieve the 30 minute frequency standard at a lower cost.
Identify a strategy to improve frequencies to a minimum of 30 minutes during the midday off-peak on all routes.	MT	Complete as part of a five-year operational review update (2 to 5 year timeframe). Where off-peak service does not warrant 30 minute fixed route service, explore implementation of alternative service strategies such as TransCab or Zone Bus to achieve the 30 minute frequency standard at a lower cost.
Service to Post Secondary Institutions (Section 10.5)		
Identify opportunities to improve the level of service to Memorial University and CNA to capitalize on the transit market	IT	Complete as part of a five-year operation review update (2 to 5 year timeframe) Initiate discussions with Memorial University and CNA student union about the implementation of a U-Pass program. The first target should be undergraduates at Memorial University and CNA. Any agreement should be long term and take into account expansion requirements to meet anticipated growth demand.
Strategies to Service Low Demand Areas (Section 13.0)		
Initiate a Zone Bus and/or TransCab Strategy to provide better and more productive transit service in low demand areas/periods of the day.	IT	Collect and assess ridership per hour on a typical weekday, Sundays and Saturday's via a passenger boarding and alighting survey. Identify areas and periods of low demand and conduct a more complete review of low demand service strategies. Identify an area to conduct a pilot project for a Sunday zone bus for a 6 to 9 month period. Advertise the pilot to residents within the service area through the Metrobus website and a mail-out

Recommendation	Timing	Next Steps
		brochure on 'how to use the service'. Expand zone bus program to other areas/periods if successful.
Initiate discussions with potential partners for the implementation of Industrial special service strategies.	MT	Work initially with the Board of Trade and one large employer in an Industrial Park to spearhead the initiative. Identify other nearby employers who might participate in the special service and develop marketing and branding strategies. Work with these employers to survey employees and design an Industrial service offering that is tailored to shift times of participating employers. Identify utilization target or financial performance threshold for the provision of the special service. Operate service on a 6 to 9 month trial. Continue and expand if targets are met.

19.2 Fare Strategies

Fare strategies are an important component of a transit service. The strategy must be simple for accurate reporting, efficient for operations and encourage user migration from cash fare to the M-Card. Significant changes to the fare structure were not recommended at this time (this should be explored as part of a more detailed operational review). A significant observation is the success of the M-Card and further improvements and updates to the M-Card should be continued.

Table 20 - Fare Strategy Recommendations

Recommendation	Timing	Next Steps
Fare Strategies (Section 14.0)		
Expand the M-Card system and introduce more outlets, technology improvements, pricing strategies to develop higher ridership and compatibility with parking payment systems.	IT ST	This is an ongoing initiative. Expansion to parking payment system should be explored as an added convenience for Metrobus pass holders (i.e. provide a discount on parking for transit users that occasionally need to drive).
Move to a single cash fare to simplify ridership reporting and operations.	IT	The child cash fare could be increased in one or two stages to reach parity. Child ticket prices would remain the same so that users still have a discounted fare available for children.

Recommendation	Timing	Next Steps
Continue to encourage the Department of Health & Community Services to address issues of affordability regarding transit fares.	IT	Ongoing
Adopt an extended time transfer policy of 90 minutes.	IT	Ensure that transfers/equipment are compatible and develop a policy for drivers and a marketing strategy for users and businesses.

19.3 Accessibility

Accessibility issues will become increasingly important with an aging population. Current and growing transportation needs result in not only recommendations for Metrobus, but also coordination opportunities between conventional and paratransit services. While Metrobus should remain separate from the paratransit service operator, opportunities to work together and develop additional partnerships to effectively and efficiently address the travel needs of seniors and persons with disabilities should be explored.

Table 21 - Accessibility Recommendations

Recommendation	Timing	Next Steps
Family of Services (Section 17.1 and 17.3)		
Work with the municipality and Seniors Resource Centre to implement a "Family of Services" approach to conventional and paratransit services for seniors and persons with mobility issues.	ST	Initiate a detailed market review and transportation servicing plan. Initiate discussions with the Senior's Resource Centre and other health providers to identify travel training opportunities for seniors and persons with disabilities, including outreach, awareness and use of volunteers.
Designate certain routes as 'fully accessible' once there are enough accessible buses in place to operate all Core Routes (including spares).	ST	Install ramps and wheelchair tie downs on all buses. Designate all Base routes as fully accessible and ensure an adequate 'accessible' spare ratio for these routes. Indicate accessible routes on route maps and other communications. Work with the paratransit staff and educate them on accessible routes and the benefits of referring registered customers to accessible Metrobus routes. Consider a fare incentive strategy for registered paratransit users to try conventional services. Work with community organizations such as the Seniors Resource Centre to assist with education, awareness, service design and use of volunteers.

Recommendation	Timing	Next Steps
Implement a Community Bus route on a trial basis in partnership with the Seniors Resource Centre. The service should be designed in consultation with senior's groups and the paratransit service provider.	MT	Work with Senior's Resource Centre to identify seniors' residences and areas with a high seniors' population as well activity centres that attract seniors. Design a route with appropriate stops and a maximum one hour travel time in the bus. Establish a utilization target for the service (5 to 10 rides per hour) and seek funding partnerships. Work with Senior's Resource Centre to promote and market the route and conduct travel training. Launch the first route as a 6 to 9 month pilot. Operate during the midday period (9:00am to 4:00pm), Monday to Friday. Expand service if successful.
Accessible Bus Stops (Section 17.2)		
Work with the City to improve accessibility and snow clearing around bus stops and upgrade the passenger amenities.	IT	Initiate discussion with City regarding the importance of accessibility in inclement weather conditions. Identify priority stops with a high senior's population. This will require additional financial commitment.

19.4 Terminals, Shelters and Stops

A passengers' experience while waiting for a bus or transferring between buses is as significant as their experience on the bus. There is a need to improve a number of terminals within the Metrobus service area to benefit safety, accessibility, comfort and also efficiency of bus operations. This is necessary, particularly with an aging population, to encourage use. Many of these solutions will involve a redesign and potentially a relocation of existing terminals. Therefore, capital funds and partnership opportunities with property owners will need to be identified.

Table 22 – Terminals, Shelters and Stops Recommendations

Recommendation	Timing	Next Steps
Terminals (Section 12.1)		
Initiate feasibility studies with property owners for terminal improvements and transit priority measures at Avalon Mall and Village Shopping Centre.	MT	Identify potential funding sources / partnerships for new terminals/terminal redesign. Terminal should be designed for a single platform, flow through operation and be within walking distance of the nearest destination (i.e. the Mall). Provisions should include passenger amenities and information systems. Transit priority features should be incorporated at the terminal and the adjacent road network to facilitate safe and convenient access/egress.

Recommendation	Timing	Next Steps
		Prepare preliminary plans so that action can be fast tracked if funding sources are identified.
Review the potential for an expanded role for the Memorial University terminal, including a review of potential sites.	ST	Review with Memorial administration and integrate with University master plan. (Adoption of a U-Pass would accelerate the need for action).
Work with the city and various stakeholders on a study of downtown terminal/transfer point opportunities.	MT	Assess potential parcels to accommodate a single-platform terminal with 6 to 8 bays. Identify opportunities to integrate a transit terminal into new developments (multi-use structure or Mobility hub). Conduct a study to evaluate specific site (impact on routes, accessibility, travel time in adjacent corridors, traffic and parking and cost). Develop preliminary and detailed design.
Bus Stops (Section 12.2)		
Develop service standards that specify guidelines for stop location selection, including preference for near-side followed by far-side of intersections.	IT	Meet with City Engineering Department to provide rational for standard. Update service standards document.
Transit Shelters (Section 12.3)		
Strengthen process to identify priority shelter locations and make the process more transparent. A 15 percent target for shelter to stop ratio should be maintained.	IT	Update bus shelter warrants and priority setting process. Initiate a program to meet the 15 percent target within 5 years.

19.5 Communication and Coordination

There are number of elements fundamental to ridership growth and the success of transit that lie within the mandate of various city departments. Supportive land use and parking policies and implementation of appropriate traffic and transit signal priority measures would greatly increase the effectiveness of Metrobus operations without adding significantly to costs. Such measures would contribute to broad municipal goals related to the environment, reduced energy consumption, promotion of active transportation, job retention and solutions to parking and congestion issues.

Table 23 – Communication and Coordination Recommendations

Recommendation	Timing	Next Steps
Transit Priority (Section 11.0)		
Work with the City's Engineering Department to identify opportunities for cost effective transit priority solutions and include projects in road and traffic capital programs. Identify design improvements and transit priority opportunities in the vicinity of the Memorial University terminal.	IT	Establish a Transit Priority task force or similar group to lead the effort to enhance transit service in St. John's. Specifically, a Transit Priority task force would concern itself with moving forward the goals of: *a) Maintaining efficient transit service* *b) Achieving on-time performance targets* *c) Improving the image of public transit as a fast and reliable travel alternative.* Membership on this task force would include staff from Metrobus, Engineering, Public Works and Planning departments.
Assess applicability of investing in GPS or Infrared emitters on buses to facilitate transit signal priority on a more system wide basis.	ST	Implementation should be led by Engineering (Design and Construction) and specific locations/projects should be included in future capital budgets. An initial study may be required to determine feasibility of locations and appropriate technology.
Parking Management and Pricing (Section 15.0)		
Request the City to increase the cost of monthly downtown parking at City owned lots (parking cost equivalent or greater than a monthly transit pass).	ST	Establish a Task Force to address downtown accessibility and parking issues. This should include Metrobus representative at the staff level.
Work with the City to identify suitable 'park and ride' locations and development of a fare and service integration strategy.		
Encourage that the Cash in Lieu of Parking program be modified to include transit support as a possible solution to future parking issues.		
Encourage the implementation of the parking cash out program, (perhaps starting with city employees).		

Recommendation	Timing	Next Steps
Future Land Use and Development (Section 16.0)		
Work with the City to ensure that new development areas can be efficiently served by transit and are transit supportive.		Work with the Planning Department to develop transit supportive development guidelines. Identify key corridors where transit supportive development should be built. This should focus on intensification within walking distance of transit terminals and along connecting corridors (i.e. Core Routes). Initiate a review of transit oriented design practises which will reflect best practises for ongoing development in St. John's.

19.6 Regional Transit

The commission structure of Metrobus is an excellent model for transit service delivery and could be readily adapted to serve a broader regional travel market. Given recent and future demographic and land use trends, there is a growing need to provide effective and efficient public transit options throughout the greater St. John's area. To achieve such regional cooperation for transit as has been achieved for other services, there is an important role for the Province as a facilitator. Initiatives such as the U-Pass and provincial objectives for economic growth, the environment, poverty reduction and congestion relief would all benefit from this initiative.

Table 24 – Regional Transit Recommendations

Recommendation	Priority	Next Steps
Regional Transit Structure (Section 18.0)		
Request the Province to facilitate and assist municipalities in achieving regional cooperation in the provision of public transit services. This should include at a minimum transit services linking St. John's, Mount Pearl, Paradise, Conception Bay South and Torbay.	IT	Initiate discussion with the province and with representatives of each participating municipality. With the Province as facilitator, explore the service requirements, governance model and financing arrangements that would enable an appropriate level of regional transit service. Develop a regional transit service standards document to include minimum performance measures for level of service. This should not dictate the type of operation, but rather the level of service provided.
Initiate discussions with the City of Mount Pearl regarding agreement on an approved service standards document, including both financial performance and service standards.	ST	Work with Mount Pearl to implement full service integration and a higher level of service consistent with the needs of residents and businesses in the service area.

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APPENDIX A
Online Questionnaire Sample and Results

Introduction

Metrobus is evaluating its transit service and setting directions for the transit system for the next few years. The information provided by you will assist in shaping the future of Metrobus. Please take a moment to complete the following survey.

Transit Use

1. Have you used Metrobus in the last 3 months?

- ◯ Yes
- ◯ No

Non Transit Users

1. How familiar are you with:

	Not At All	Not Very	Somewhat	Very
Metrobus routes and schedules	◯	◯	◯	◯
Metrobus Transit Infoline	◯	◯	◯	◯
Metrobus website	◯	◯	◯	◯
The M-Card	◯	◯	◯	◯
Metrobus fares	◯	◯	◯	◯

2. What are your top 3 reasons for not using Metrobus? (please select 3 only)

- ☐ I live outside of St. John's/Mt. Pearl
- ☐ I own a car and prefer to drive
- ☐ I prefer to walk/cycle
- ☐ Schedules are not convenient
- ☐ The bus stop is too far from my home
- ☐ Travel times are too long on the bus
- ☐ My job requires me to have access to a vehicle
- ☐ Not familiar with services/routes
- ☐ I don’t feel safe on the bus
- ☐ I don’t feel safe waiting for the bus
- ☐ Buses are overcrowded
- ☐ Bus fares are too high
- ☐ Other (please specify)

3. Which of the following, if any, would get you to consider using Metrobus?

	Definitely Would Not	Probably Would Not	Probably Would	Definitely Would
More frequent service where I live	◯	◯	◯	◯
Shorter travel time	◯	◯	◯	◯
More reliable service	◯	◯	◯	◯
Lower fares	◯	◯	◯	◯
Bus stops located closer to my home	◯	◯	◯	◯
Higher costs to operating a car (parking and fuel)	◯	◯	◯	◯
Earlier start of service on weekdays (currently 6:00AM)	◯	◯	◯	◯
Later end of service on weekends (currently 12:30AM)	◯	◯	◯	◯
Increased bus service on Saturdays	◯	◯	◯	◯
Increased bus service on Sundays/Holidays	◯	◯	◯	◯
Better connections to major commercial/recreational/entertainment centres	◯	◯	◯	◯

Other (please specify)

4. How much do you agree or disagree with each of the following statements?

	Strongly Disagree	Somewhat Disagree	Neither Disagree Nor Agree	Somewhat Agree	Strongly Agree
Taking my car means that I have a better idea of when I will arrive at my destination than if I were to take public transit.	◯	◯	◯	◯	◯
Using public transit makes me feel less successful.	◯	◯	◯	◯	◯
I find public transit is generally dependable.	◯	◯	◯	◯	◯
I prefer to use my car to commute because it is not as crowded as public transit.	◯	◯	◯	◯	◯
I find that driving in and around the St. John's area is very stressful.	◯	◯	◯	◯	◯
I would take transit more often if it took less time for the buses to get to where they are going.	◯	◯	◯	◯	◯
I need my car during the day.	◯	◯	◯	◯	◯
Cars are simply more convenient than the bus, and I am willing to pay for the convenience.	◯	◯	◯	◯	◯
I am concerned about the high cost of owning and operating a car.	◯	◯	◯	◯	◯
The bus stop is too far away from where I live.	◯	◯	◯	◯	◯
I don't use public transit because I may need my car for other trips after work/school.	◯	◯	◯	◯	◯
No incentives will work, I will always drive over taking transit.	◯	◯	◯	◯	◯

5. When was the last time that you were on a bus for any reason?

- ◯ Within the last year
- ◯ 1 to 5 years ago
- ◯ 6 to 10 years ago
- ◯ More than 10 years ago
- ◯ Never

Transit Users

1. How long have you been using Metrobus?

- ◯ Less than 1 year
- ◯ 2 to 3 years
- ◯ 3 to 5 years
- ◯ Over 5 years

2. In an average week, how many one-way trips do you take on Metrobus? (Transferring between buses to arrive at your destination is still considered a one-way trip; i.e. home to work is a one-way trip even if transfers are required)

- ◯ less than 1
- ◯ 1 to 4
- ◯ 5 to 10
- ◯ 11 to 14
- ◯ more than 14

3. How do you normally pay for your trip on Metrobus?

- ◯ Cash
- ◯ 10-Ride Card
- ◯ Monthly Pass
- ◯ Semester Pass

4. When you are using Metrobus for your primary trip, are you required to transfer between buses to reach your destination?

- ◯ Yes
- ◯ No

Transit Users

1. How many transfers are required to reach your destination?

- ◯ 1
- ◯ 2
- ◯ more than 2

Transit Users

1. In the past 12 months, the average number of transit trips I take on a weekly basis has:

- ◯ Increased
- ◯ Decreased
- ◯ Stayed the same
- ◯ Not applicable, I'm a new rider

2. How familiar are you with:

	Not At All	Not Very	Somewhat	Very
Metrobus routes and schedules	◯	◯	◯	◯
Metrobus Transit Infoline	◯	◯	◯	◯
Metrobus website	◯	◯	◯	◯
The M-Card	◯	◯	◯	◯
Metrobus fares	◯	◯	◯	◯

3. What are your top 3 reasons for using Metrobus (please select 3 only)?

- ☐ No alternative transportation
- ☐ Don't drive
- ☐ Cheaper than other types of transportation
- ☐ Better for the environment
- ☐ Want to save time
- ☐ Want to avoid parking hassles and costs
- ☐ Comfortable /relaxing
- ☐ Service is convenient
- ☐ Other (please specify)

_____

4. How would you rate the following elements of Metrobus services?

	Excellent	Good	Fair	Poor
Cleanliness	◯	◯	◯	◯
Cost of bus fares	◯	◯	◯	◯
Convenience of fare (i.e. M-Card)	◯	◯	◯	◯
Frequency of service	◯	◯	◯	◯
Hours of service	◯	◯	◯	◯
Travel time/ directness of route	◯	◯	◯	◯
Comfort	◯	◯	◯	◯
Weekend service level	◯	◯	◯	◯
Proximity to bus route	◯	◯	◯	◯
Access to information	◯	◯	◯	◯
Driver friendliness	◯	◯	◯	◯
Reliability	◯	◯	◯	◯
Transit Terminals	◯	◯	◯	◯

5. What improvements to Metrobus would get you to consider taking transit more often?

	Definitely Would Not	Probably Would Not	Probably Would	Definitely Would
More frequent service where I live	◯	◯	◯	◯
Shorter travel time	◯	◯	◯	◯
More reliable service	◯	◯	◯	◯
Lower fares	◯	◯	◯	◯
Bus stops located closer to my home	◯	◯	◯	◯
Earlier start of service on weekdays (currently 6:00AM)	◯	◯	◯	◯
Later end of service on weekends (currently 12:30AM)	◯	◯	◯	◯
Increased bus service on Saturdays	◯	◯	◯	◯
Increased bus service on Sundays/Holidays	◯	◯	◯	◯
Better connections to major commercial/recreational/entertainment centres	◯	◯	◯	◯

Other (please specify)

6. What is your primary purpose for using Metrobus? (please select only one option)

- ◯ Travel to/from Work
- ◯ Travel to/from University
- ◯ Travel to/from Other post secondary institution (college)
- ◯ Travel to/from School (secondary or elementary)
- ◯ Travel to/from Shopping
- ◯ Travel to/from Medical appointments
- ◯ Travel to/from Visits
- ◯ Travel to/from Recreation

2007 Service Change

In 2007, Metrobus made significant changes to the transit service provided to its customers.

1. Are you familiar with the changes that were made?

- ◯ Yes
- ◯ No
- ◯ Somewhat

2007 Service Change

1. Did you ride Metrobus before the service change in 2007?

- ◯ Yes
- ◯ No

2007 Service Change

1. How would you rate your experience with Metrobus since the 2007 service changes:

	Significantly Improved	Improved	The Same	Worse	Significantly Worse
Value received for bus fare	◯	◯	◯	◯	◯
Frequency of service	◯	◯	◯	◯	◯
Hours of service	◯	◯	◯	◯	◯
Proximity to bus stop	◯	◯	◯	◯	◯
Access to information	◯	◯	◯	◯	◯
Reliability (buses within schedules)	◯	◯	◯	◯	◯
Travel time	◯	◯	◯	◯	◯
Weekend service	◯	◯	◯	◯	◯
Need to transfer	◯	◯	◯	◯	◯
Overall service	◯	◯	◯	◯	◯

2. The 2007 service changes have led me to:

- ◯ Increase my use of Metrobus
- ◯ Decrease my use of Metrobus
- ◯ Continue to use Metrobus with the same frequency as I did before the service change
- ◯ Stop using the service
- ◯ Not Applicable, I started using the service after 2007

3. Would you like to participate in a future focus group to discuss the changes?

- ◯ Yes
- ◯ No

Contact Information

1. Please fill out your contact information below:

Name	
E-mail	
Address	
Telephone Number	

Demographics

1. Which community are you a resident of? (if out of province student please indicate where you live while attending school in St. John's)

- ◯ St. John's Central
- ◯ St. John's West
- ◯ St. John's East
- ◯ Mt. Pearl
- ◯ Kilbride
- ◯ Donovans
- ◯ Southlands/Southbrook
- ◯ Torbay/Middle Cove
- ◯ Paradise
- ◯ Conception Bay South
- ◯ Pouch Cove
- ◯ Goulds
- ◯ Bay Bulls/Witless Bay
- ◯ Portugal Cove/St. Philips
- ◯ Other (please specify)

2. Please indicate your gender?

- ◯ Female
- ◯ Male

3. Please indicate what age category you are in:

- ◯ 0-19
- ◯ 20-24
- ◯ 25-34
- ◯ 35-44
- ◯ 45-54
- ◯ 55-64
- ◯ 65-74
- ◯ 75+

4. How many vehicles are available in your household?

- ◯ 0
- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4

5. Which of the following categories best represent your income?

- ◯ less than $20,000
- ◯ $20,000 - $39,999
- ◯ $40,000 - $59,999
- ◯ $60,000 - $79,999
- ◯ $80,000 or more

Thank You

Thank you for completing this questionnaire and providing valuable information for this study. Please press "done" to complete the survey. For more information please visit the study webpage at transitstudy@metrobus.com

1.0 INTRODUCTION

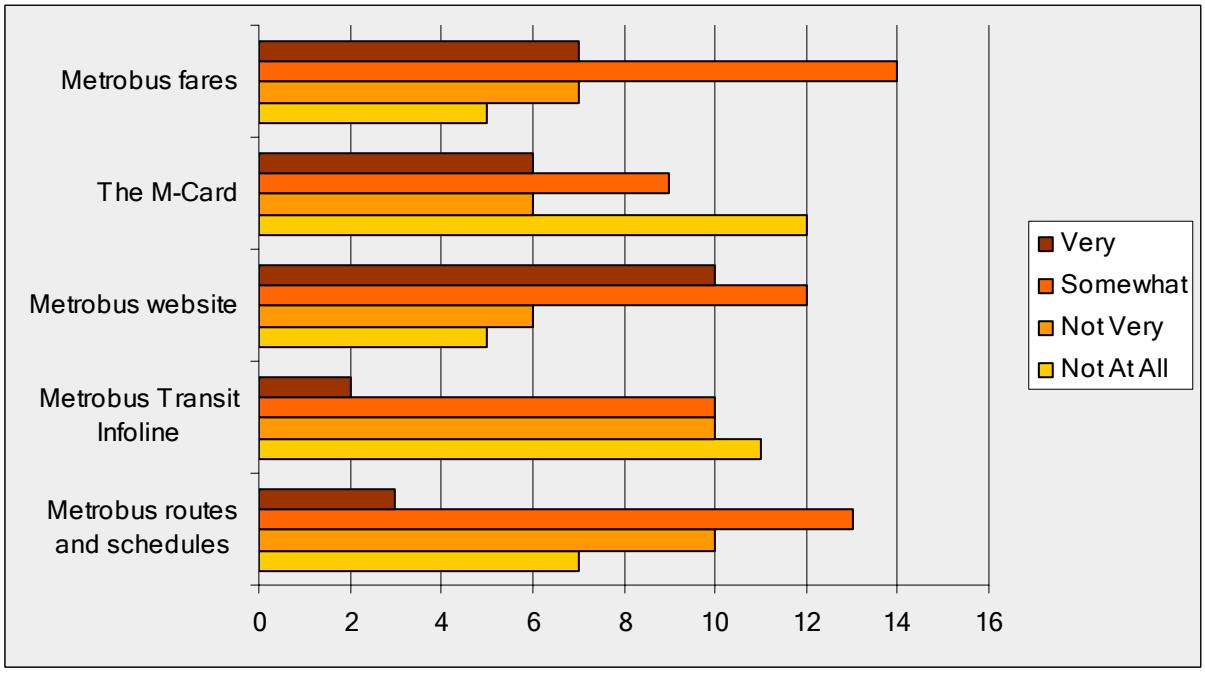
An online survey for the general public was developed and placed on Metrobus' study webpage. The survey was placed on the Metrobus website in March 2010 and comments were collected until Wednesday June 23rd, 2010. Overall, 373 completed responses were received, of which 325 or 87 percent were from residents of St. John's and Mount Pearl. The survey queried respondents on their demographics, use of Metrobus, attitudes towards Metrobus, and their opinions about the service since the 2007 changes. The survey also allowed respondents to add their contact info for inclusion in the focus group.

The first question asked whether the respondent has used Metrobus in the past 3 months. Respondents that responded that they have not were identified as "non-transit users". Nine (9) percent of respondents were identified as non-transit users.

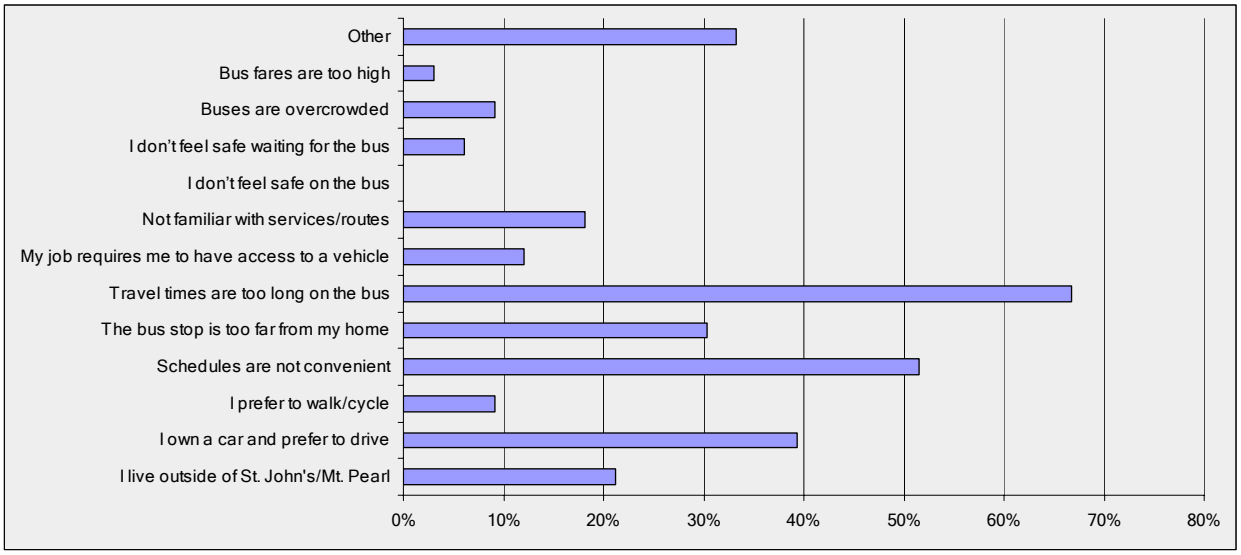
2.0 NON TRANSIT USERS

The following targeted questions were asked to respondents that indicated that they do not use Metrobus.

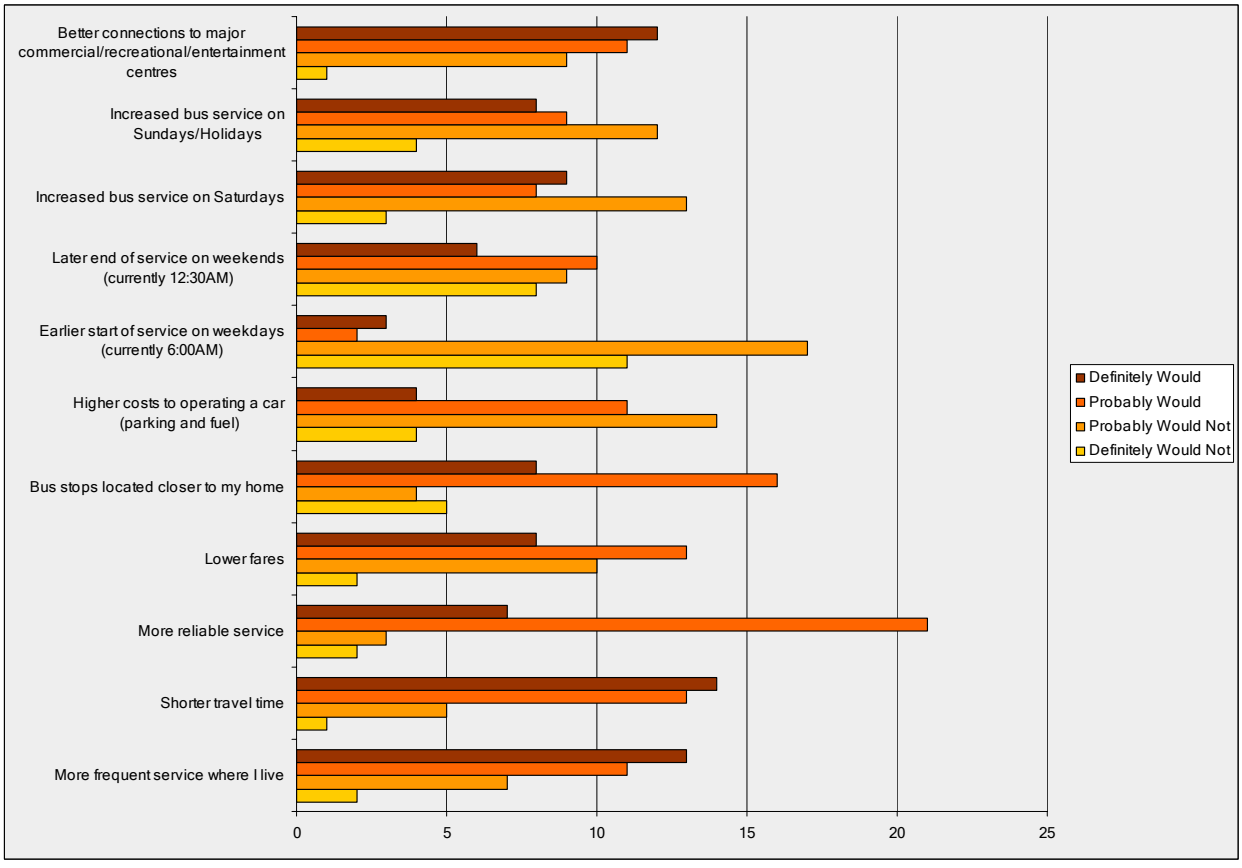
2.1 Question: How familiar are you with:



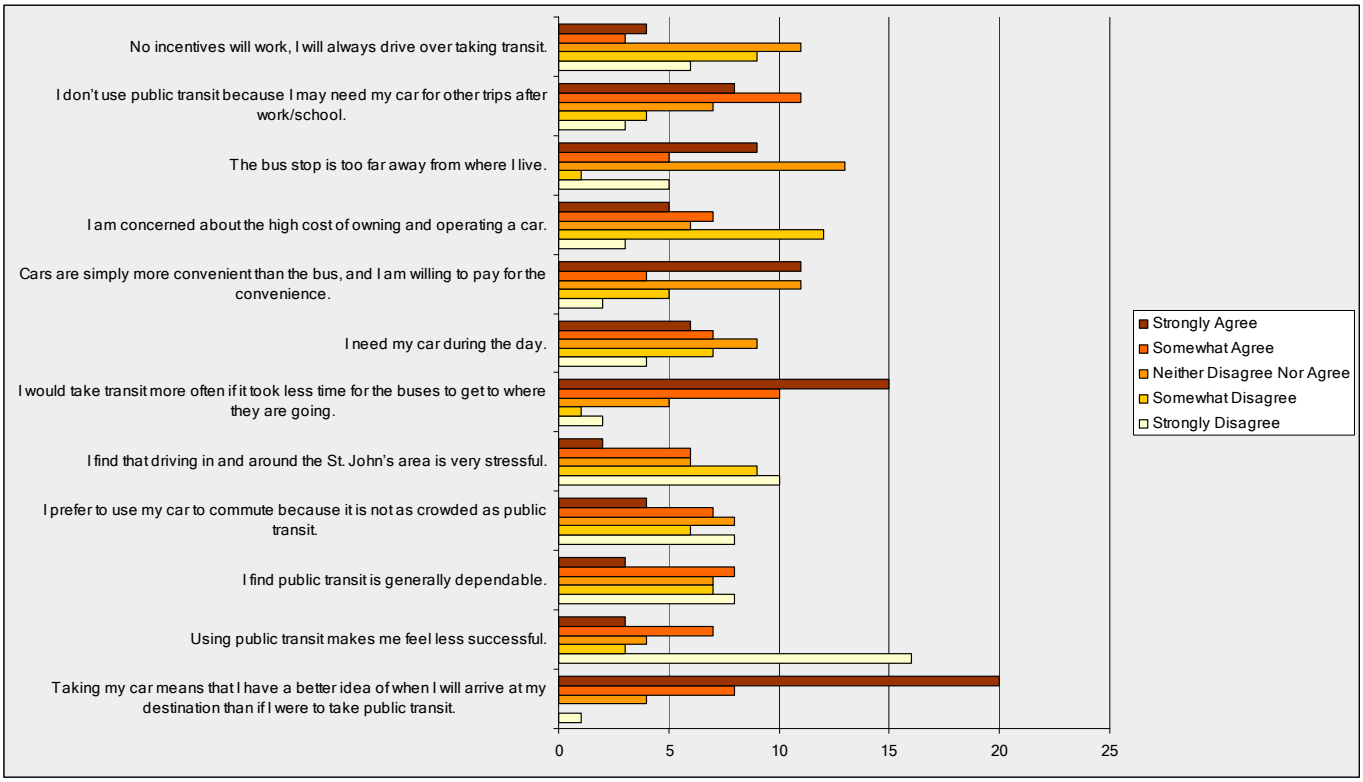
2.2 Question: What are your top 3 reasons for not using Metrobus?



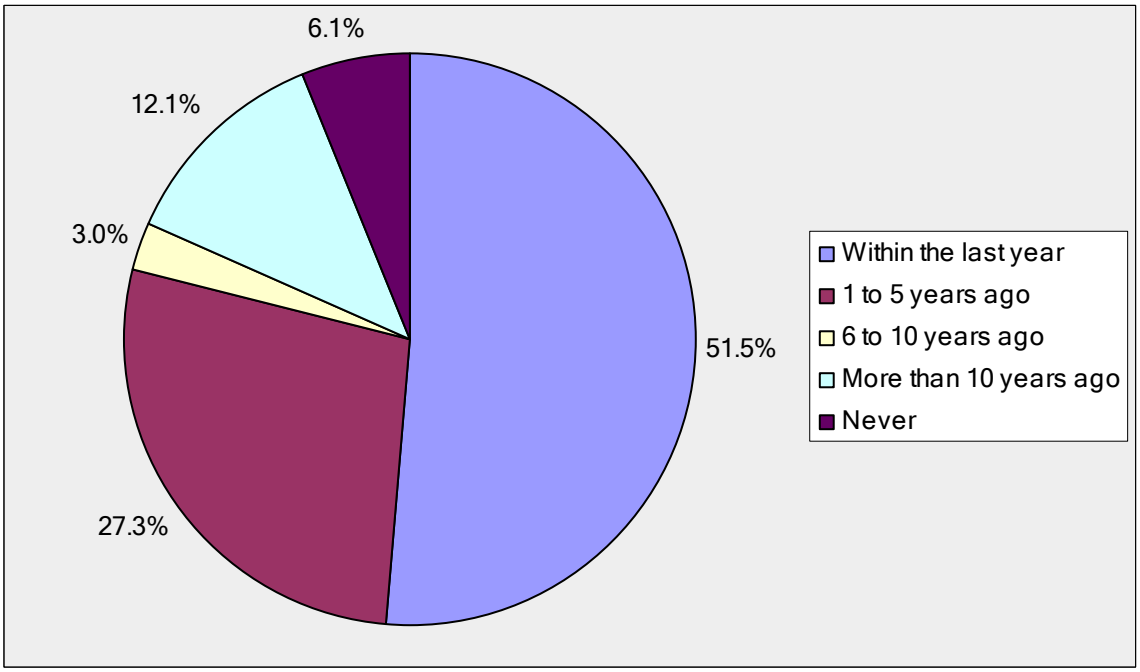
2.3 Question: Which of the following, if any, would get you to consider using Metrobus?



2.4 Question: How much do you agree or disagree with each of the following statements?



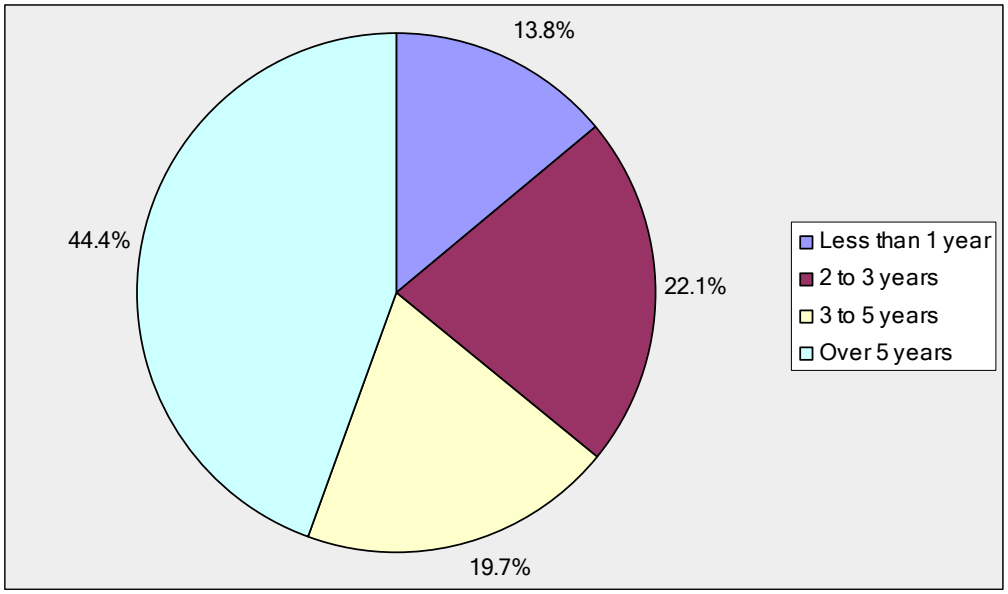
2.5 Question: When was the last time that you were on a bus for any reason?



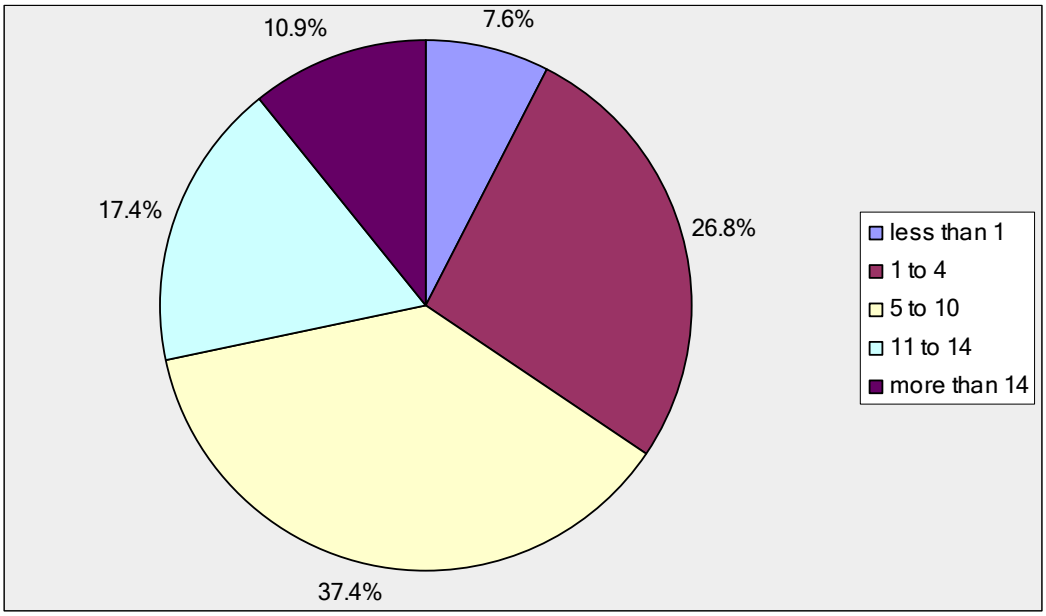
3.0 TRANSIT USERS

The following targeted questions were asked to respondents that indicated that they are regular users of Metrobus.

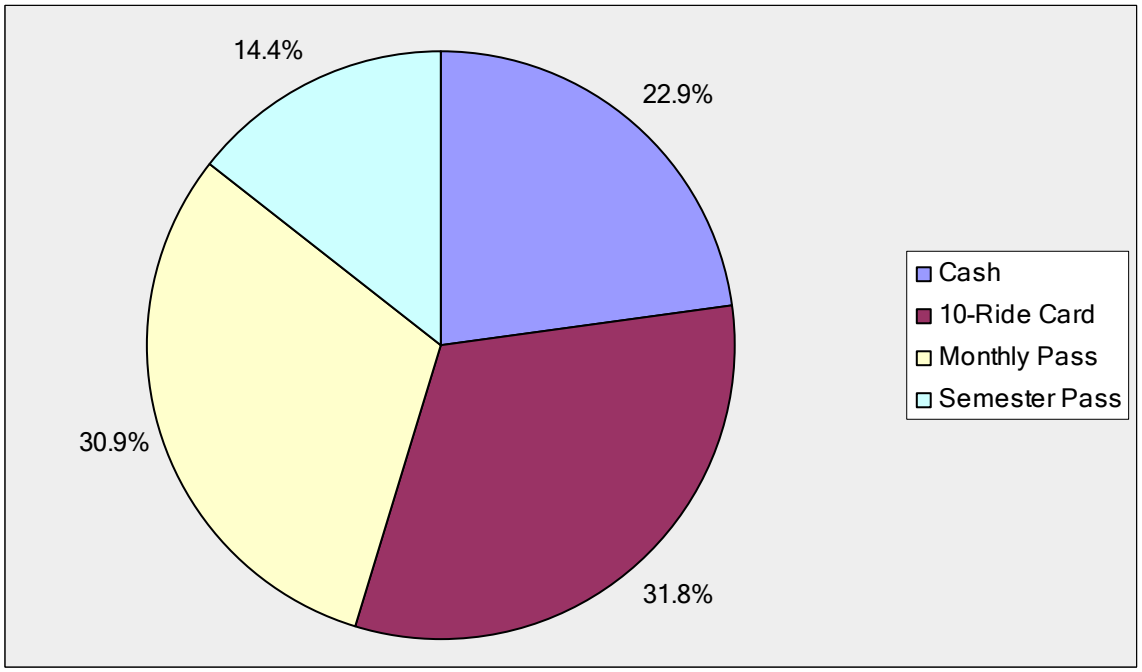
3.1 Question - How long have you been using Metrobus?



3.2 Question: In an average week, how many one-way trips do you take on Metrobus? (Transferring between buses to arrive at your destination is still considered a one-way trip; i.e. home to work is a one-way trip even if transfers are required)



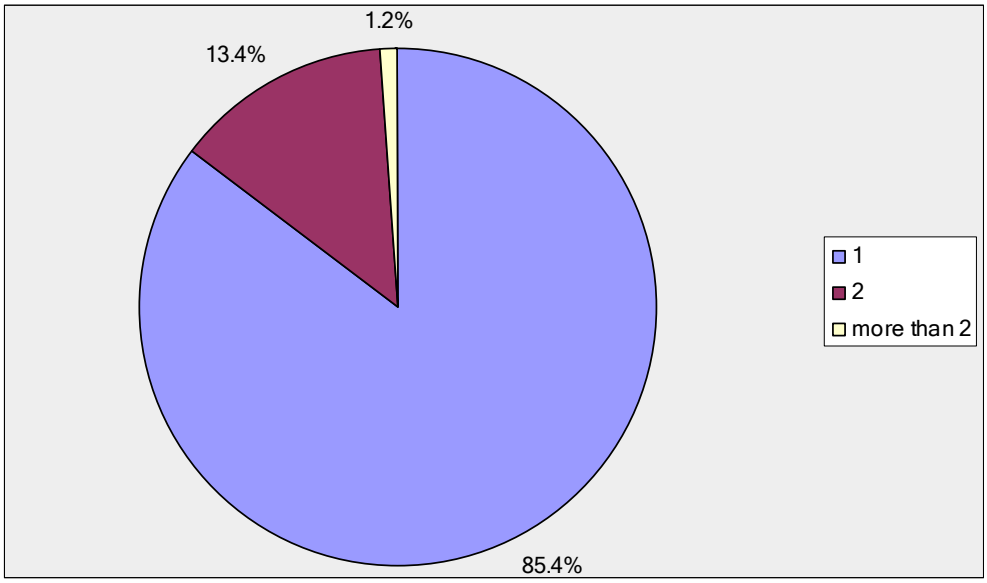
3.3 Question: How do you normally pay for your trip on Metrobus?



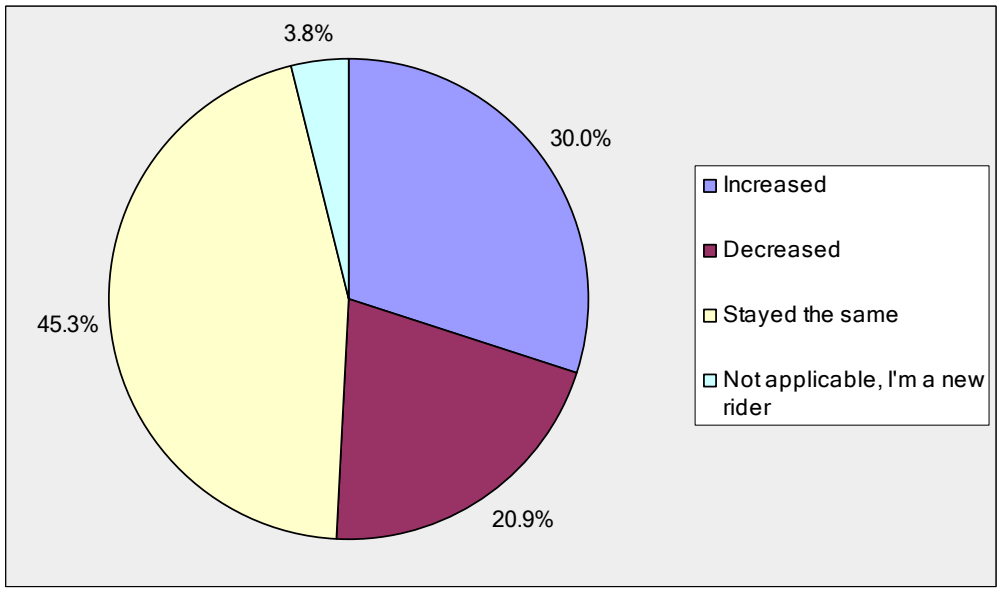
3.4 Question: When you are using Metrobus for your primary trip, are you required to transfer between buses to reach your destination?

- Yes: 48%
- No:52%

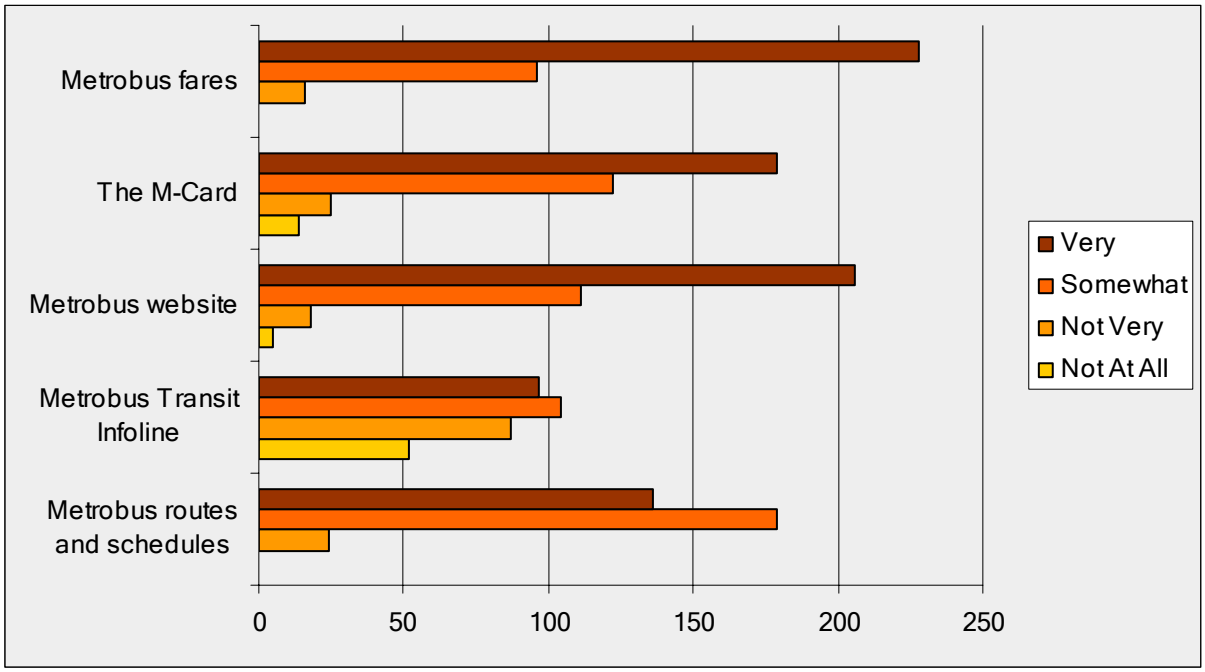
3.5 Question: How many transfers are required to reach your destination?



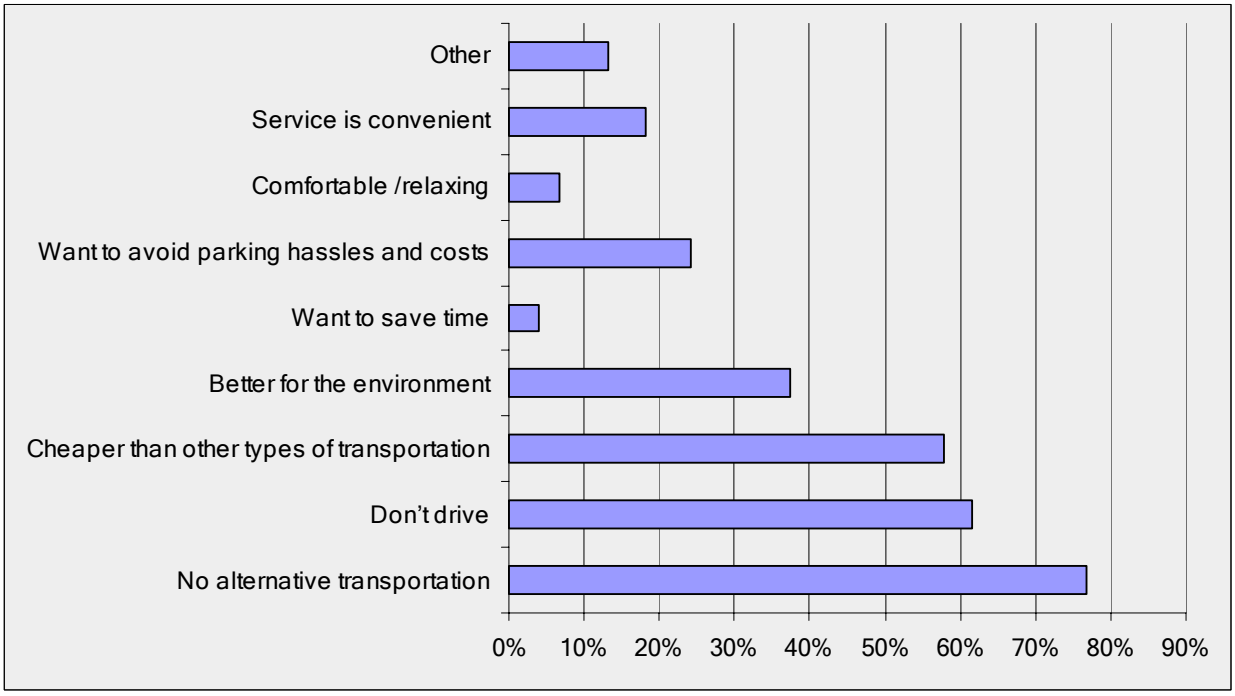
3.6 Question: In the past 12 months, the average number of transit trips I take on a weekly basis has:



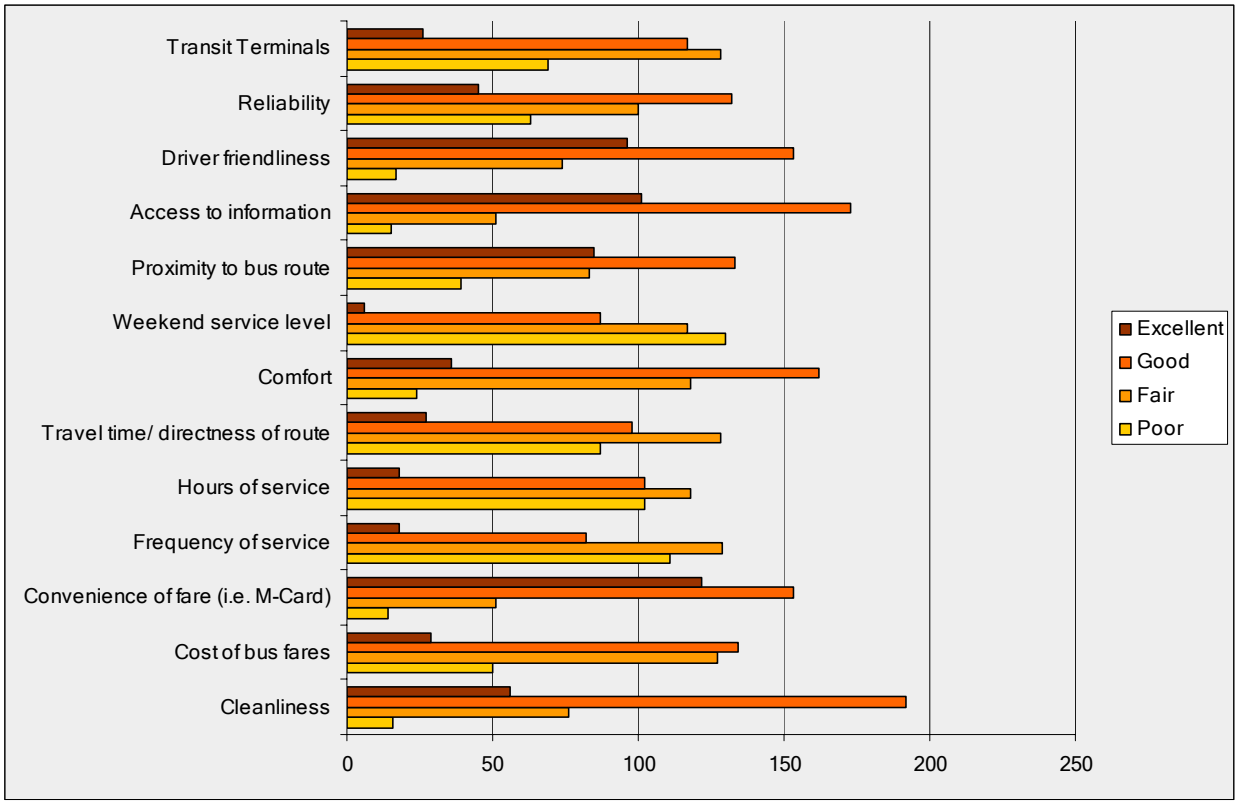
3.7 Question: How familiar are you with:



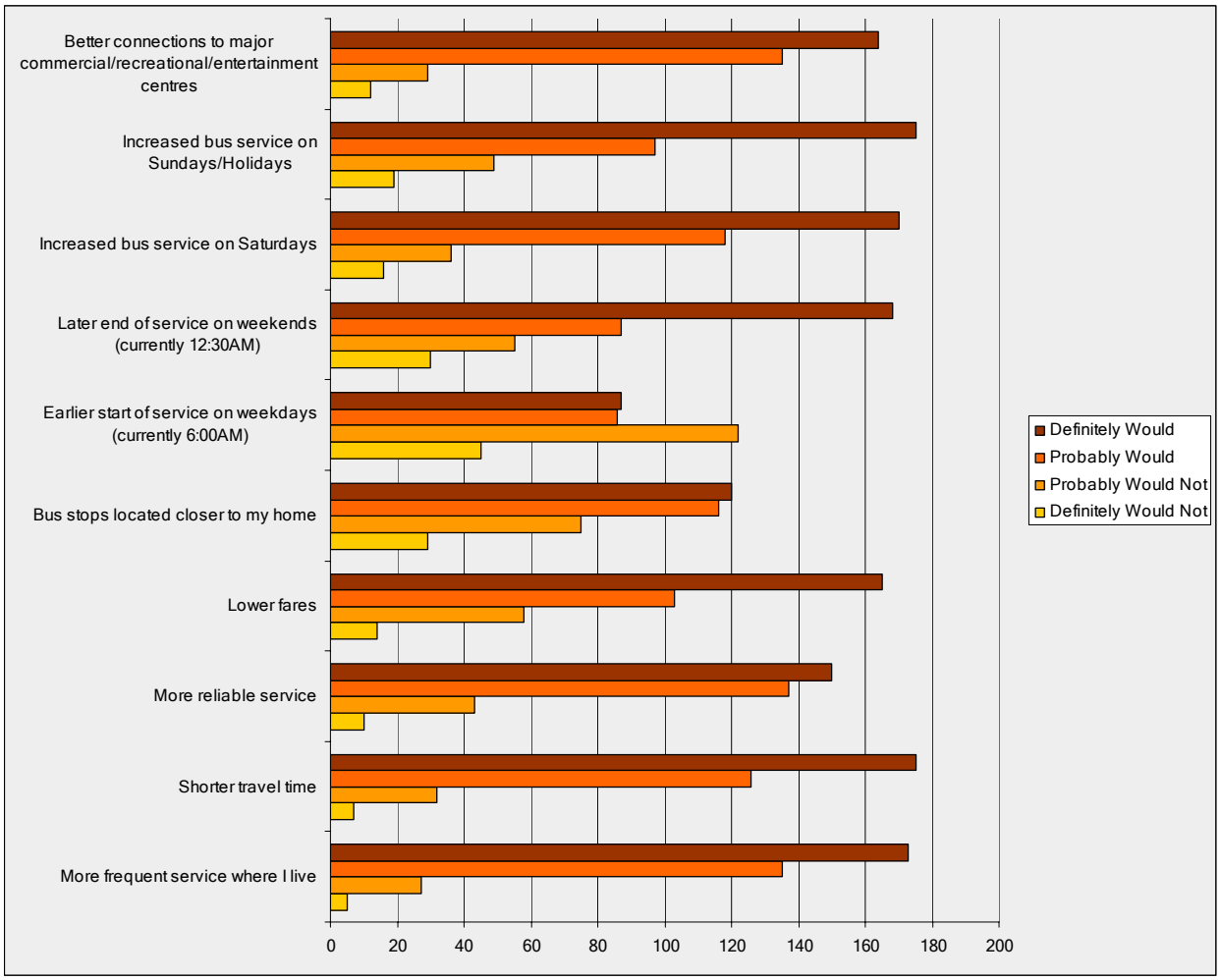
3.8 Question: What are your top 3 reasons for using Metrobus?



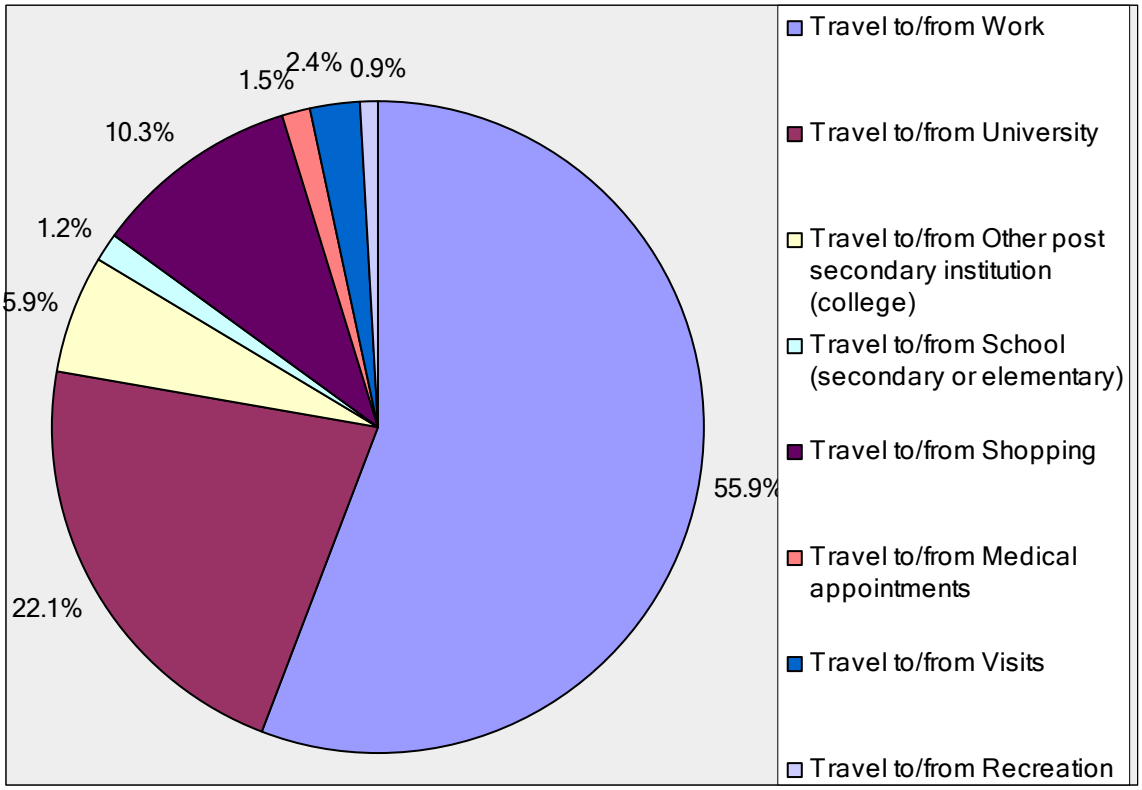
3.9 Question: How would you rate the following elements of Metrobus services?



3.10 Question: What improvements to Metrobus would get you to consider taking transit more often?



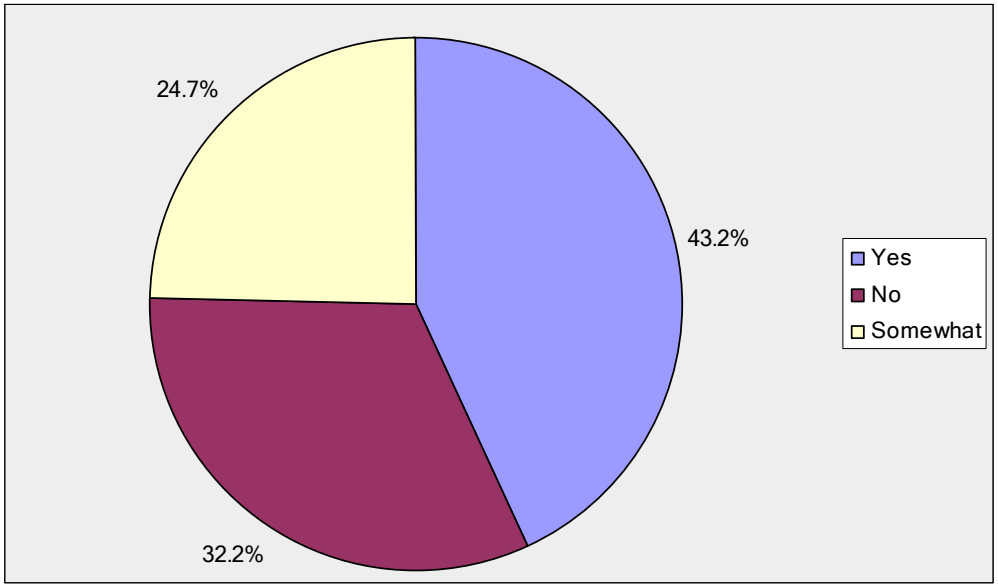
3.11 Question: What is your primary purpose for using Metrobus?



4.0 2007 SERVICE CHANGES

Respondents were asked if they were familiar with 2007 service changes and if they used Metrobus before the 2007 service changes. Those that were familiar and used Metrobus prior, were asked a series of questions regarding the 2007 service changes.

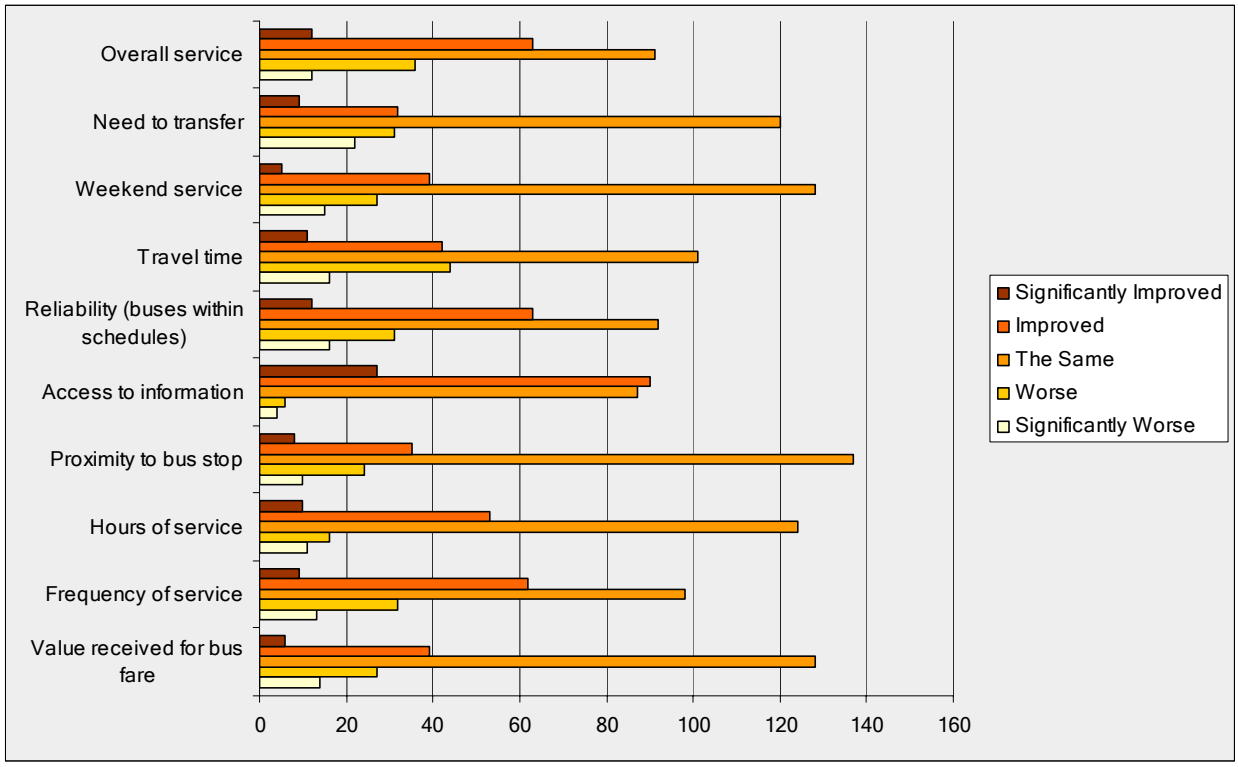
4.1 Question: Are you familiar with the changes that were made?



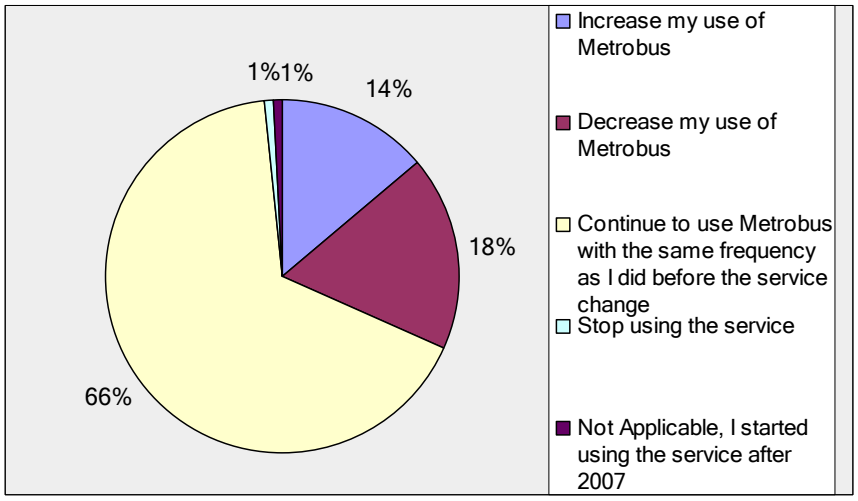
4.2 Question: Did you ride Metrobus before the service change in 2007?

- Yes: 84%
- No: 16%

4.3 Question: How would you rate your experience with Metrobus since the 2007 service changes:



4.4 Question: The 2007 service changes have led me to:



4.5 Question: Would you like to participate in a future focus group to discuss the changes?

- Yes: 40%
- No: 60%

5.0 DEMOGRAPHICS

All respondents were asked to provide information pertaining to their demographics.

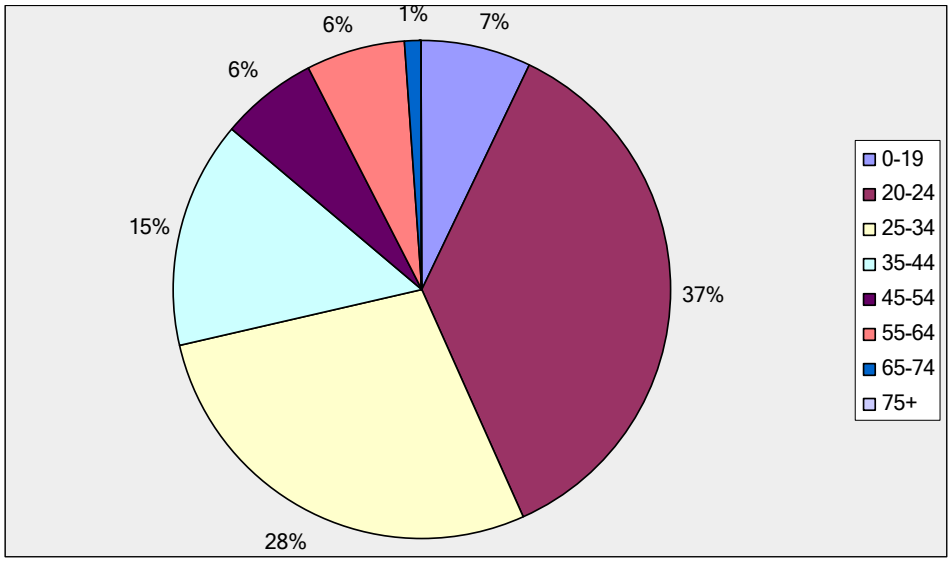
5.1 Question: Which community are you a resident of?

St. John's Central	30.3%
St. John's West	22.8%
St. John's East	28.1%
Mt. Pearl	5.9%
Kilbride	2.7%
Donovans	0.0%
Southlands/Southbrook	0.8%
Torbay/Middle Cove	0.8%
Paradise	1.6%
Conception Bay South	1.1%
Pouch Cove	0.0%
Goulds	1.9%
Bay Bulls/Witless Bay	0.3%
Portugal Cove/St. Philips	0.8%
Other	2.9%

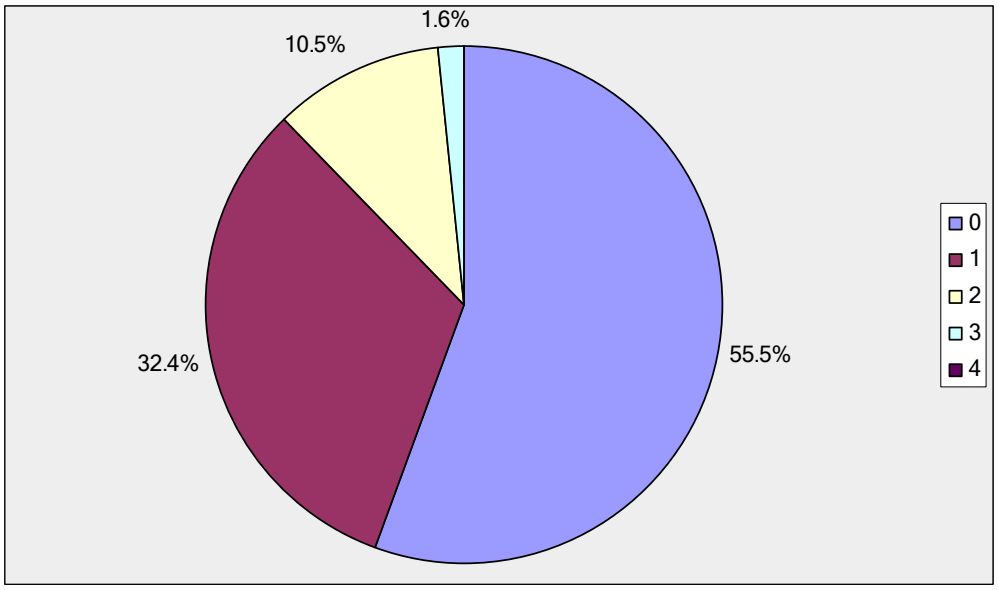
5.2 Question: Please indicate your gender:

- Female: 65%
- Male: 35%

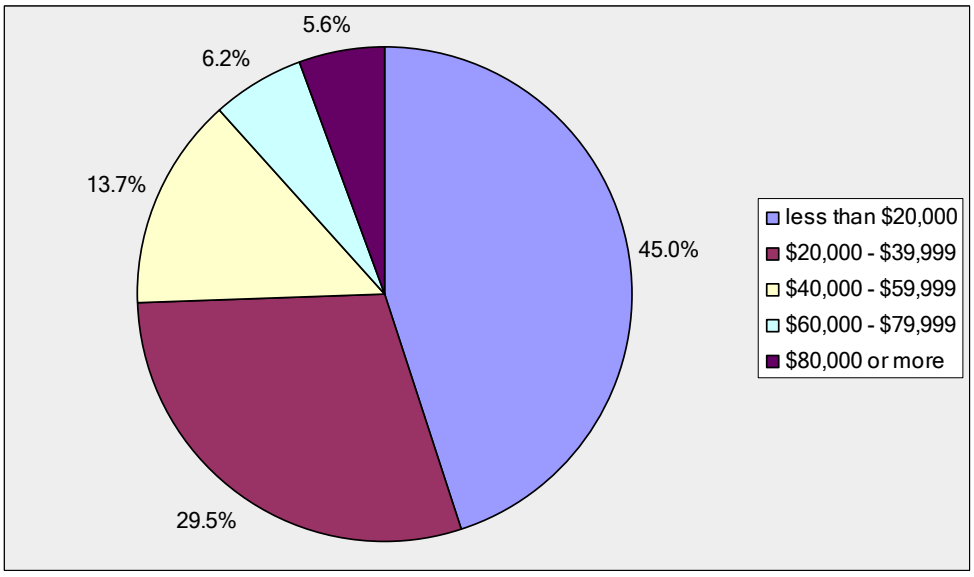
5.3 Question: Please indicate what age category you are in:



5.4 Question: How many vehicles are available in your household?



5.5 Question: Which of the following categories best represent your income?



APPENDIX B
CNA Student Survey and Results

Introduction

Metrobus is evaluating its transit service and setting directions for the transit system for the next 5 years. The information provided by you will assist in shaping the future of Metrobus. Please take a moment to complete the following survey.

Student Profile/Transit Use

1. Are you a full time or part time student?

- ◯ Full-time
- ◯ Part-time

2. What school/campus are you attending?

- ☐ College of the North Atlantic - Prince Philip Drive Campus
- ☐ College of the North Atlantic - Ridge Road Campus

3. How familar are you with:

	Not at all	Not very	Somewhat	Very
Metrobus routes and schedules	◯	◯	◯	◯
Metrobus Transit Infoline	◯	◯	◯	◯
Metrobus website	◯	◯	◯	◯
The M-Card	◯	◯	◯	◯
Metrobus fares	◯	◯	◯	◯

4. Have you used Metrobus in the last 3 months?

- ◯ Yes
- ◯ No

Non-Transit Users

1. Do you live on campus? If not, where?

- ◯ On campus
- ◯ St. John's Central
- ◯ St. John's West
- ◯ St. John's East
- ◯ Mt. Pearl
- ◯ Kilbride
- ◯ Donovans
- ◯ Southlands/Southbrook
- ◯ Torbay/Middle Cove
- ◯ Paradise
- ◯ Conception Bay South
- ◯ Pouch Cove
- ◯ Goulds
- ◯ Bay Bulls/Witless Bay
- ◯ Portugal Cove/St. Philips
- ◯ Other (please specify)

Non Transit Users Off Campus

1. How do you get to campus? (Please select all that apply)

- [ ] Car (driver)
- [ ] Car (passenger)
- [ ] Bike
- [ ] Walk
- [ ] Other (please specify)

2. What are your top 3 reasons for not using Metrobus? (please select 3 only)

- [ ] I live outside of St. John's/Mt. Pearl
- [ ] I own a car and prefer to drive
- [ ] I prefer to walk/cycle
- [ ] Schedules are not convenient
- [ ] The bus stop is too far from my home
- [ ] Travel times are too long on the bus
- [ ] I don't feel safe on the bus
- [ ] I don't feel safe waiting for the bus
- [ ] Not familiar with service/routes
- [ ] Buses are overcrowded
- [ ] Bus fares are too high
- [ ] Other (please specify)

3. Which of the following, if any, would get you to consider using Metrobus?

	Definitely Would Not	Probably Would Not	Probably Would	Definitely Would
More frequent service where I live	◯	◯	◯	◯
Shorter travel time	◯	◯	◯	◯
More reliable service	◯	◯	◯	◯
Lower fares	◯	◯	◯	◯
Bus stops located closer to my home	◯	◯	◯	◯
Higher costs to operating a car (parking and fuel)	◯	◯	◯	◯
Earlier start of service on weekdays (currently 6:00AM)	◯	◯	◯	◯
Later end of service on weekdays (currently 12:30AM)	◯	◯	◯	◯
Increased bus service on Saturdays	◯	◯	◯	◯
Increased bus service on Sundays/Holidays	◯	◯	◯	◯
Better connections to major commercial/recreational/entertainment centres	◯	◯	◯	◯

Other (please specify)

Non Transit Users On Campus

1. What are your top 3 reasons for not using Metrobus? (please select 3 only)

- [ ] Bus stop is too far from my residence
- [ ] I own a car and prefer to drive
- [ ] I prefer to walk/cycle
- [ ] Schedules are not convenient
- [ ] Travel times are too long on the bus
- [ ] I don't feel safe on the bus
- [ ] I don't feel safe waiting for the bus
- [ ] Not familiar with service/routes
- [ ] Buses are overcrowded
- [ ] Bus fares are too high
- [ ] Other (please specify)

2. Which of the following, if any, would get you to consider using Metrobus?

	Definitely Would Not	Probably Would Not	Probably Would	Definitely Would
More frequent service where I live	◯	◯	◯	◯
Shorter travel time	◯	◯	◯	◯
More reliable service	◯	◯	◯	◯
Lower fares	◯	◯	◯	◯
Bus stops located closer to my home	◯	◯	◯	◯
Higher costs to operating a car (parking and fuel)	◯	◯	◯	◯
Earlier start of service on weekdays (currently 6:00AM)	◯	◯	◯	◯
Later end of service on weekdays (currently 12:30AM)	◯	◯	◯	◯
Increased bus service on Saturdays	◯	◯	◯	◯
Increased bus service on Sundays/Holidays	◯	◯	◯	◯
Better connections to major commercial/recreational/entertainment centres	◯	◯	◯	◯

Other (please specify)

Transit Users

1. Do you live on campus? If not, where?

- ◯ On Campus
- ◯ St. John's Central
- ◯ St. John's West
- ◯ St. John's East
- ◯ Mt. Pearl
- ◯ Kilbride
- ◯ Donovans
- ◯ Southlands/Southbrook
- ◯ Torbay/Middle Cove
- ◯ Paradise
- ◯ Conception Bay South
- ◯ Pouch Cove
- ◯ Goulds
- ◯ Bay Bulls/Witless Bay
- ◯ Portugal Cove/St. Philips
- ◯ Other (please specify)

2. In an average week, how many one-way trips do you take on Metrobus? (Transferring between buses to arrive at your destination is still considered a one-way trip; i.e. home to school is a one-way trip even if transfers are required)

- ◯ less than 1
- ◯ 1 to 4
- ◯ 5 to 10
- ◯ 11 to 14
- ◯ more than 14

3. How do you normally pay for your trip on Metrobus?

- ◯ Cash
- ◯ 10-Ride Card
- ◯ Monthly Pass
- ◯ Semester Pass

4. What is your PRIMARY purpose for using Metrobus? (please select only one option)

- ◯ Getting to/from school
- ◯ Getting to/from work
- ◯ Nightlife/entertainment
- ◯ Recreation
- ◯ Shopping
- ◯ Visiting friends/family
- ◯ Getting to/from appointments

5. When you are using Metrobus for your primary trip, are you required to transfer between buses to reach your destination?

- ◯ Yes
- ◯ No

Transit Users

1. How many transfers are required to reach your destination?

- ◯ 1
- ◯ 2
- ◯ more than 2

Transit Users

1. What other trips do you use Metrobus for? (please select all that apply)

- [ ] Getting to/from school
- [ ] Getting to/from work
- [ ] Nightlife/entertainment
- [ ] Recreation
- [ ] Shopping
- [ ] Visiting friends/family
- [ ] Getting to/from regional transportation terminals
- [ ] Getting to/from appointments
- [ ] None of the above
- [ ] Other (please specify)

2. What are your top 3 reasons for using Metrobus (please select 3 only)?

- [ ] No alternative transportation
- [ ] Don't drive
- [ ] Cheaper than other types of transportation
- [ ] Better for the environment
- [ ] Want to save time
- [ ] Want to avoid parking hassles and costs
- [ ] Comfortable /relaxing
- [ ] Service is convenient
- [ ] Other (please specify)

3. How would you rate the following elements of Metrobus services?

	Excellent	Good	Fair	Poor
Cleanliness	◯	◯	◯	◯
Cost of bus fares	◯	◯	◯	◯
Convenience of fare (i.e. M-Card)	◯	◯	◯	◯
Frequency of service	◯	◯	◯	◯
Hours of service	◯	◯	◯	◯
Travel time/ directness of route	◯	◯	◯	◯
Comfort	◯	◯	◯	◯
Weekend service level	◯	◯	◯	◯
Proximity to bus route	◯	◯	◯	◯
Access to information	◯	◯	◯	◯
Driver friendliness	◯	◯	◯	◯
Reliability	◯	◯	◯	◯
Transit Terminals	◯	◯	◯	◯

4. What improvements to Metrobus would get you to consider taking transit more often?

	Definitely Would Not	Probably Would Not	Probably Would	Definitely Would
More frequent service where I live	◯	◯	◯	◯
Shorter travel time	◯	◯	◯	◯
More reliable service	◯	◯	◯	◯
Lower fares	◯	◯	◯	◯
Bus stops located closer to my home	◯	◯	◯	◯
Earlier start of service on weekdays (currently 6:00AM)	◯	◯	◯	◯
Later end of service on weekdays (currently 12:30AM)	◯	◯	◯	◯
Increased bus service on Saturdays	◯	◯	◯	◯
Increased bus service on Sundays/Holidays	◯	◯	◯	◯
Better connections to major commercial/recreational/entertainment centres	◯	◯	◯	◯

Other (please specify)

_____

Universal Student Transit Pass

One of the most effective, transit developments in the past decade has been the introduction of U-Passes at many Canadian Universities and Community Colleges. The U-Pass results from a specific negotiation typically conducted among the transit system, the administration of the post secondary institution and the student association. When implemented all students pay a fixed price and have full access to transit on a semester or annual basis. Typically, the cost is significantly discounted because the pass in universal (all students contribute to the program).

Usually a student referendum is required to launch the initiative and experience has shown that once implemented there is very high approval rating by all parties. Aside from the specific benefits related to low travel cost, reduced campus parking requirements, increased location choice for accommodations, reduction of neighbourhood issues, etc, there is the significant benefit that accrues to the environment from the growth in transit usage by post secondary students.

1. How interested would you be in CONA exploring the implementation of a U-Pass?

- ◯ Very interested
- ◯ Somewhat interested
- ◯ Not Interested

Thank You

Thank you. Please press "done" to complete the survey. For more information please visit the study webpage at transitstudy@metrobus.com

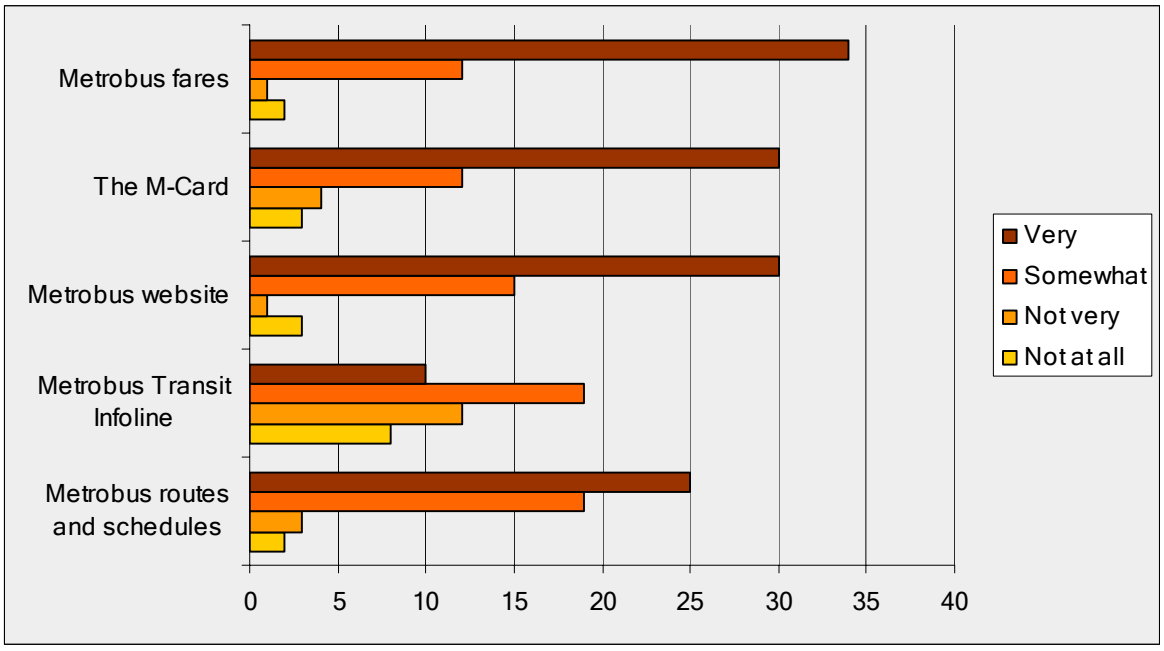
1.0 INTRODUCTION

An on-line survey targeting the students at the College of the North Atlantic (St. John's campuses) was distributed via email on Monday April 12th 2010. The purpose of the survey was to collect information on student transit ridership, travel patterns, and their attitudes and opinions about Metrobus. The survey was available until Monday June 21st, 2010. Great cooperation was provided by Neil Moores at the College.

A total of 49 completed surveys were collected, which accounts for about 2 percent of the total student population. The survey results are summarized below. Overall:

- 94% of respondents were full time students;
- 67% of respondents attend the Prince Phillip Drive Campus;
- 33% of respondents attend the Ridge Road Campus; and
- 86% of respondents were transit users (have used Metrobus in the past 3 months).

Students were asked about their familiarity with certain Metrobus characteristics. The results are summarized in the below chart.

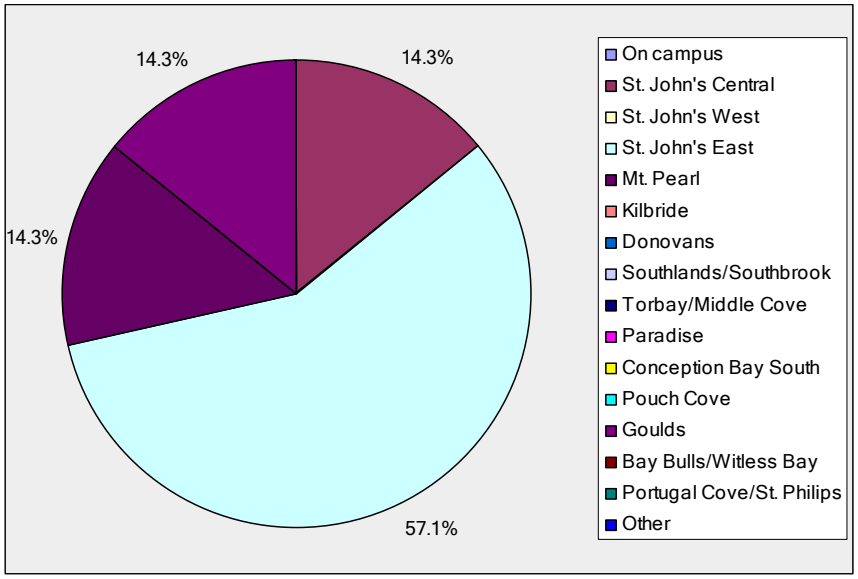


Separate questions were asked for both transit users and non-transit users. The results of the survey are presented below.

2.0 NON-TRANSIT USER RESULTS

The following targeted questions were asked to students that indicated that they do not use Metrobus. This represents 14 percent of total responses (or 7 responses in total).

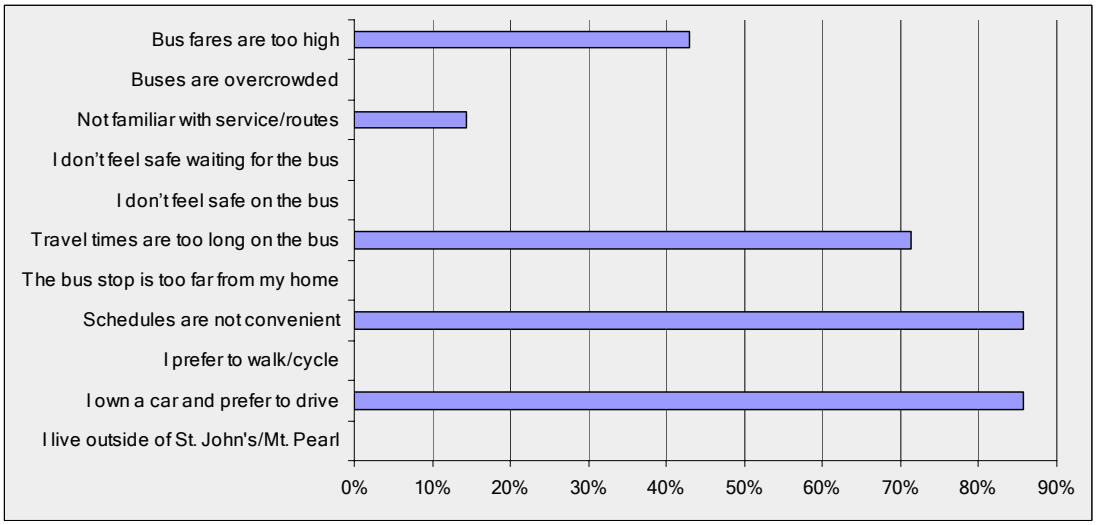
2.1 Question: Do you live on campus? If not, where?



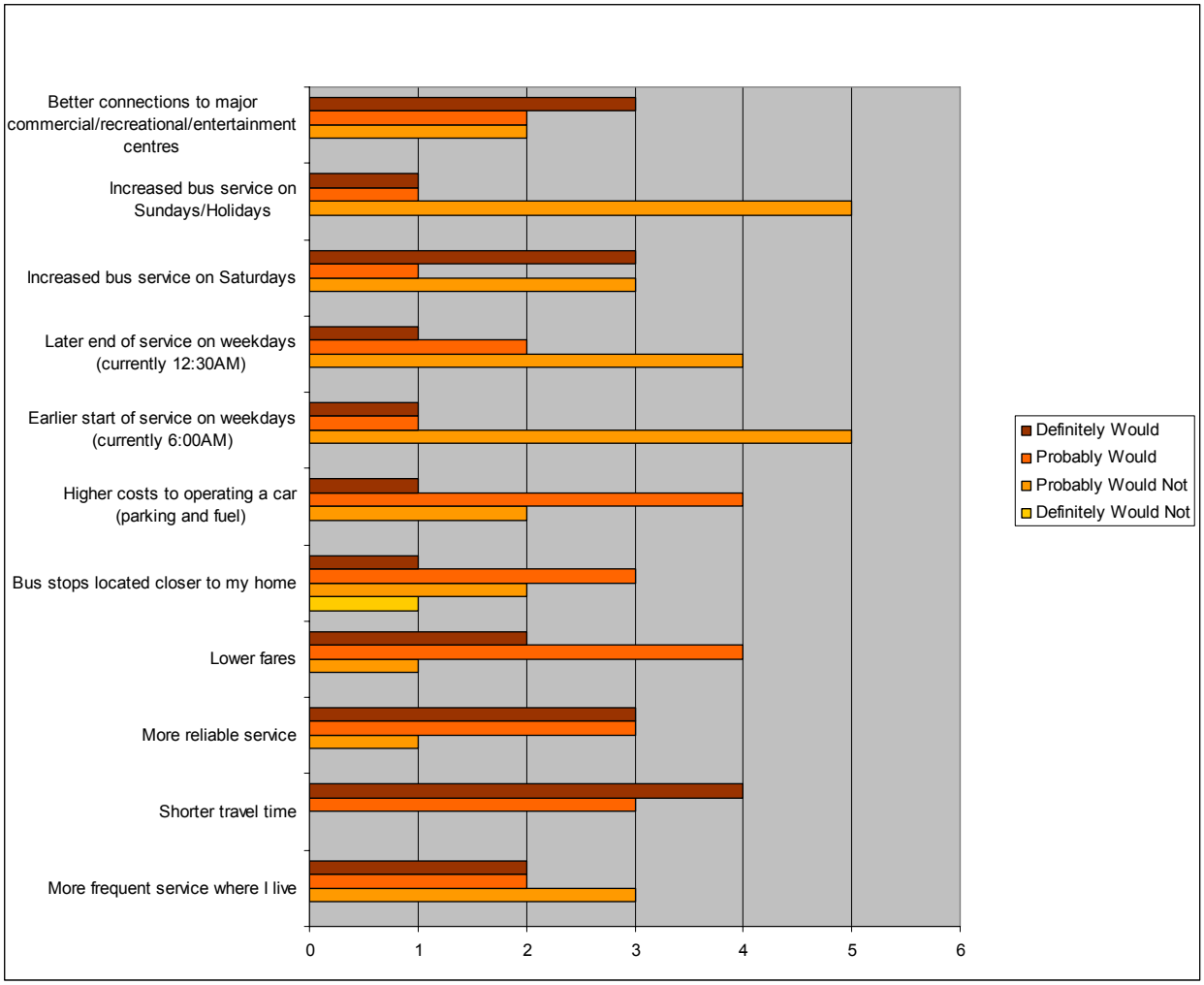
2.2 Question: How do you get to campus?

- One hundred (100) percent indicated Car (driver)

2.3 Question: What are your top 3 reasons for not using Metrobus?



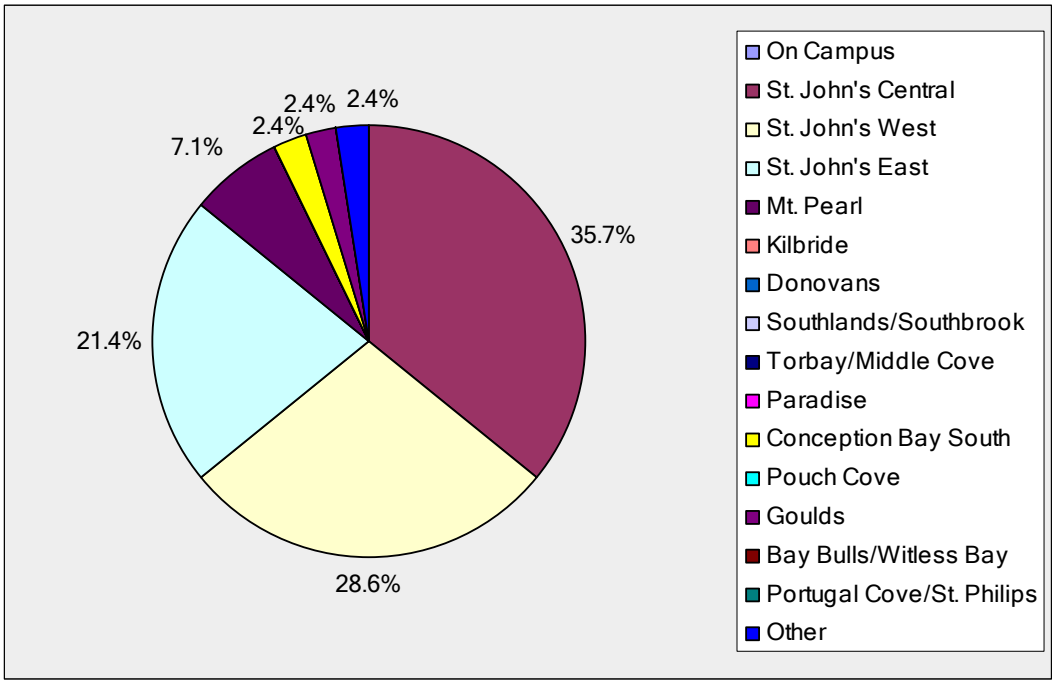
2.4 Question: Which of the following, if any, would get you to consider using Metrobus?



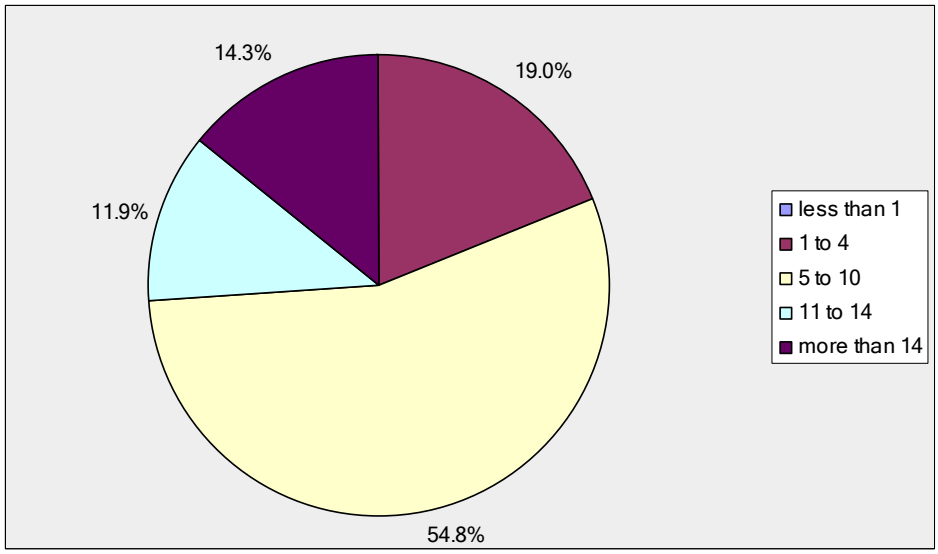
3.0 TRANSIT USERS RESULTS

About 86 percent of respondents indicated that they have used Metrobus over the past three months. The following present results of the survey.

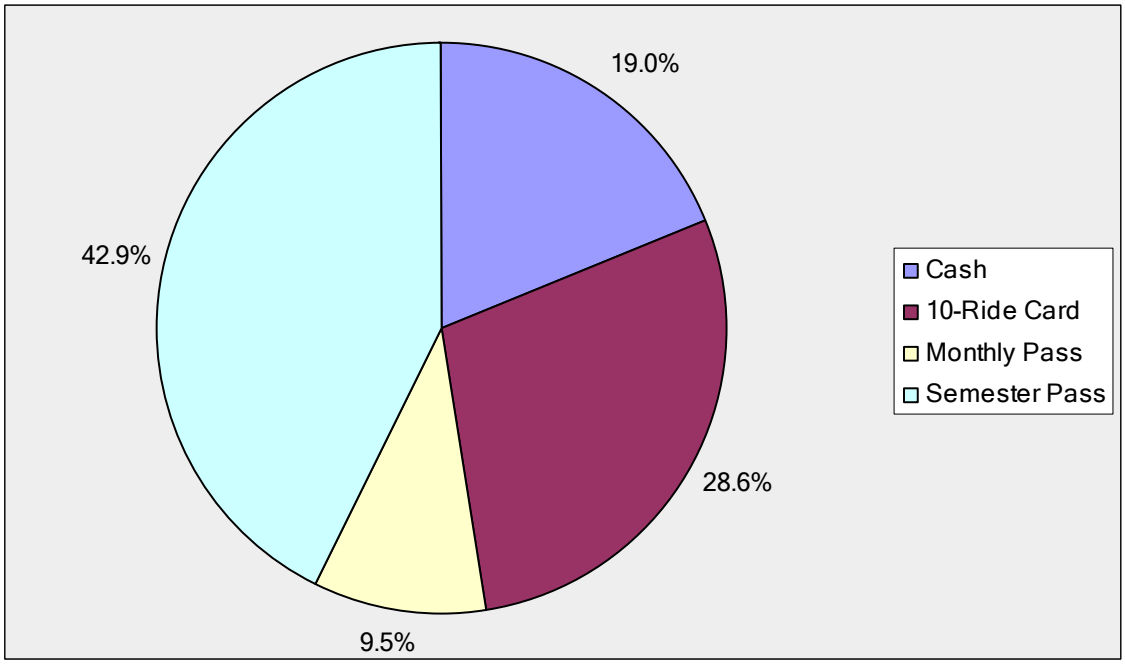
3.1 Question: Do you live on campus? If not, where?



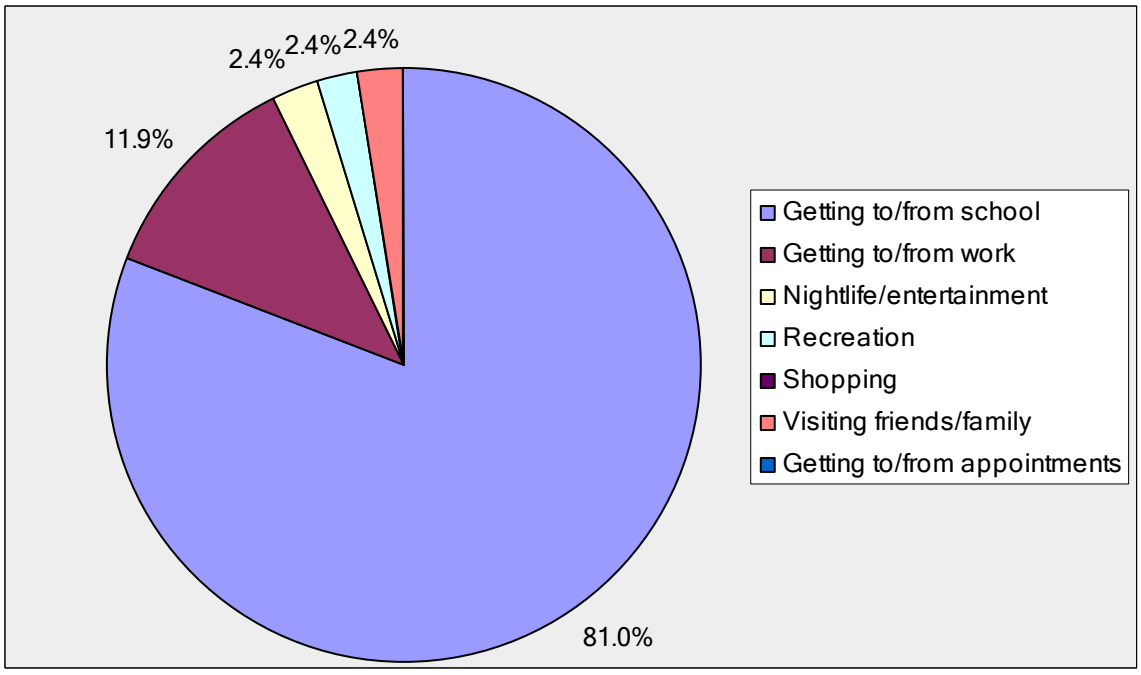
3.2 Question: In an average week, how many one-way trips do you take on Metrobus? (Transferring between buses to arrive at your destination is still considered a one-way trip; i.e. home to school is a one-way trip even if transfers are required)



3.3 Question: How do you normally pay for your trip on Metrobus?



3.4 Question: What is your PRIMARY purpose for using Metrobus?



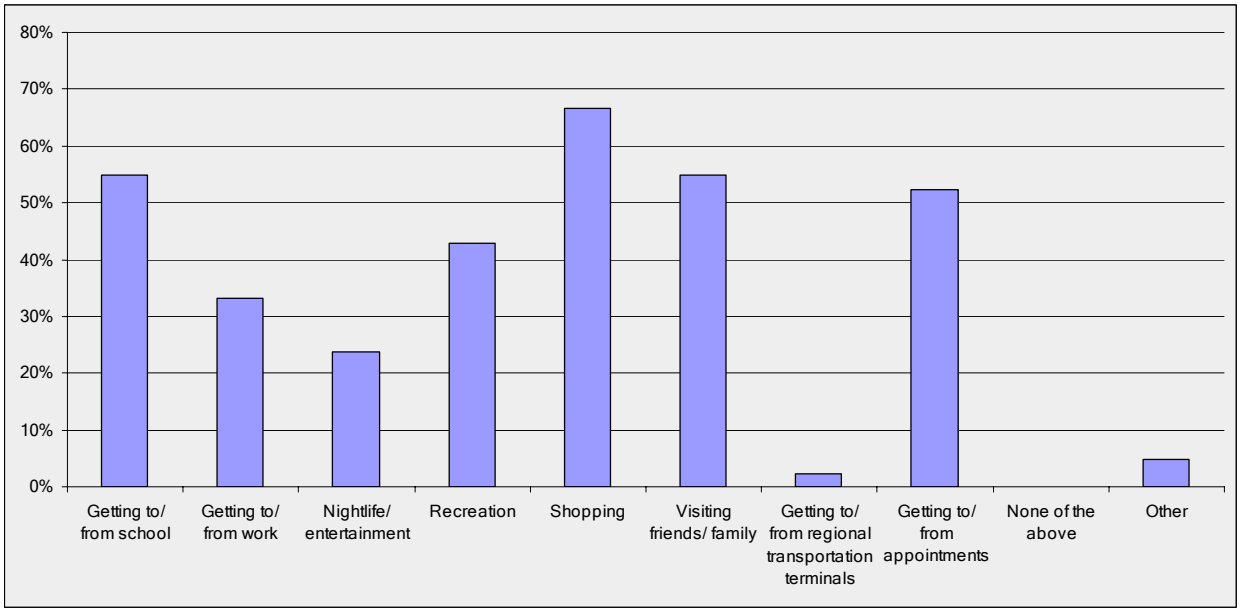
3.5 Question: When you are using Metrobus for your primary trip, are you required to transfer between buses to reach your destination?

- Forty-five (45) percent indicated a transfer being needed to reach their destination.

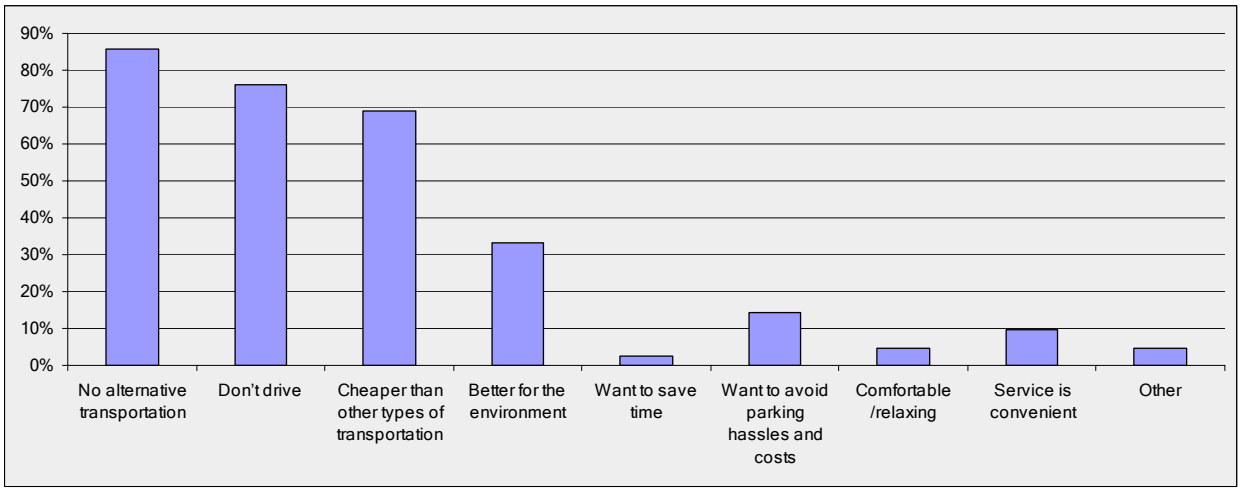
3.6 Question: How many transfers are required to reach your destination?

- One hundred (100) percent indicated one transfer.

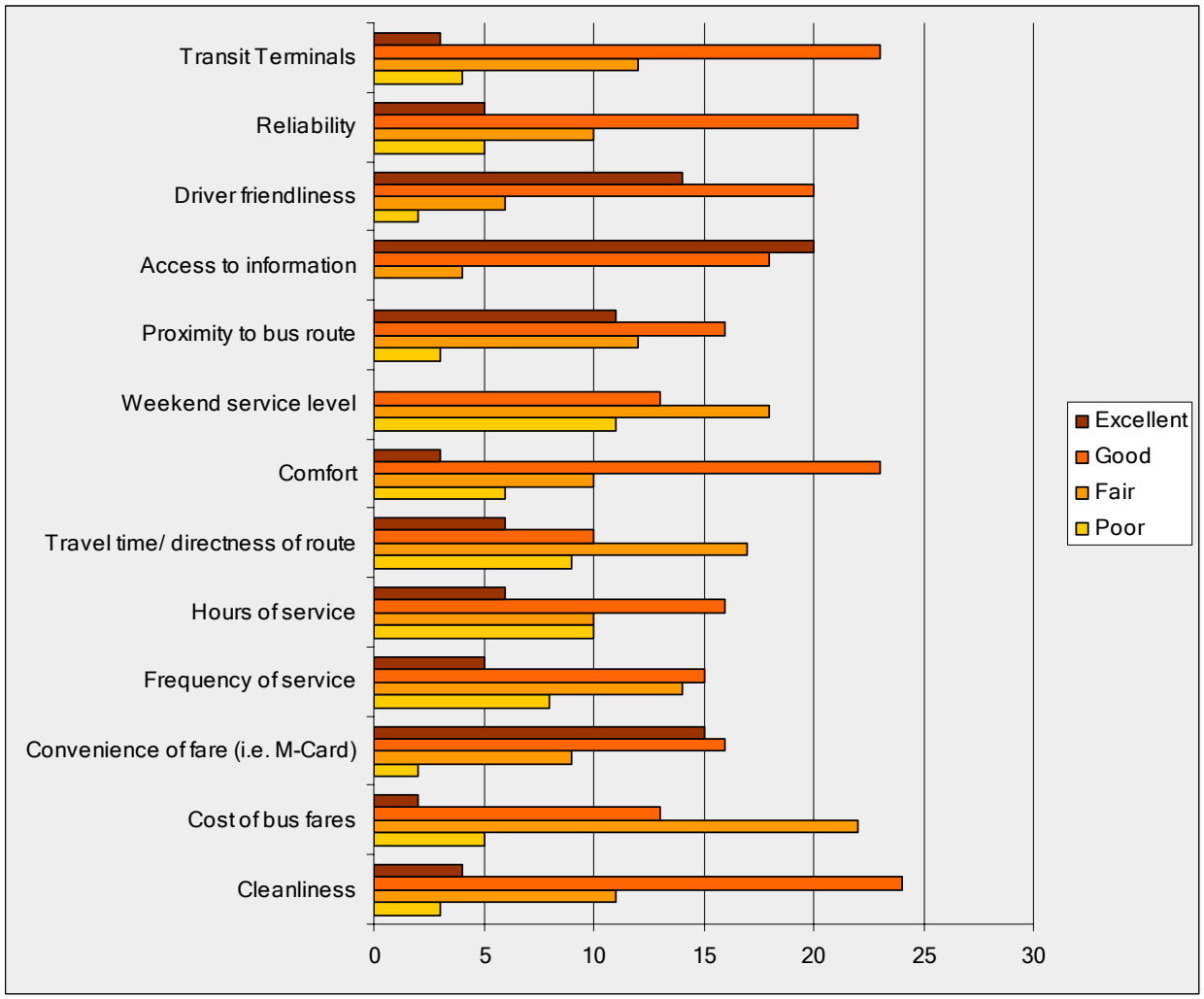
3.7 Question: What other trips do you use Metrobus for?



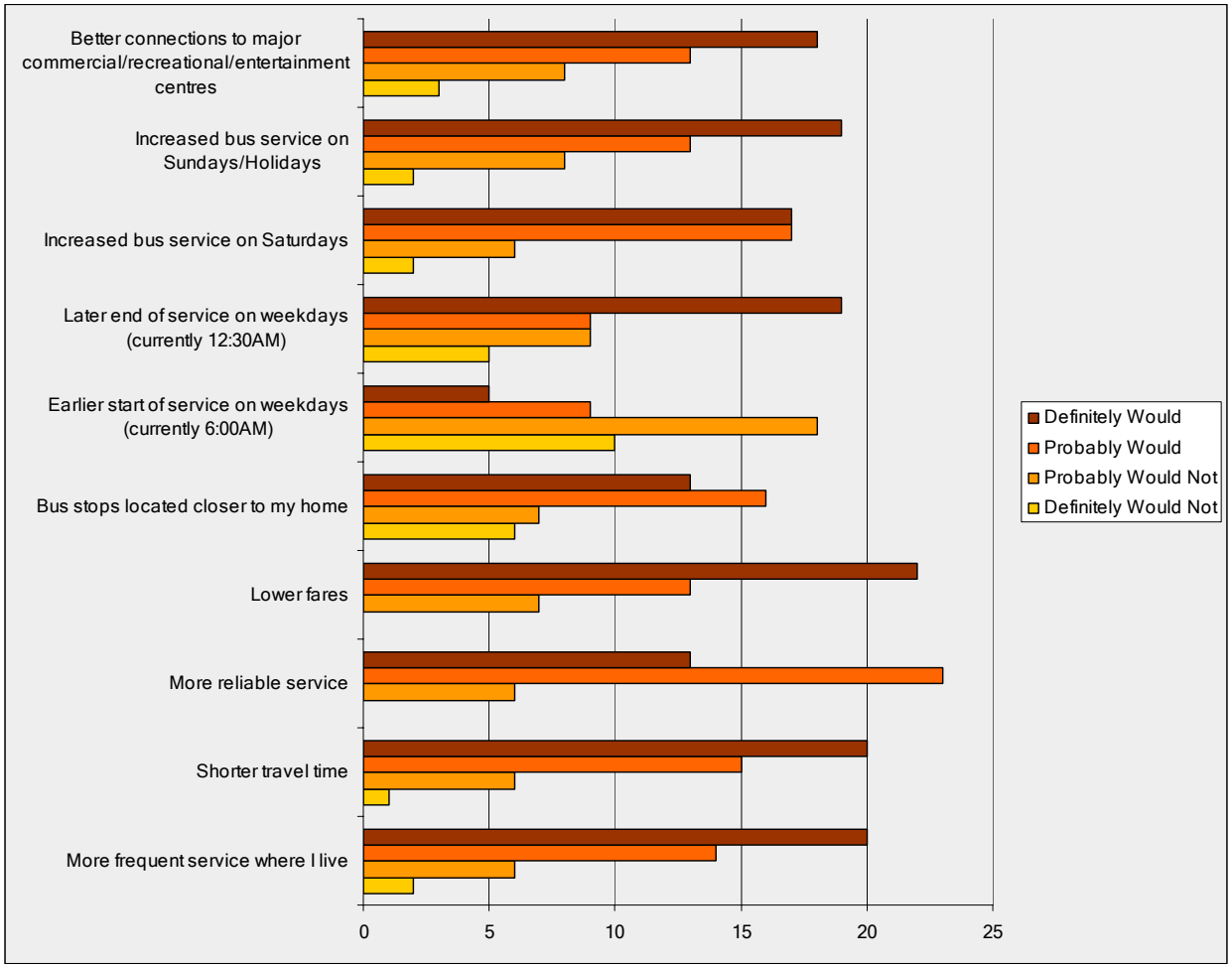
3.8 Question: What are your top 3 reasons for using Metrobus?



3.9 Question: How would you rate the following elements of Metrobus services?

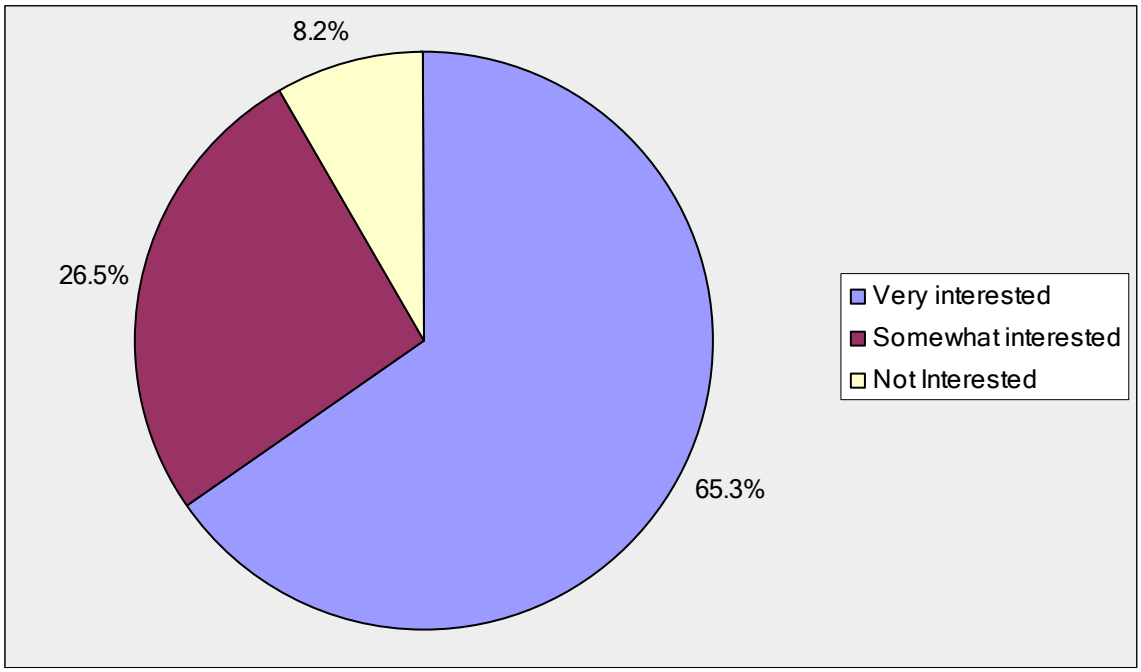


3.10 Question: What improvements to Metrobus would get you to consider taking transit more often?



4.0 Universal Student Transit Pass

Students were asked about their level of interest in exploring the implementation of a Universal Student Transit Pass agreement between Metrobus and College of the North Atlantic.



APPENDIX C
Memorial University Survey Sample and Results

Introduction

Metrobus is evaluating its transit service and setting directions for the transit system for the next 5 years. The information provided by you will assist in shaping the future of Metrobus. Please take a moment to complete the following survey.

Please note that this survey is only open for students that attend Memorial University of Newfoundland in St. John's.

Memorial University of Newfoundland Location

1. What school/campus are you attending?

- [ ] Memorial University of Newfoundland - Main St. John's Campus
- [ ] Memorial University of Newfoundland - St. John's Marine Institute
- [ ] Memorial University of Newfoundland - Other Campus

Student Profile/Transit Use

1. What type of student are you?

- ◯ Undergraduate
- ◯ Graduate

2. Are you a full time or part time student?

- ◯ Full-time
- ◯ Part-time

3. How familar are you with:

	Not at all	Not very	Somewhat	Very
Metrobus routes and schedules	◯	◯	◯	◯
Metrobus Transit Infoline	◯	◯	◯	◯
Metrobus website	◯	◯	◯	◯
The M-Card	◯	◯	◯	◯
Metrobus fares	◯	◯	◯	◯
Online Trip Planner "Find my bus"	◯	◯	◯	◯

4. Have you used Metrobus in the last 3 months?

- ◯ Yes
- ◯ No

Non-Transit Users

1. Do you live on campus? If not, where?

- ◯ On campus
- ◯ St. John's Central
- ◯ St. John's West
- ◯ St. John's East
- ◯ Mt. Pearl
- ◯ Kilbride
- ◯ Donovans
- ◯ Southlands/Southbrook
- ◯ Torbay/Middle Cove
- ◯ Paradise
- ◯ Conception Bay South
- ◯ Pouch Cove
- ◯ Goulds
- ◯ Bay Bulls/Witless Bay
- ◯ Portugal Cove/St. Philips
- ◯ Other (please specify)

Non Transit Users Off Campus

1. How do you get to campus? (Please select all that apply)

- [ ] Car (driver)
- [ ] Car (passenger)
- [ ] Bike
- [ ] Walk
- [ ] Other (please specify)

2. What are your top 3 reasons for not using Metrobus? (please select 3 only)

- [ ] I live outside of St. John's/Mt. Pearl
- [ ] I own a car and prefer to drive
- [ ] I prefer to walk/cycle
- [ ] Schedules are not convenient
- [ ] The bus stop is too far from my home
- [ ] Travel times are too long on the bus
- [ ] I don’t feel safe on the bus
- [ ] I don’t feel safe waiting for the bus
- [ ] Not familiar with service/routes
- [ ] Buses are overcrowded
- [ ] Bus fares are too high

3. Which of the following, if any, would get you to consider using Metrobus?

	Definitely Would Not	Probably Would Not	Probably Would	Definitely Would
More frequent service where I live	◯	◯	◯	◯
Shorter travel time	◯	◯	◯	◯
More reliable service	◯	◯	◯	◯
Lower fares	◯	◯	◯	◯
Bus stops located closer to my home	◯	◯	◯	◯
Higher costs to operating a car (parking and fuel)	◯	◯	◯	◯
Earlier start of service on weekdays (currently 6:00AM)	◯	◯	◯	◯
Later end of service on weekdays (currently 12:30AM)	◯	◯	◯	◯
Increased bus service on Saturdays	◯	◯	◯	◯
Increased bus service on Sundays/Holidays	◯	◯	◯	◯
Better connections to major commercial/recreational/entertainment centres	◯	◯	◯	◯

Other (please specify)

Non Transit Users On Campus

1. What are your top 3 reasons for not using Metrobus? (please select 3 only)

- [ ] Bus stop is too far from my residence
- [ ] I own a car and prefer to drive
- [ ] I prefer to walk/cycle
- [ ] Schedules are not convenient
- [ ] Travel times are too long on the bus
- [ ] I don't feel safe on the bus
- [ ] I don't feel safe waiting for the bus
- [ ] Not familiar with service/routes
- [ ] Buses are overcrowded
- [ ] Bus fares are too high
- [ ] Other (please specify)

2. Which of the following, if any, would get you to consider using Metrobus?

	Definitely Would Not	Probably Would Not	Probably Would	Definitely Would
More frequent service where I live	◯	◯	◯	◯
Shorter travel time	◯	◯	◯	◯
More reliable service	◯	◯	◯	◯
Lower fares	◯	◯	◯	◯
Bus stops located closer to my home	◯	◯	◯	◯
Higher costs to operating a car (parking and fuel)	◯	◯	◯	◯
Earlier start of service on weekdays (currently 6:00AM)	◯	◯	◯	◯
Later end of service on weekdays (currently 12:30AM)	◯	◯	◯	◯
Increased bus service on Saturdays	◯	◯	◯	◯
Increased bus service on Sundays/Holidays	◯	◯	◯	◯
Better connections to major commercial/recreational/entertainment centres	◯	◯	◯	◯

Transit Users

1. Do you live on campus? If not, where?

- ◯ On Campus
- ◯ St. John's Central
- ◯ St. John's West
- ◯ St. John's East
- ◯ Mt. Pearl
- ◯ Kilbride
- ◯ Donovans
- ◯ Southlands/Southbrook
- ◯ Torbay/Middle Cove
- ◯ Paradise
- ◯ Conception Bay South
- ◯ Pouch Cove
- ◯ Goulds
- ◯ Bay Bulls/Witless Bay
- ◯ Portugal Cove/St. Philips
- ◯ Other (please specify)

2. In an average week, how many one-way trips do you take on Metrobus? (Transferring between buses to arrive at your destination is still considered a one-way trip; i.e. home to school is a one-way trip even if transfers are required)

- ◯ less than 1
- ◯ 1 to 4
- ◯ 5 to 10
- ◯ 11 to 14
- ◯ more than 14

3. How do you normally pay for your trip on Metrobus?

- ◯ Cash
- ◯ 10-Ride Card
- ◯ Monthly Pass
- ◯ Semester Pass

4. What is your primary purpose for using Metrobus? (please select only one option)

- ◯ Getting to/from school
- ◯ Getting to/from work
- ◯ Nightlife/entertainment
- ◯ Recreation
- ◯ Shopping
- ◯ Visiting friends/family
- ◯ Getting to/from appointments

5. When you are using Metrobus for your primary trip, are you required to transfer between buses to reach your destination?

- ◯ Yes
- ◯ No

Transit users

1. How many transfers are required to reach your destination?

- [ ] 1
- [ ] 2
- [ ] more than 2

Transit Users

1. What other trips do you use Metrobus for? (please select all that apply)

- [ ] Getting to/from school
- [ ] Getting to/from work
- [ ] Nightlife/entertainment
- [ ] Recreation
- [ ] Shopping
- [ ] Visiting friends/family
- [ ] Getting to/from regional transportation terminals
- [ ] Getting to/from appointments
- [ ] None of the above
- [ ] Other (please specify)

2. What are your top 3 reasons for using Metrobus (please select 3 only)?

- [ ] No alternative transportation
- [ ] Don't drive
- [ ] Cheaper than other types of transportation
- [ ] Better for the environment
- [ ] Want to save time
- [ ] Want to avoid parking hassles and costs
- [ ] Comfortable /relaxing
- [ ] Service is convenient
- [ ] Other (please specify)

3. How would you rate the following elements of Metrobus services?

	Excellent	Good	Fair	Poor
Cleanliness	◯	◯	◯	◯
Cost of bus fares	◯	◯	◯	◯
Convenience of fare (i.e. M-Card)	◯	◯	◯	◯
Frequency of service	◯	◯	◯	◯
Hours of service	◯	◯	◯	◯
Travel time/ directness of route	◯	◯	◯	◯
Comfort	◯	◯	◯	◯
Weekend service level	◯	◯	◯	◯
Proximity to bus route	◯	◯	◯	◯
Access to information	◯	◯	◯	◯
Driver friendliness	◯	◯	◯	◯
Reliability	◯	◯	◯	◯
Online Trip Planner (Find my Bus)	◯	◯	◯	◯
Transit Terminals	◯	◯	◯	◯

4. What improvements to Metrobus would get you to consider taking transit more often?

	Definitely Would Not	Probably Would Not	Probably Would	Definitely Would
More frequent service where I live	◯	◯	◯	◯
Shorter travel time	◯	◯	◯	◯
More reliable service	◯	◯	◯	◯
Lower fares	◯	◯	◯	◯
Bus stops located closer to my home	◯	◯	◯	◯
Higher costs to operating a car (parking and fuel)	◯	◯	◯	◯
Earlier start of service on weekdays (currently 6:00AM)	◯	◯	◯	◯
Later end of service on weekdays (currently 12:30AM)	◯	◯	◯	◯
Increased bus service on Saturdays	◯	◯	◯	◯
Increased bus service on Sundays/Holidays	◯	◯	◯	◯
Better connections to major commercial/recreational/entertainment centres	◯	◯	◯	◯

Other (please specify)

Universal Student Transit Pass

One of the most effective, transit developments in the past decade has been the introduction of U-Passes at many Canadian Universities and Community Colleges. The U-Pass results from a specific negotiation typically conducted among the transit system, the administration of the post secondary institution and the student association. When implemented all students pay a fixed price and have full access to transit on a semester or annual basis. Typically, the cost is significantly discounted because the pass in universal (all students contribute to the program).

Usually a student referendum is required to launch the initiative and experience has shown that once implemented there is very high approval rating by all parties. Aside from the specific benefits related to low travel cost, reduced campus parking requirements, increased location choice for accommodations, reduction of neighbourhood issues, etc, there is the significant benefit that accrues to the environment from the growth in transit usage by post secondary students.

1. How interested would you be in MUN exploring the implementation of a U-Pass?

- ◯ Very interested
- ◯ Somewhat interested
- ◯ Not Interested

Thank You

Thank you. Please press "done" to complete the survey. For more information please visit the study page at www.metrobus.com/dillon

1.0 INTRODUCTION

An on-line survey targeting the students at the Memorial University (St. John's campuses) was distributed via email on Monday October 11th 2010. The purpose of the survey was to collect information on student transit ridership, travel patterns, and their attitudes and opinions about Metrobus. The survey was available until Friday October 29th, 2010. Great cooperation was provided by Randy Dodge at the Memorial University.

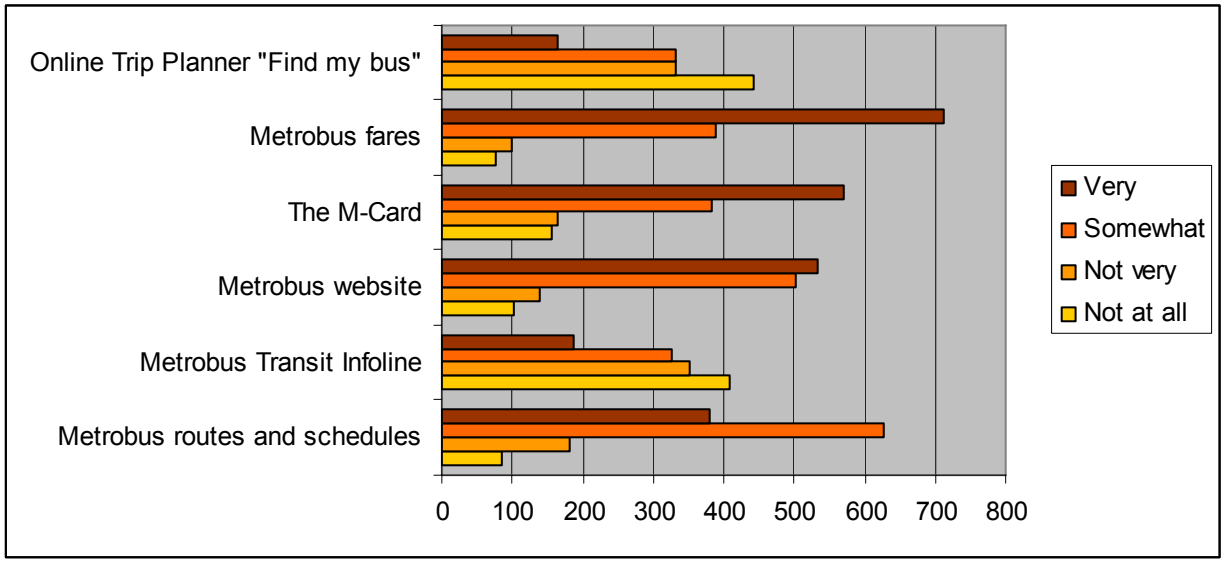
The survey was originally tested on a group of 30 students in person at the Memorial University in May 2010. The results of these surveys were added to the total.

A total of 1302 completed surveys were collected. The survey results are summarized below.

Overall:

- 96% of respondents attend the main St. John's Campus on Prince Phillip Drive;
- 85% of respondents were undergraduate students;
- 94% of respondents were full time students;
- 80% of respondents were transit users (have used Metrobus in the past 3 months).

Students were asked about their familiarity with certain Metrobus characteristics. The results are summarized in the below chart.

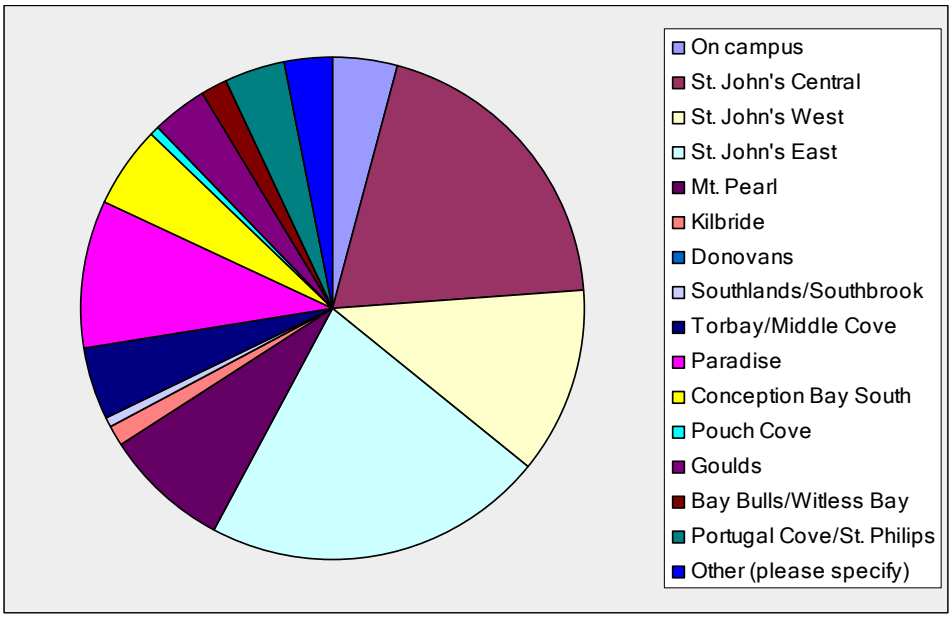


Separate questions were asked for both transit users and non-transit users. The results of the survey are presented below.

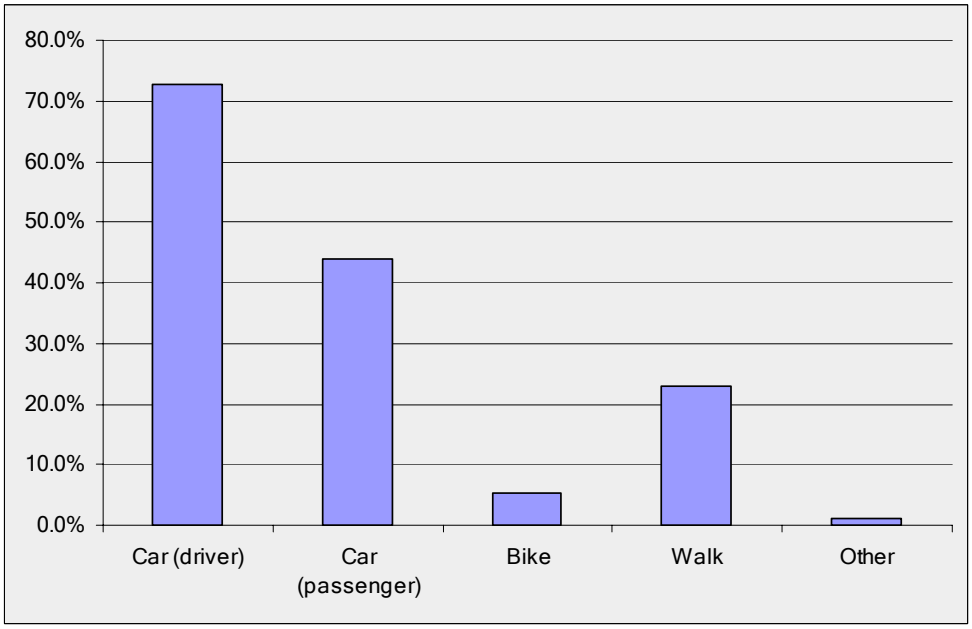
2.0 NON-TRANSIT USER RESULTS

The following targeted questions were asked to students that indicated that they do not use Metrobus. This represents 20 percent of total responses (or 255 responses in total).

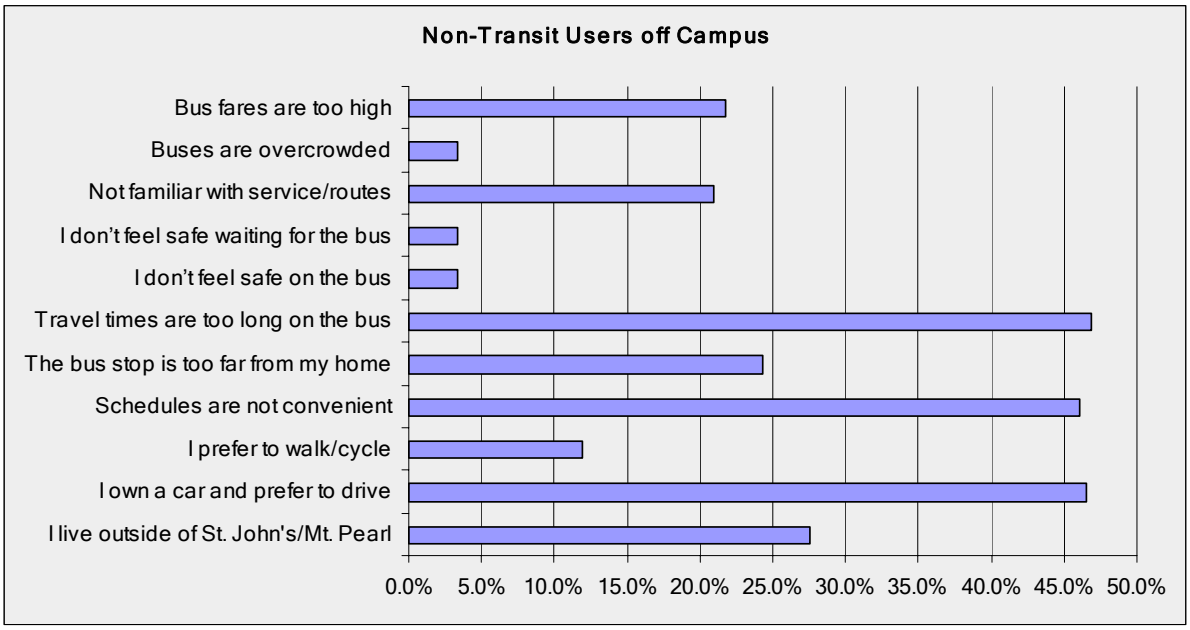
2.1 Question: Do you live on campus? If not, where?

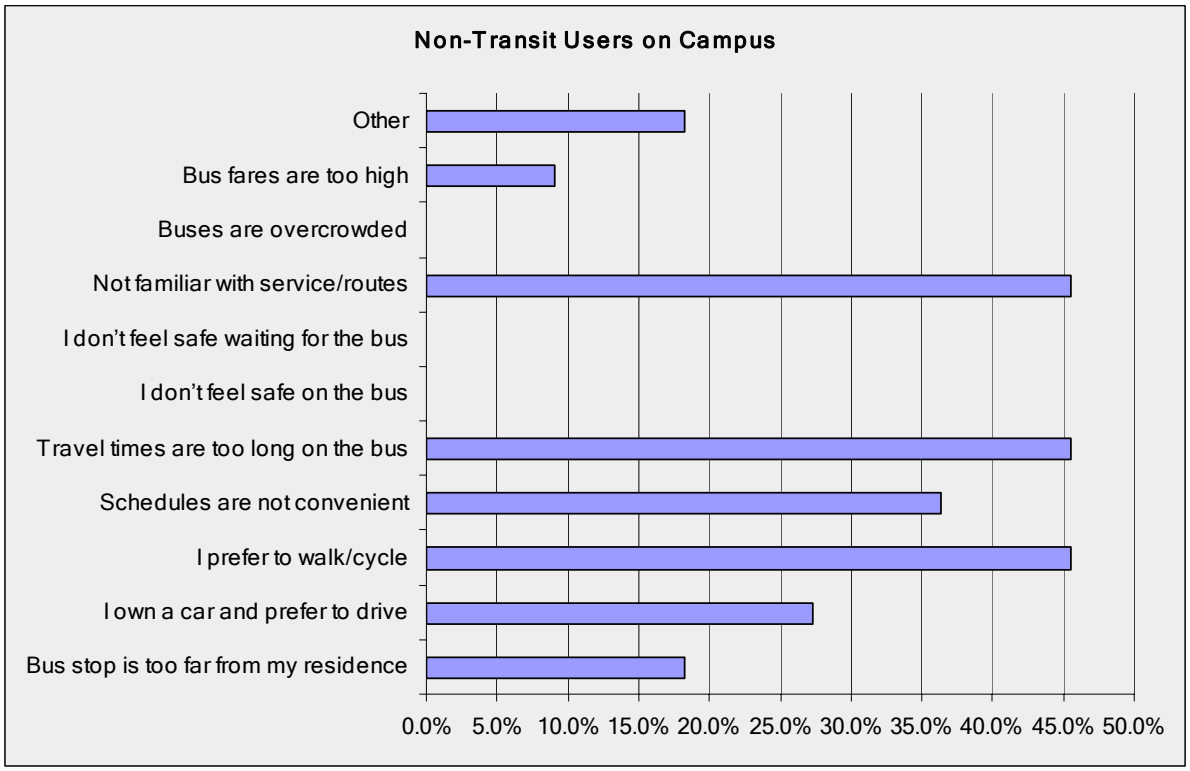


2.2 Question: How do you get to campus? (Non-transit users off-campus)

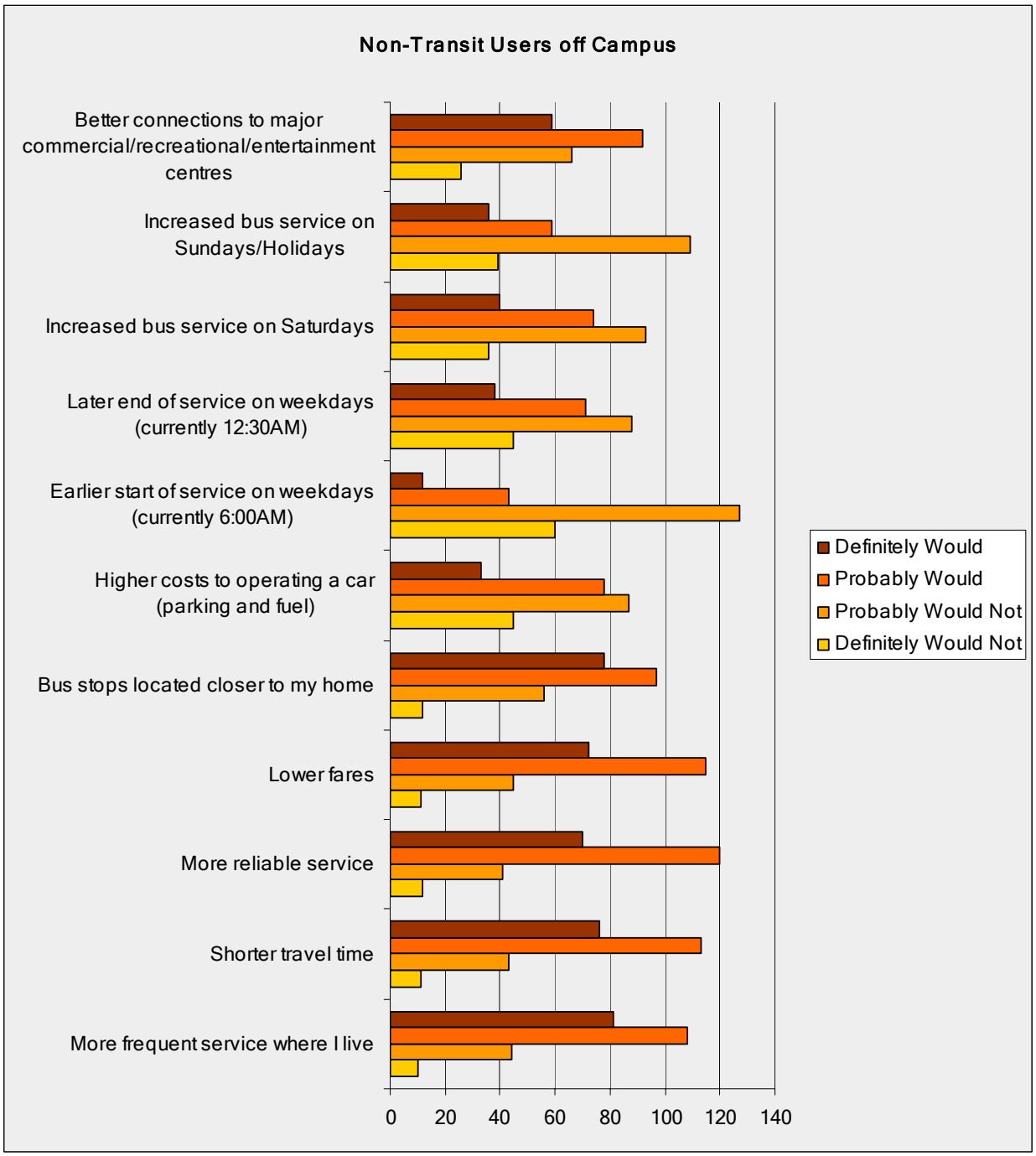


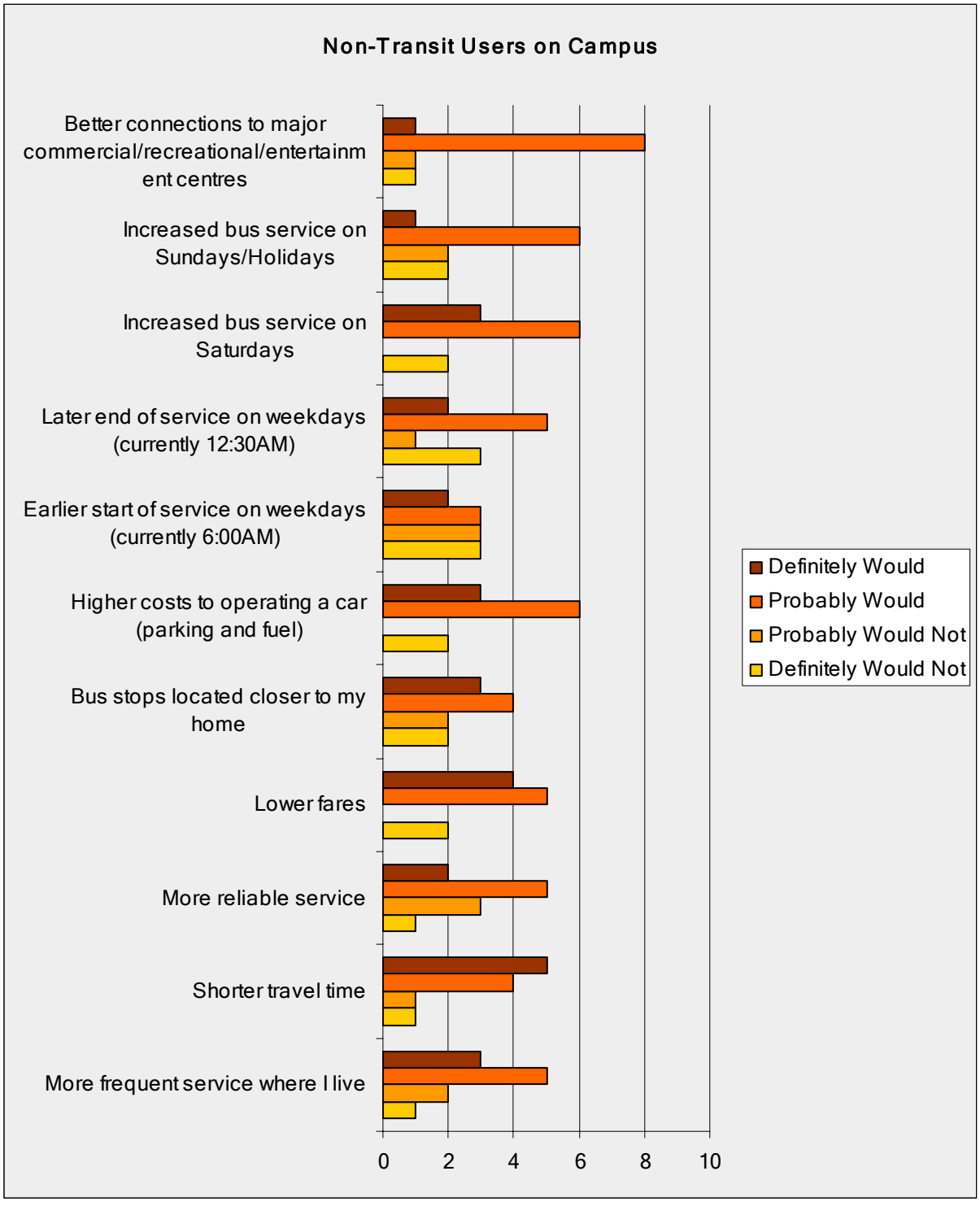
2.3 Question: What are your top 3 reasons for not using Metrobus?





2.4 Question: Which of the following, if any, would get you to consider using Metrobus?

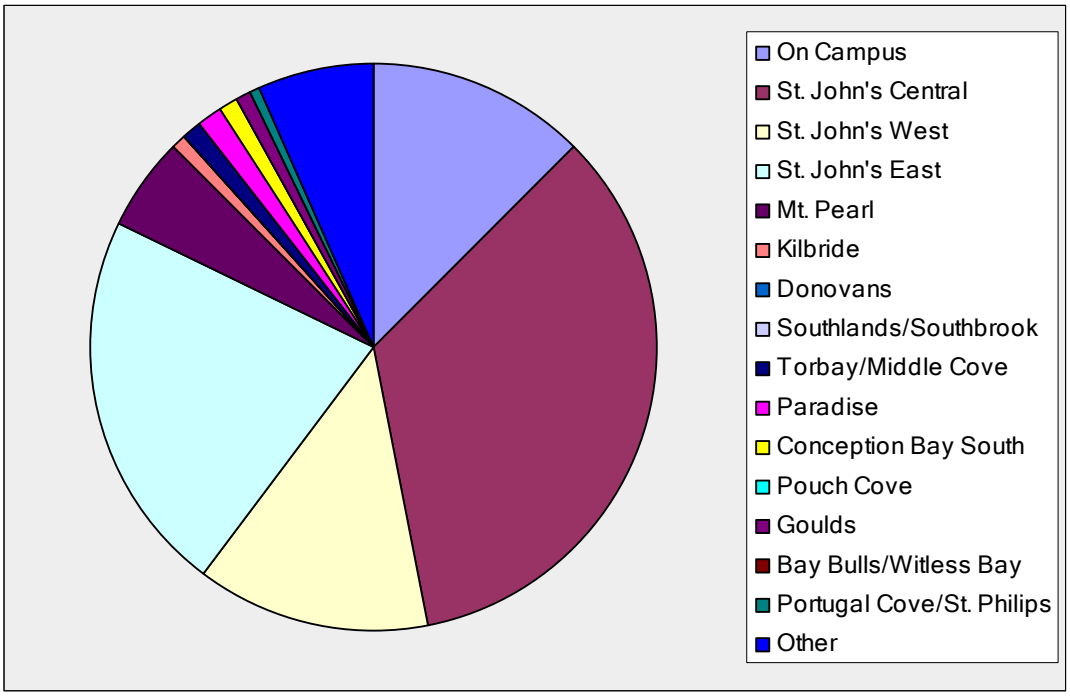



Non-Transit Users on Campus
Better connections to major commercial/recreational/entertainment centres
Increased bus service on Sundays/Holidays
Increased bus service on Saturdays
Later end of service on weekdays (currently 12:30AM)
Earlier start of service on weekdays (currently 6:00AM)
Higher costs to operating a car (parking and fuel)
Bus stops located closer to my home
Lower fares
More reliable service
Shorter travel time
More frequent service where I live
0
2
4
6
8
10
Definitely Would
Probably Would
Probably Would Not
Definitely Would Not

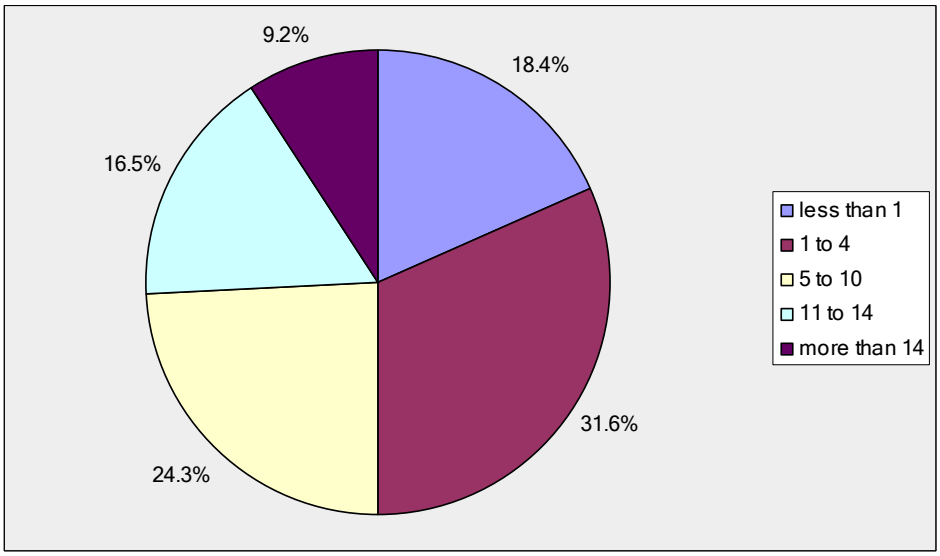
3.0 TRANSIT USERS RESULTS

About 80 percent of respondents indicated that they have used Metrobus over the past three months. The following present results of the survey.

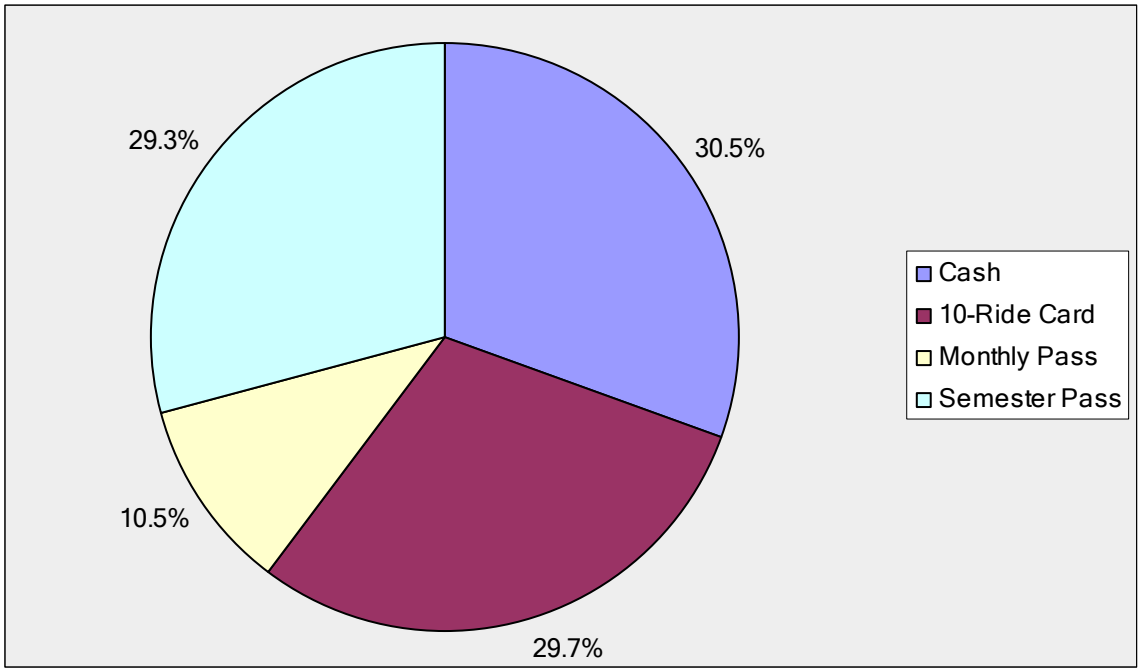
3.1 Question: Do you live on campus? If not, where?



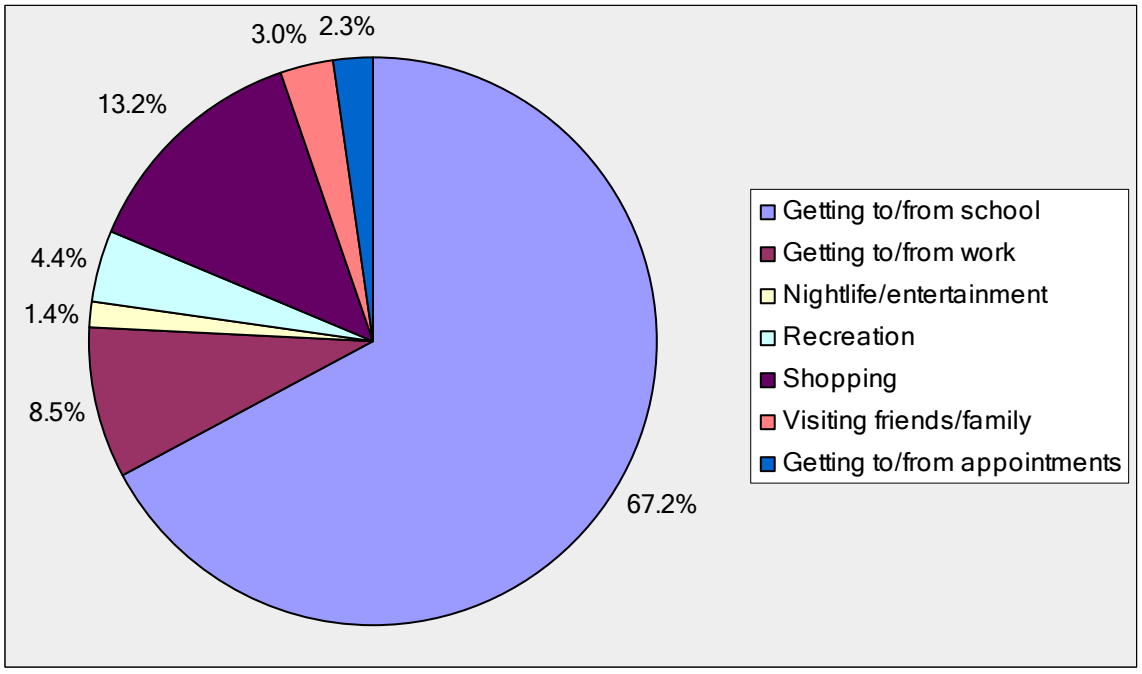
3.2 Question: In an average week, how many one-way trips do you take on Metrobus? (Transferring between buses to arrive at your destination is still considered a one-way trip; i.e. home to school is a one-way trip even if transfers are required)



3.3 Question: How do you normally pay for your trip on Metrobus?



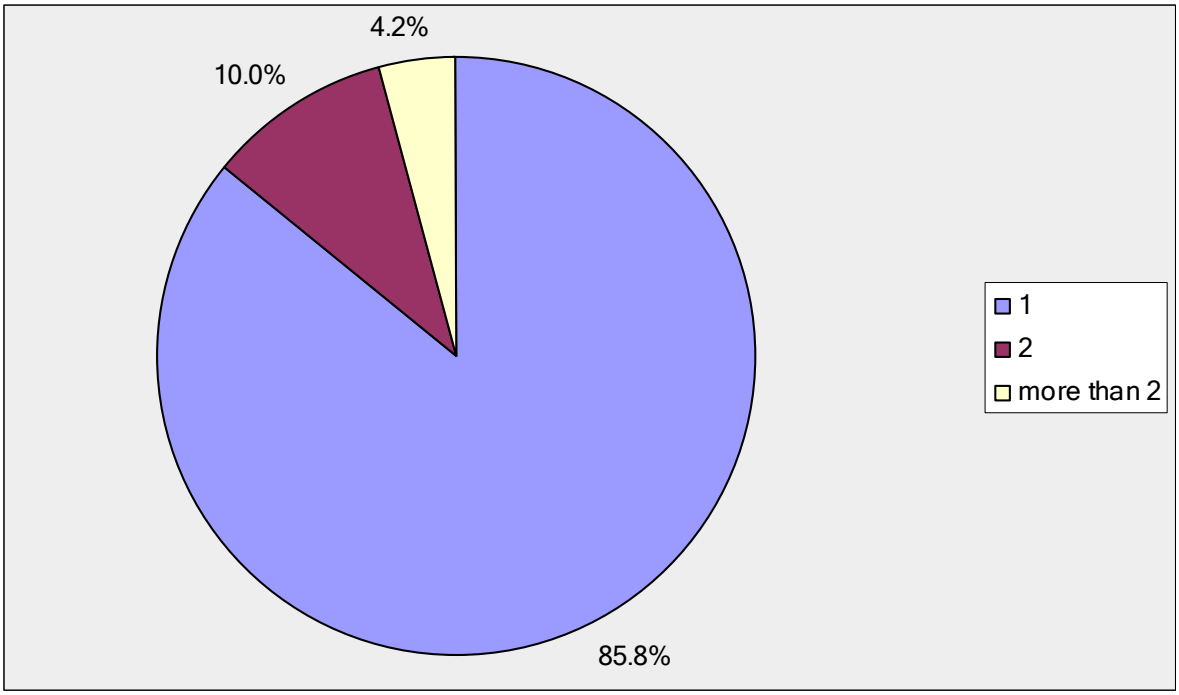
3.4 Question: What is your PRIMARY purpose for using Metrobus?



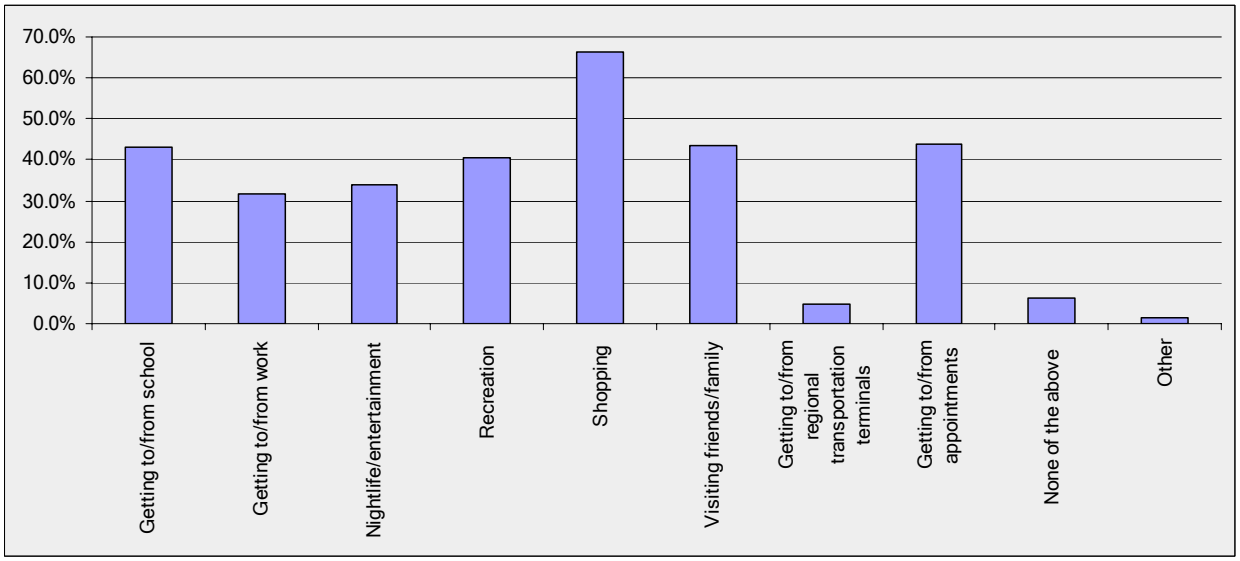
3.5 Question: When you are using Metrobus for your primary trip, are you required to transfer between buses to reach your destination?

- Twenty-eight (28) percent indicated a transfer being needed to reach their destination.

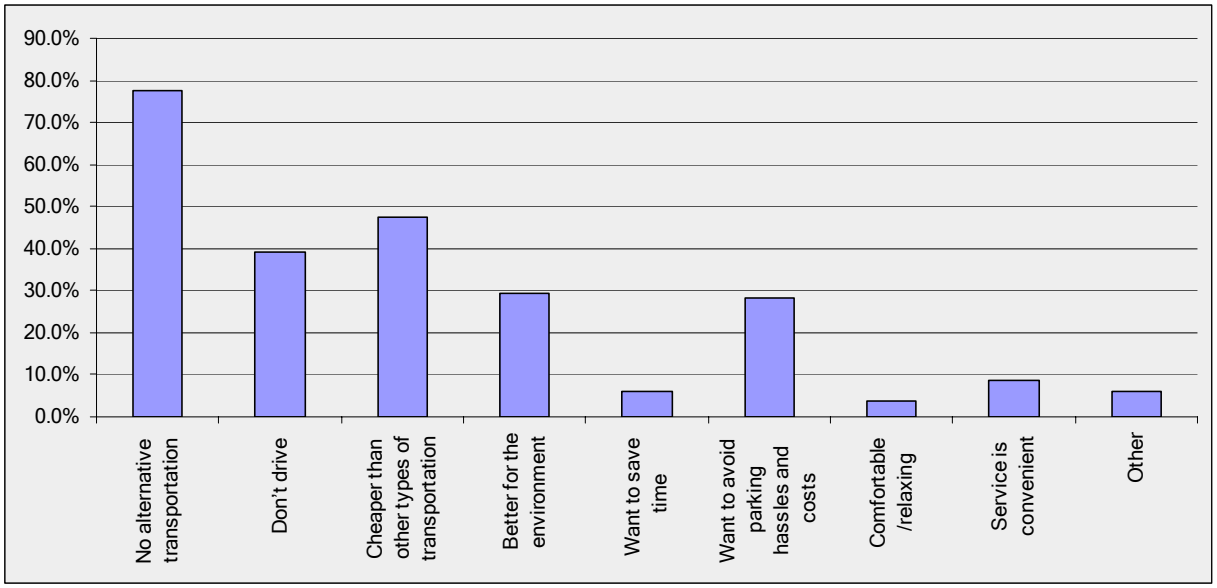
3.6 Question: How many transfers are required to reach your destination?



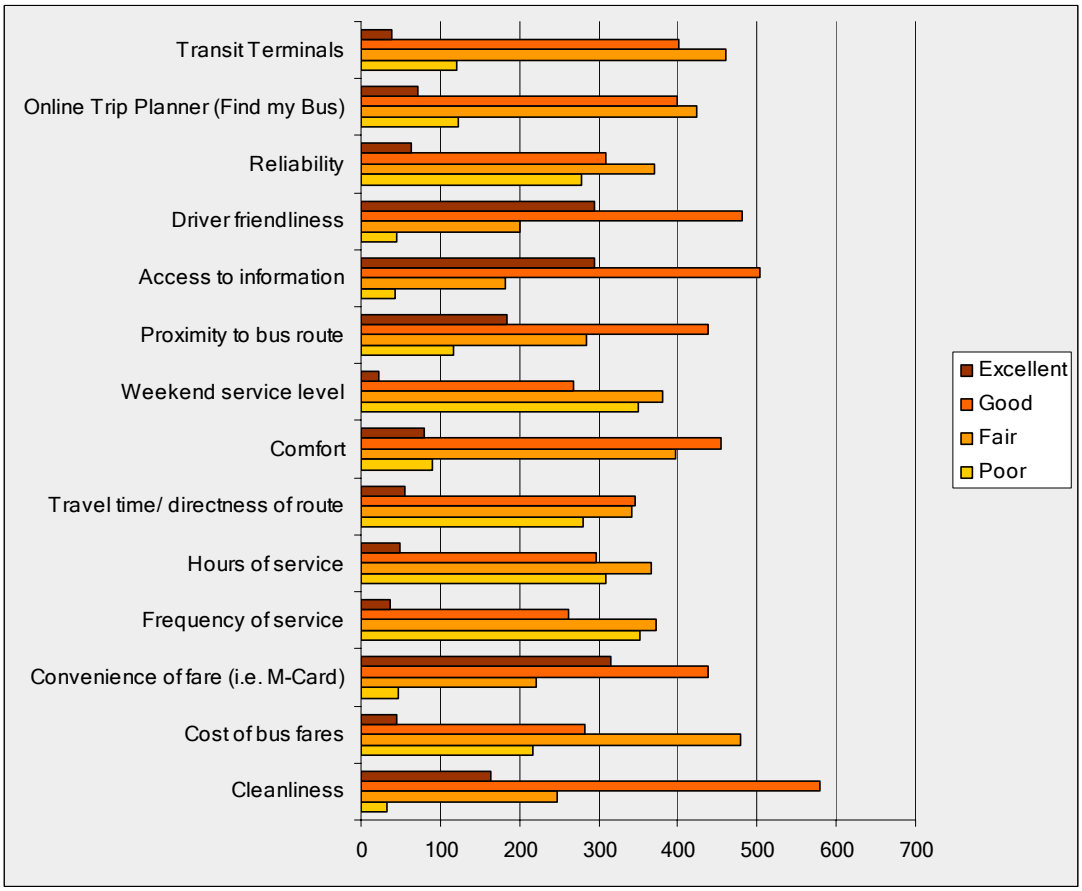
3.7 Question: What other trips do you use Metrobus for?



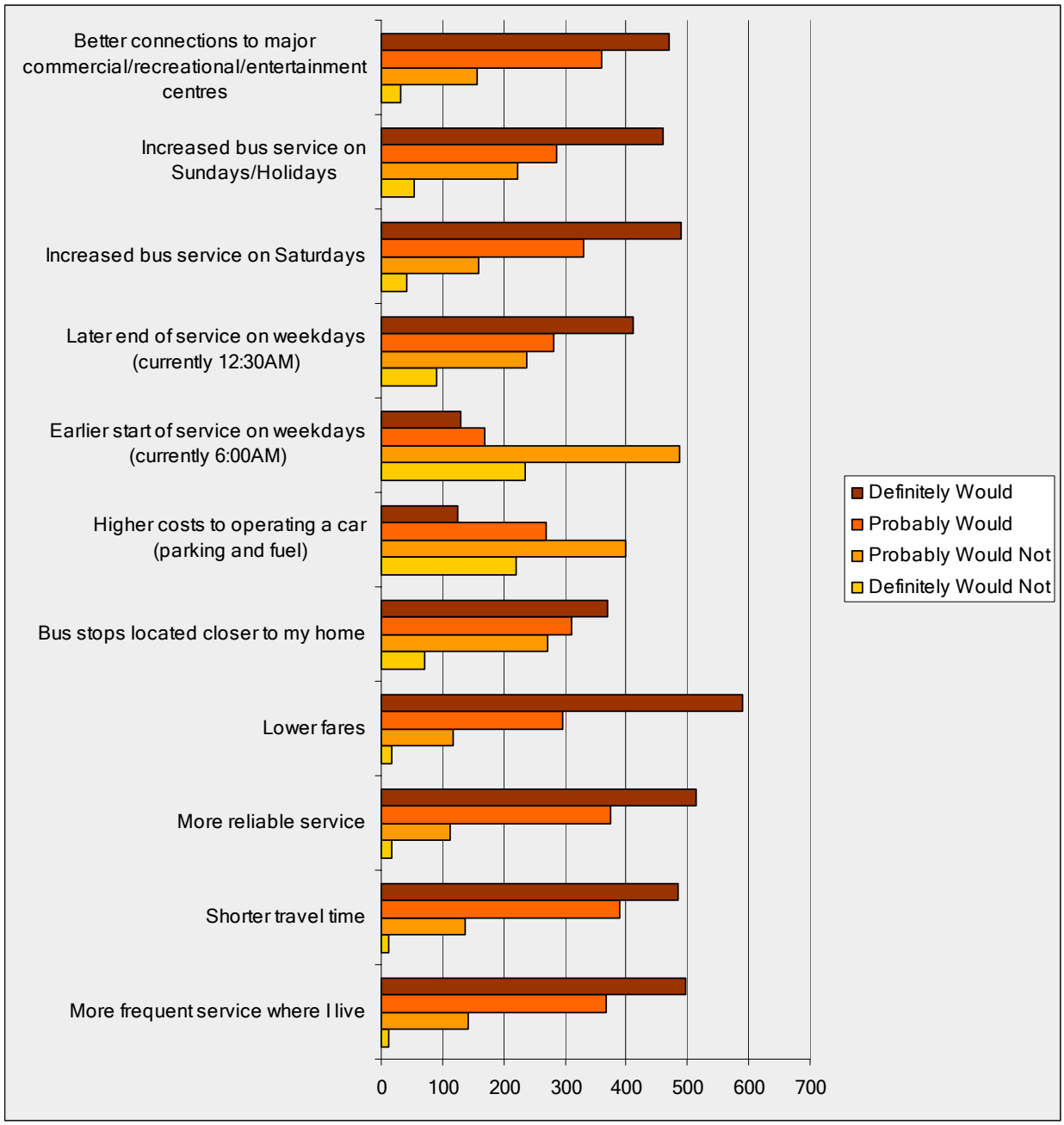
3.8 Question: What are your top 3 reasons for using Metrobus?



3.9 Question: How would you rate the following elements of Metrobus services?

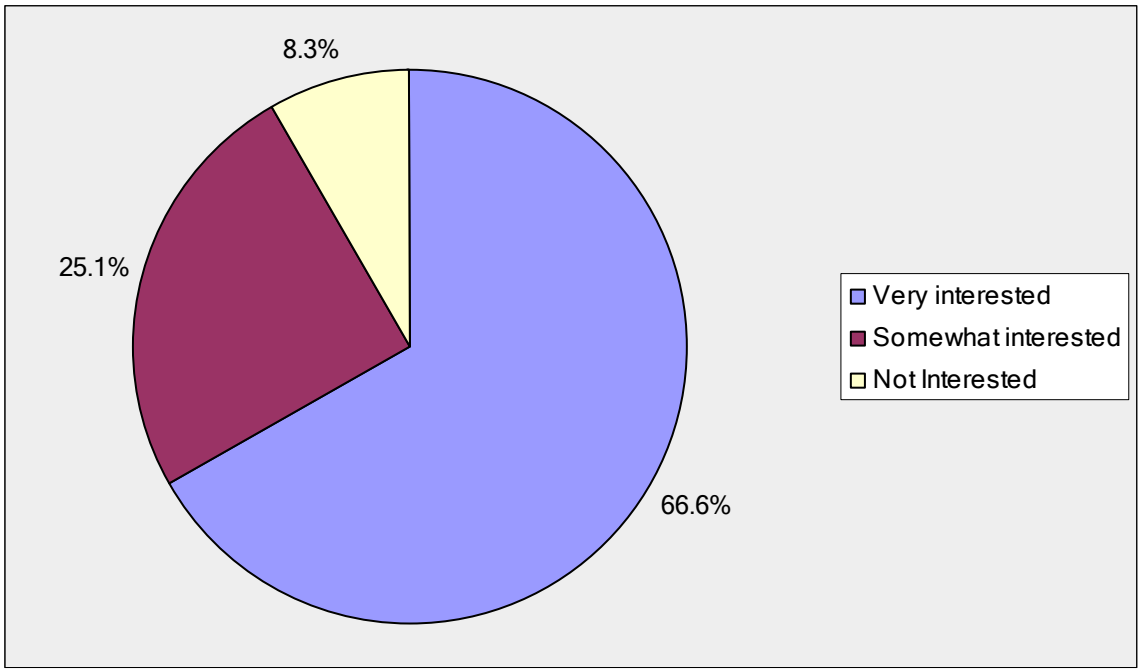


3.10 Question: What improvements to Metrobus would get you to consider taking transit more often?



4.0 Universal Student Transit Pass

All students were asked about their level of interest in exploring the implementation of a Universal Student Transit Pass agreement between Metrobus and Memorial University.



APPENDIX D
Employer Survey Sample and Results

Introduction

Metrobus is evaluating its transit services and setting strategic directions for the next 5 years. We need your input to ensure that any improvements proposed will address the needs of the business community. Please take a moment to complete this survey. If you operate from more than one location in the Greater St. John's Area please complete the survey once for each location.

Tell Us About Your Business

1. Where is your business located?

- ◯ St. John's Central
- ◯ St. John's West
- ◯ St. John's East
- ◯ Mt. Pearl
- ◯ Kilbride
- ◯ Donovans
- ◯ Southlands/Southbrook
- ◯ Torbay/Middle Cove
- ◯ Paradise
- ◯ Conception Bay South
- ◯ Pouch Cove
- ◯ Goulds
- ◯ Bay Bulls/Witless Bay
- ◯ Portugal Cove/St. Philips
- ◯ Other (please specify)

_____

2. Main type of business activity:

- ◯ Oil and Gas or other resource based industry
- ◯ Agriculture
- ◯ Construction
- ◯ Manufacturing
- ◯ Wholesale trade
- ◯ Retail trade
- ◯ Finance and real estate
- ◯ Health care and social services
- ◯ Educational services
- ◯ Business services
- ◯ Tourism
- ◯ Sports and Entertainment
- ◯ Other (please specify)

3. On an average day, how many staff members are onsite at your business/location?

Full-time

Part-time

4. Approximately how many clients/customers visit this business/location on a typical weekday?

- ◯ none
- ◯ 1-10
- ◯ 11-20
- ◯ 21-30
- ◯ 31-40
- ◯ 41-50
- ◯ 51-60
- ◯ 61-70
- ◯ 71-80
- ◯ More than 80 (please specify)

5. What is the normal start and stop time of the main weekday daytime shift at your business/location?

	HH	MM	AM/PM
Start	:		
Stop	:		

6. How many shifts does your business/location have?

- ◯ 1
- ◯ 2
- ◯ 3
- ◯ more than 3

7. Please estimate the percentage of employees who live outside of the Metrobus service area (St. John's/Mount Pearl)?

- ◯ 0-5%
- ◯ 6-10%
- ◯ 11-25%
- ◯ 26-50%
- ◯ More than 50%

Relationship to Transit

1. Does your business/location provide parking for employees?

- ◯ Yes
- ◯ No

2. What is the cost of employee parking?

- ◯ Free
- ◯ Up to $35/month
- ◯ Up to $70/month
- ◯ Over $70/month

3. Please estimate what percentage of employees might regularly use Metrobus to get to/from work?

- ◯ less than 1%
- ◯ 1-5%
- ◯ 6-10%
- ◯ 11-20%
- ◯ more than 20%

4. Do the current transit service hours meet the needs of your employees/clients/customers? Note Metrobus service hours are:
Monday-Friday 6:30AM-12:30AM
Saturday 7:00AM-12:30AM
Sunday 8:30AM-8:30PM

- ◯ Completely
- ◯ To a great extent
- ◯ Somewhat
- ◯ Not at all

5. How important is transit in attracting and retaining employees?

- ◯ Very important
- ◯ Somewhat important
- ◯ Not very important
- ◯ Not at all important

6. How important is transit in the attracting customers/clients to your business/location?

- ◯ Very important
- ◯ Somewhat important
- ◯ Not very important
- ◯ Not at all important

7. How important would you rate the following potential improvements in Metrobus services?

	Very Important	Somewhat Important	Not Very Important	Not at all Important
More frequent service on weekdays	◯	◯	◯	◯
Start service earlier on weekdays	◯	◯	◯	◯
End service later on weekdays	◯	◯	◯	◯
Improve Saturday service	◯	◯	◯	◯
Improve Sunday service	◯	◯	◯	◯
More direct transit service	◯	◯	◯	◯
Bus stop located closer to business	◯	◯	◯	◯
More shelters and/or benches at bus stops	◯	◯	◯	◯
Prompt snow clearing at bus stops	◯	◯	◯	◯
Service to areas outside of St. John's/Mount Pearl	◯	◯	◯	◯
Frequency rewards for transit users	◯	◯	◯	◯
Better route coverage in areas where my business is located	◯	◯	◯	◯

Other Important (please specify)

_____

8. Would you CONSIDER participating in a partnership with Metrobus to obtain or improve transit service where your business would: (check all that apply)

- [ ] Sell Metrobus passes/tickets at your workplace to encourage ridership
- [ ] Construct and/or maintain nearby bus shelters/or benches to encourage transit use
- [ ] Distribute Metrobus information to help market the service to your employees
- [ ] Adjust your shift times to match transit schedules
- [ ] Charter a Metrobus vehicle to bring customers directly to your business, from pre-determined pick-up locations
- [ ] Contribute to a special shuttle, operated by Metrobus, to pick-up/drop off employees at your business from pre-determined pick-up locations
- [ ] Provide a financial contribution to extend or improve transit service to your business
- [ ] Other (please specify)

Opinions about Transit

1. Please convey your opinion on the following statements:

	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
Transit is an important part of the solution to downtown parking problems	◯	◯	◯	◯	◯
Improved transit would help address parking problems at my business	◯	◯	◯	◯	◯
Public transit is an important contributor to achieving environmental goals in our community	◯	◯	◯	◯	◯
As the Greater St. John's Area grows, more people will be reliant on transit for travel to/from work	◯	◯	◯	◯	◯
Transit will play an increasingly important role in mobility as densities increases in urban areas	◯	◯	◯	◯	◯
Transit services should be available throughout the Greater St. John's Area	◯	◯	◯	◯	◯
With an aging society, transit will play an increasingly important role in the mobility needs to seniors	◯	◯	◯	◯	◯
Metrobus provides a viable alternative to employees using their private automobile for their regular work related commutes	◯	◯	◯	◯	◯

Other statements that you strongly agree with

Survey Completion

Thank you for your participation. Please press "done" to complete the survey. For more information please visit the study webpage at www.metrobus.com/dillon

1.0 INTRODUCTION

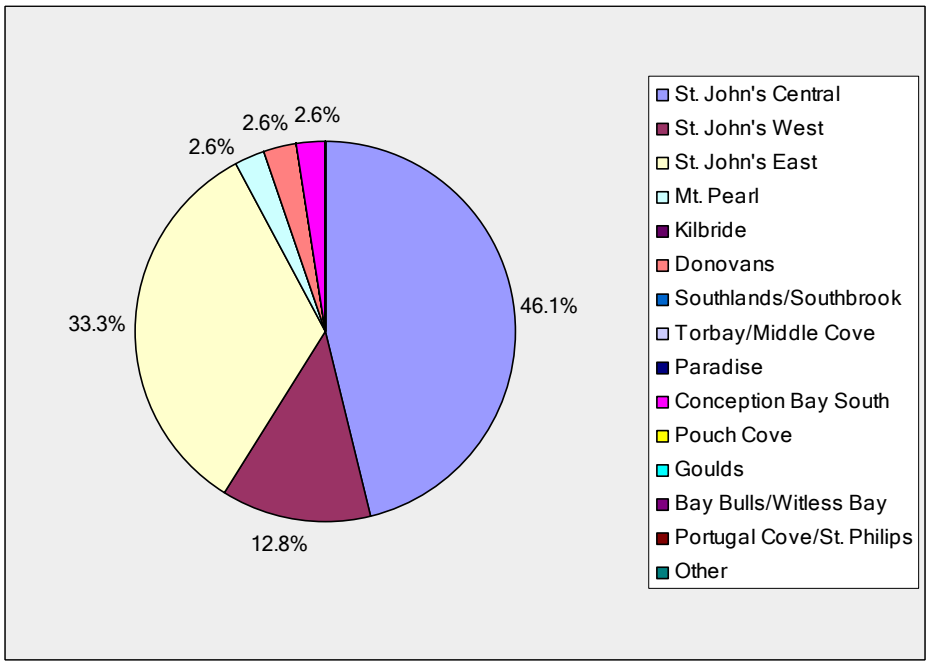
An online survey for St. John's Area employers was developed and distributed through an email notification to members of the Board of Trade and the Downtown Development Commission. The survey was available for a span of 4 weeks in February and March 2010. The purpose of the survey was to collect information on the characteristics of St. John's Area businesses and their relationship and attitudes towards transit.

Businesses were asked to fill out a survey of each of their locations in St. John's. A total of 39 completed surveys were collected. The survey results are summarized below.

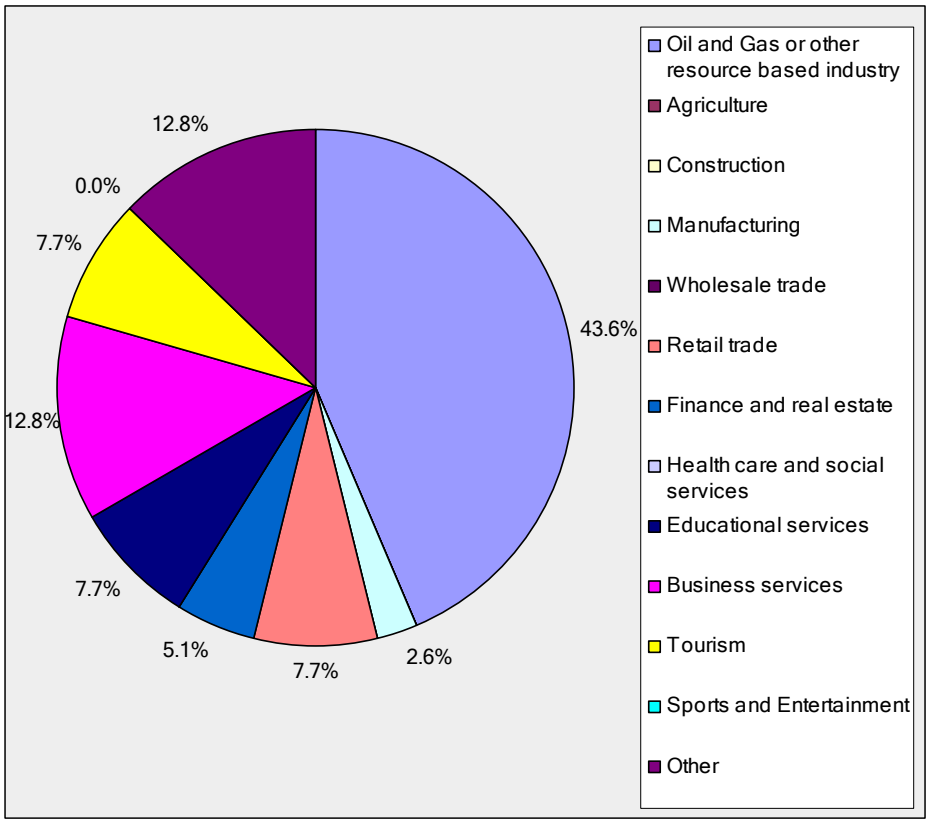
2.0 TELL US ABOUT YOUR BUSINESS

Businesses were asked a series of questions regarding the characteristics of the business and its operations.

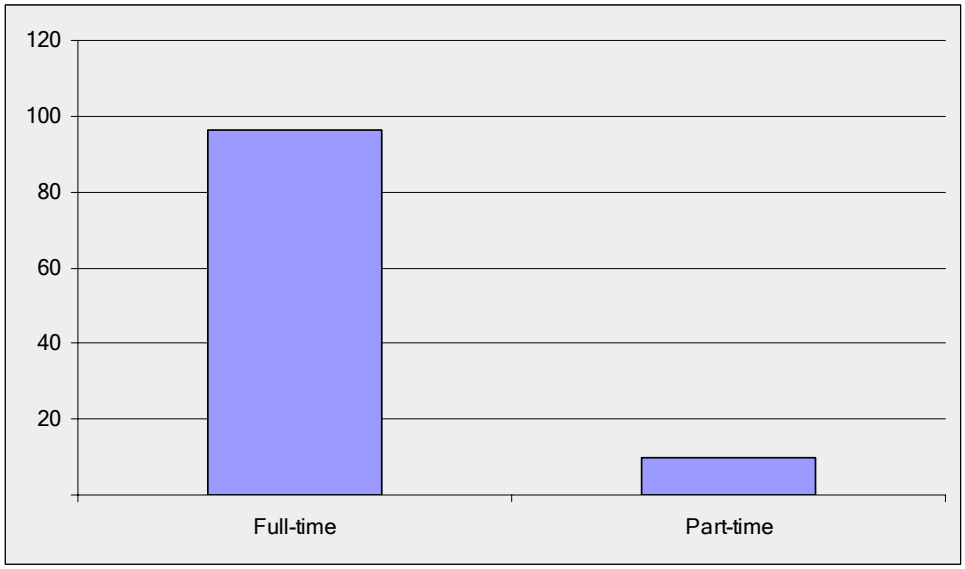
2.1 Question: Where is your business located?



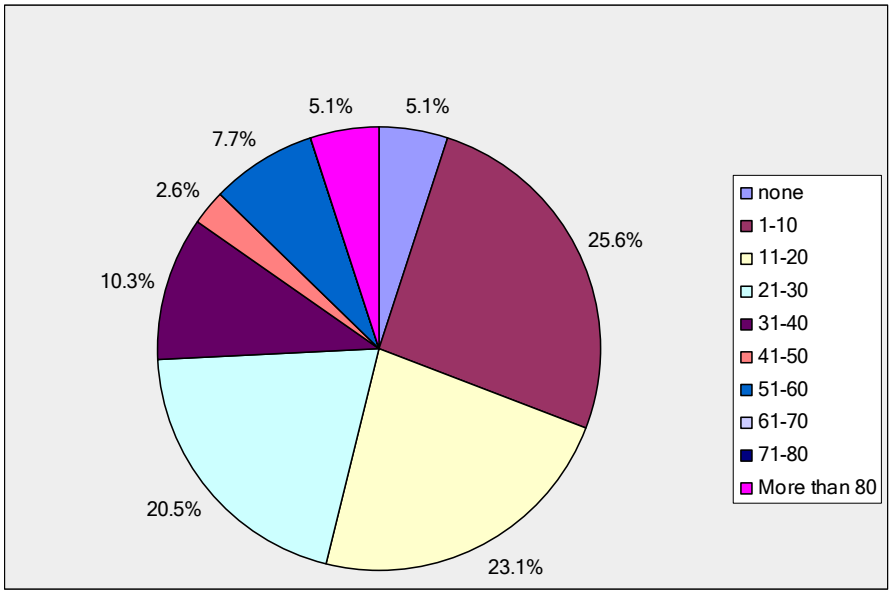
2.2 Question: Main type of business activity



2.3 Question: On an average day, how many staff members are onsite at your business/location?



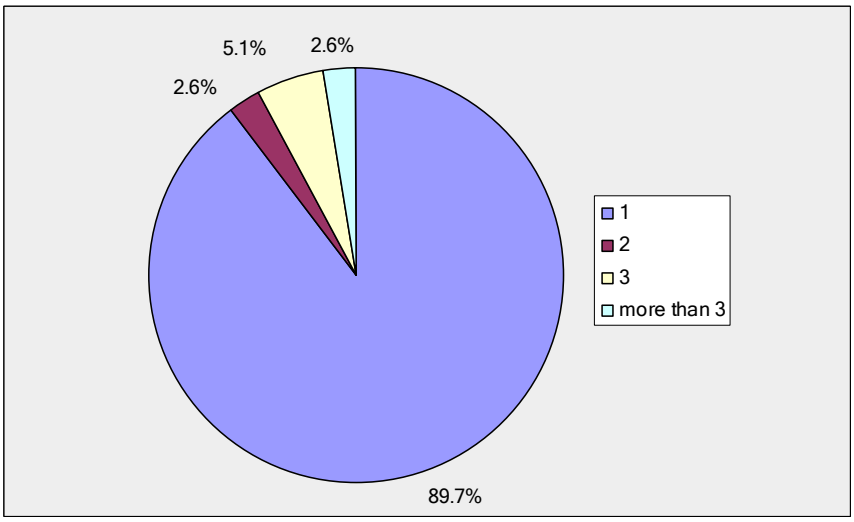
2.4 Question: Approximately how many clients/customers visit this business/location on a typical weekday?



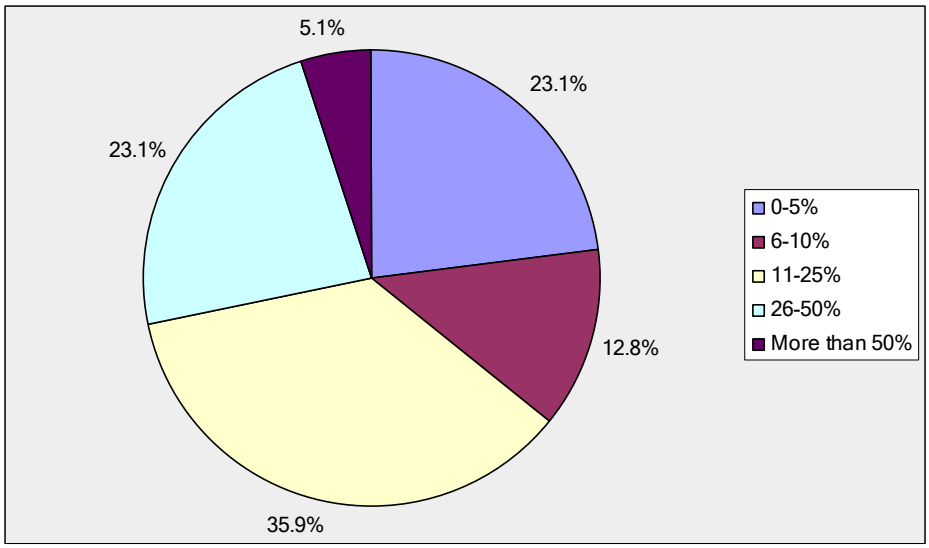
2.5 Question: What is the normal start and stop time of the main weekday daytime shift at your business/location?

- 59% of businesses had their main weekday shift start time at 8:00AM;
- 43% of businesses had their main weekday shift start time later than 8:00AM;
- 72% of businesses had their main weekday shift end time at 5:00PM;
- 18% of businesses had their main weekday shift end time later than 5:00PM.

2.6 Question: How many shifts does your business/location have?



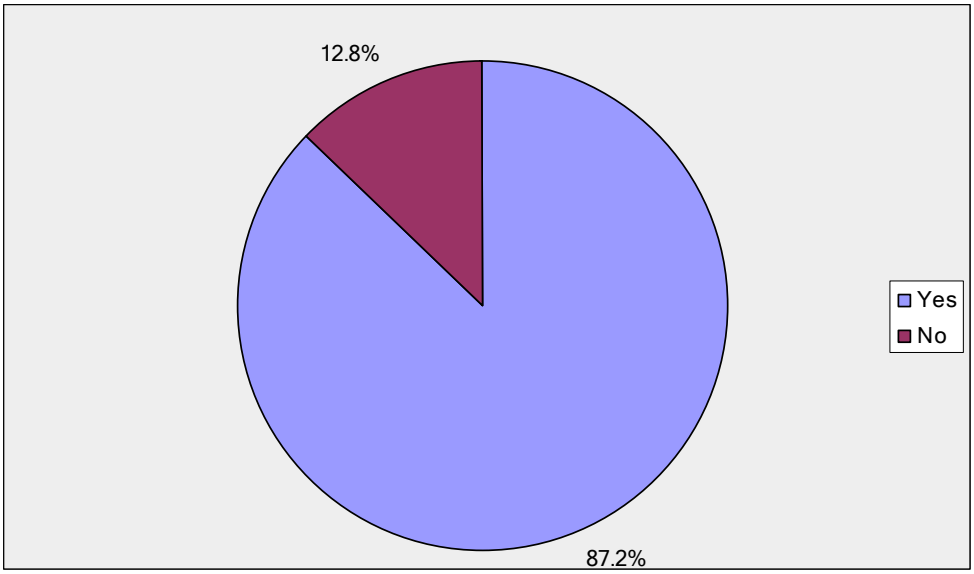
2.7 Question: Please estimate the percentage of employees who live outside of the Metrobus service area (St. John's/Mount Pearl)?



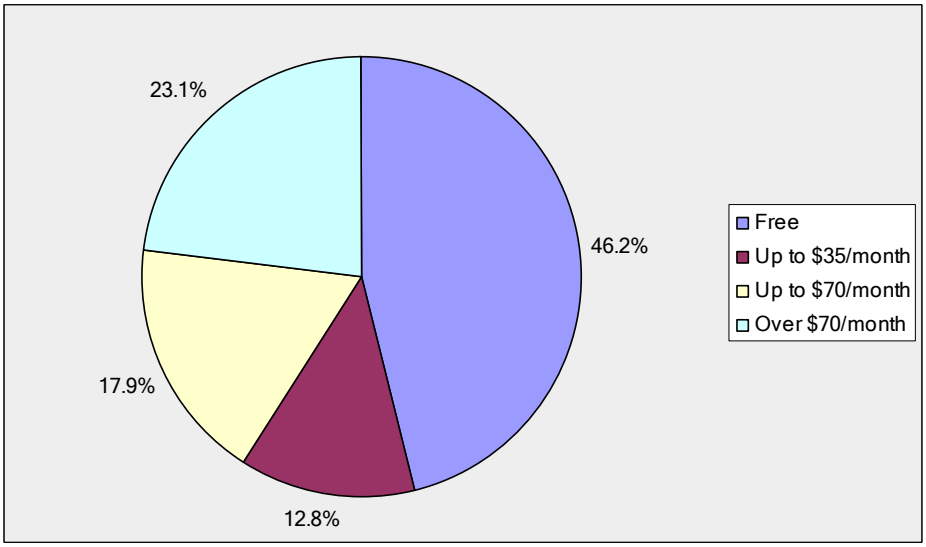
3.0 RELATIONSHIP TO TRANSIT

Businesses were queried about their relationship with Metrobus. Questions gauged level of usage as well as business practices that effect transit usage, such as providing free parking. Information regarding opinions about transit was also gathered.

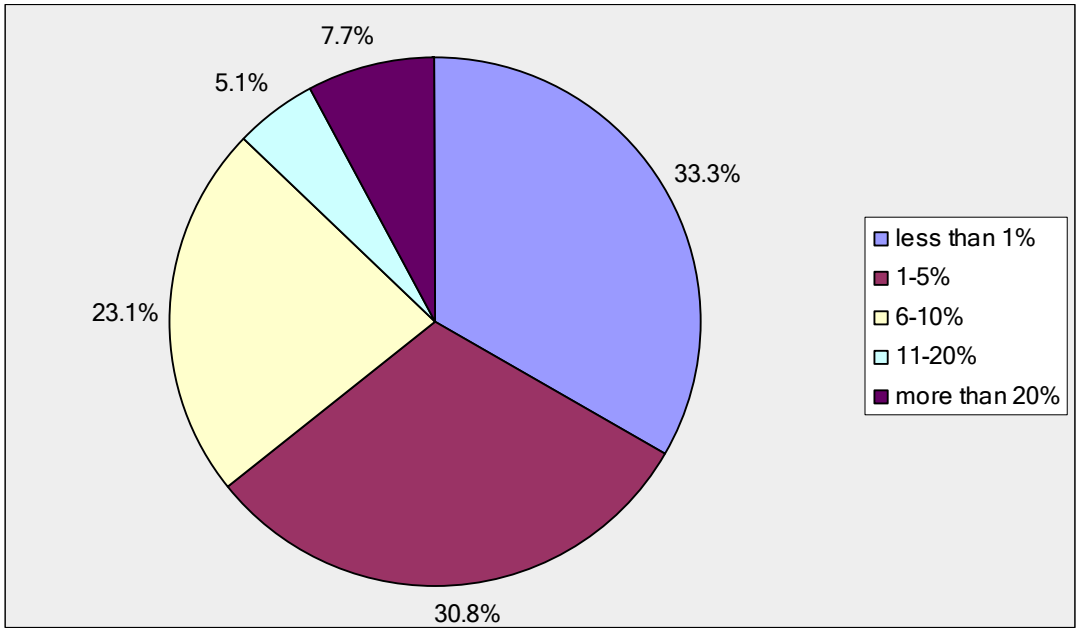
3.1 Question - Does your business/location provide parking for employees?



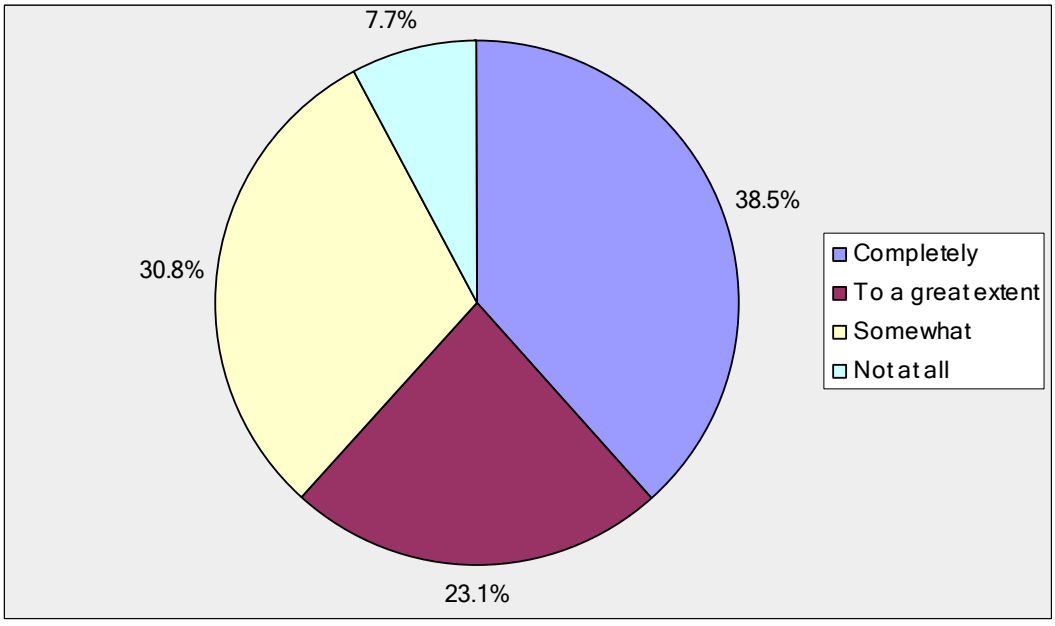
3.2 Question: What is the cost of employee parking?



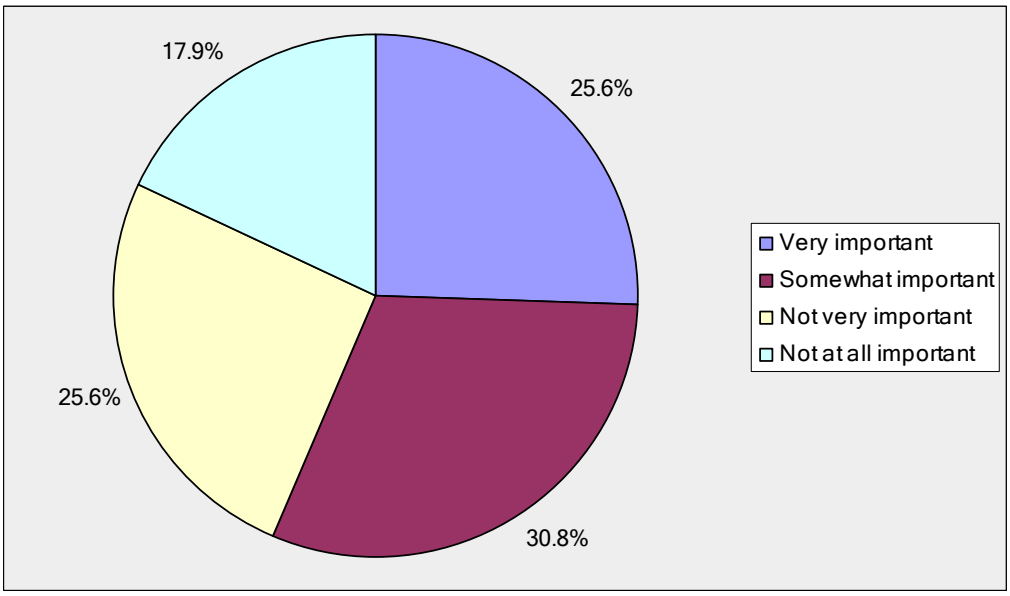
3.3 Question: Please estimate what percentage of employees might regularly use Metrobus to get to/from work?



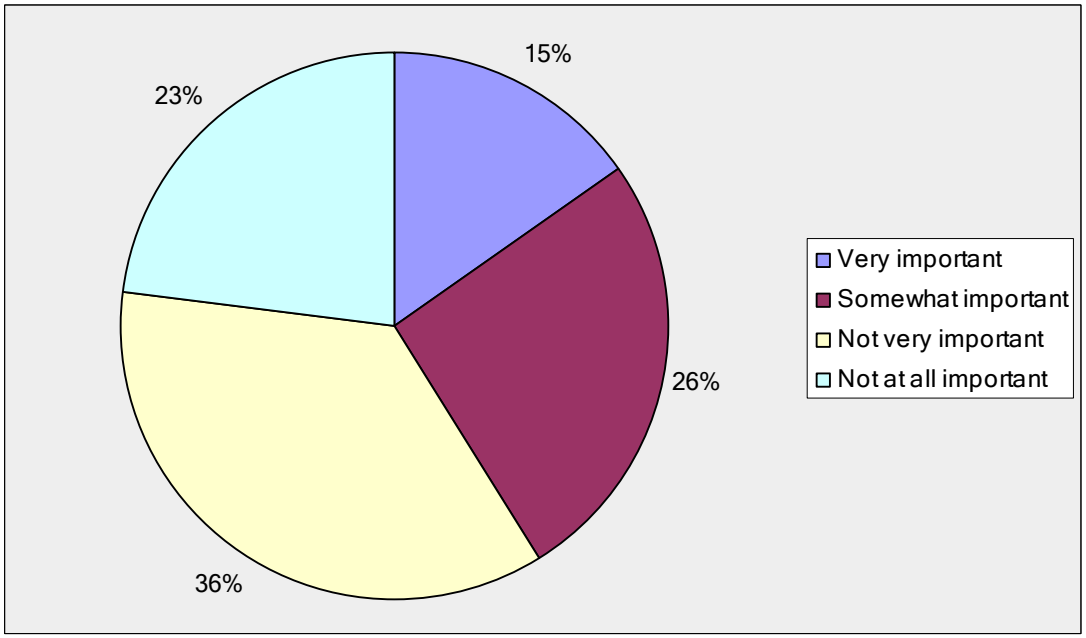
3.4 Question: Do the current transit service hours meet the needs of your employees/clients/customers? Note Metrobus service hours are: Monday-Friday 6:30AM-12:30AM Saturday 7:00AM-12:30AM Sunday 8:30AM-8:30PM



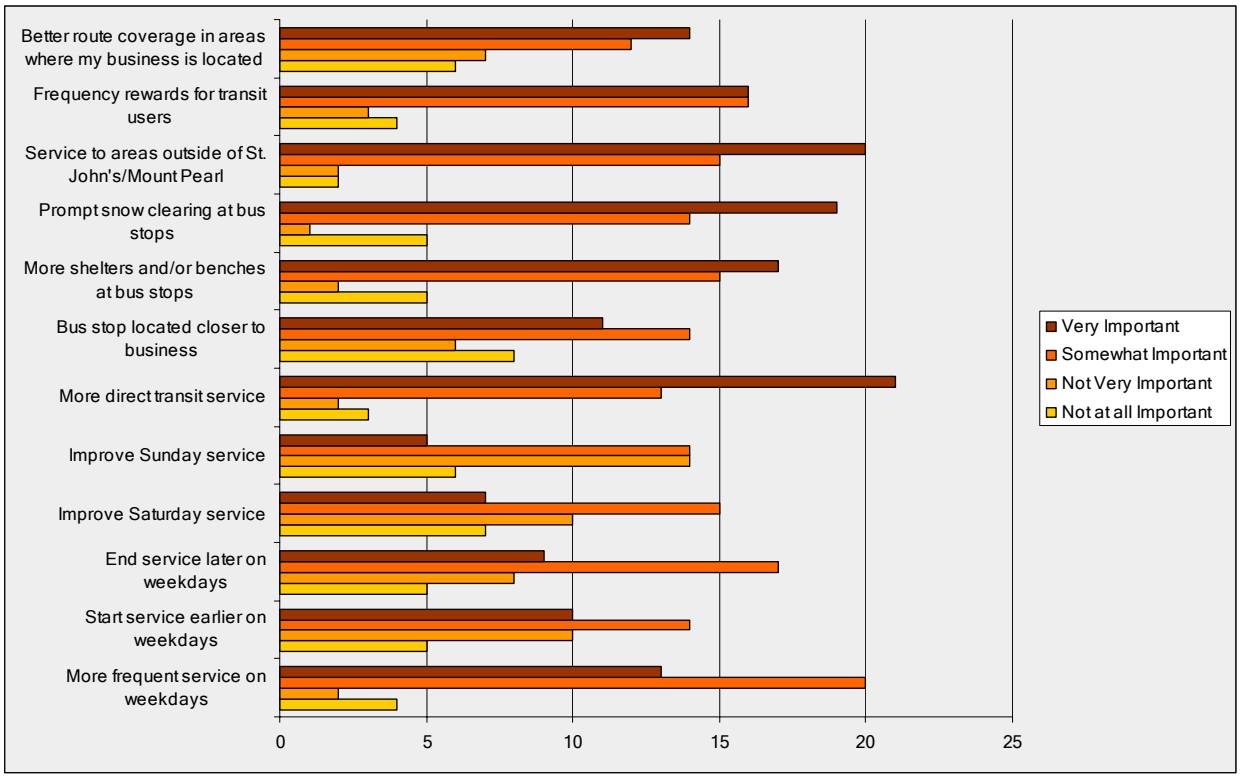
3.5 Question: How important is transit in attracting and retaining employees?



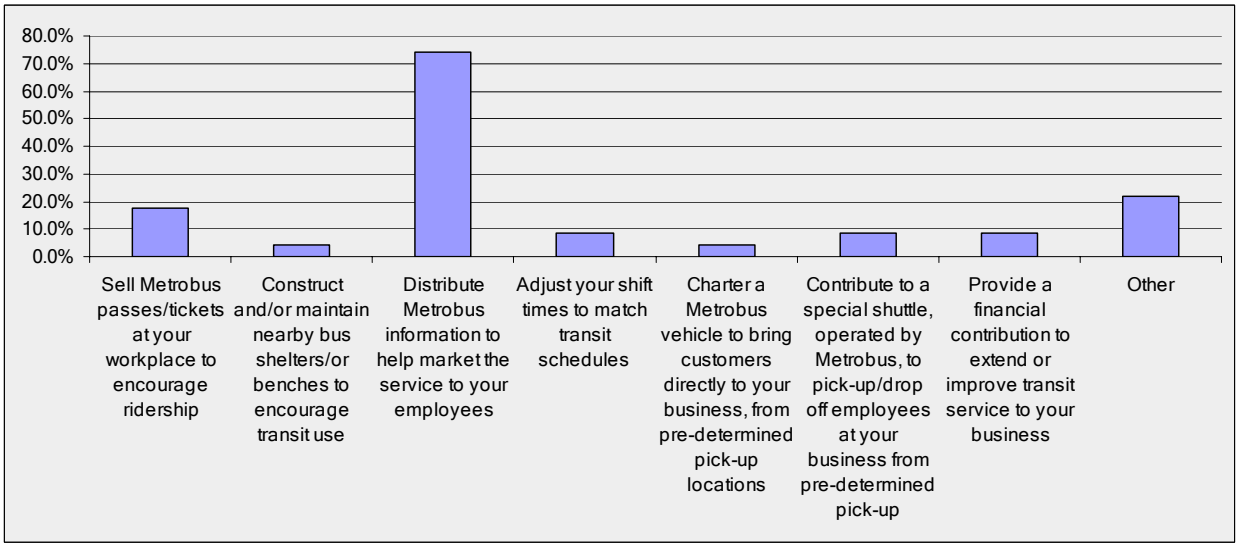
3.6 Question: How important is transit in the attracting customers/clients to your business/location?



3.7 Question: How important would you rate the following potential improvements in Metrobus services?



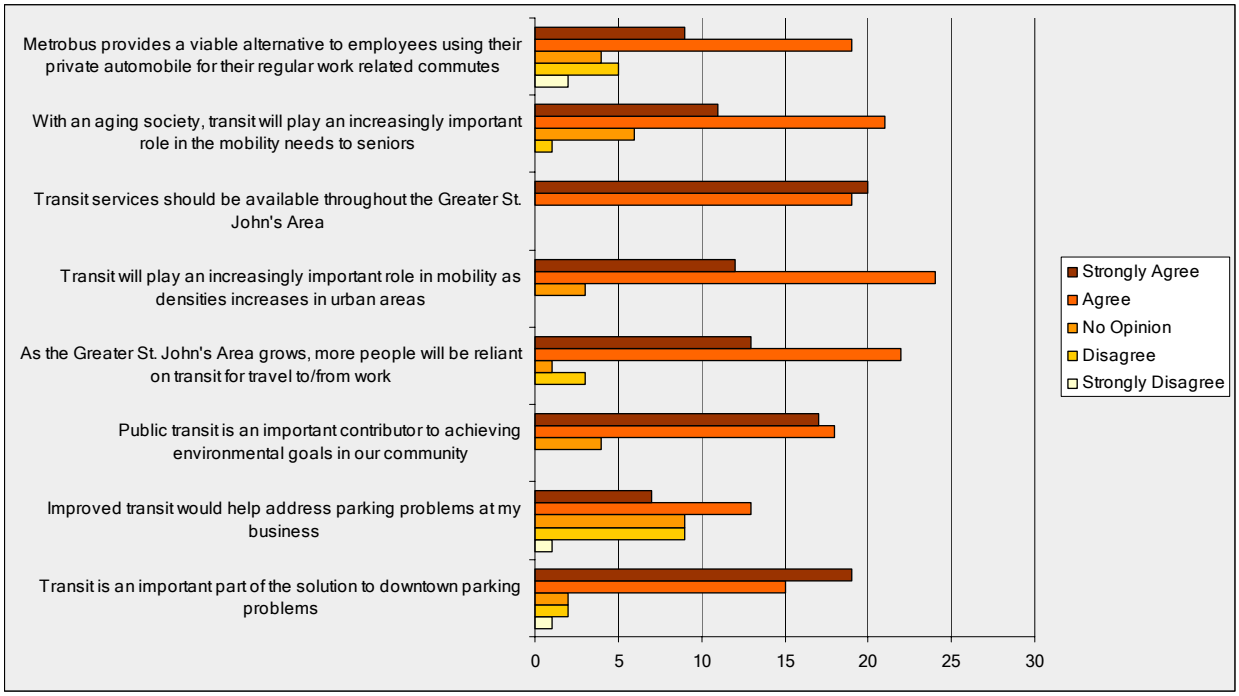
3.8 Would you CONSIDER participating in a partnership with Metrobus to obtain or improve transit service where your business would:



4.0 OPINIONS ABOUT TRANSIT

Businesses were queried about their opinions regarding general statements on public transit.

4.1 Question: Please convey your opinion on the following statements:



APPENDIX E
Onboard Passenger Survey Sample and Results

Metrobus On-Board Passenger Survey

Metrobus is reviewing our transit system to improve service for citizens.

Please take a few minutes to complete this survey for the current ONE-WAY trip that you are making. Please place the completed forms in the marked envelope near the rear doors or the driver. ***Thank you***!

Trip Characteristics

What Route are you on <u>now</u>?

What was your primary reason for using Metrobus today?

☐ Work ☐ University ☐ High School ☐ Elementary School ☐ Other

☐ Shopping ☐ Medical ☐ Daycare ☐ Recreation/ Visiting

How long did you walk to get from your home to the bus stop?

☐ Less than 5 minutes ☐ 5 to 10 minutes ☐ Over 10 minutes

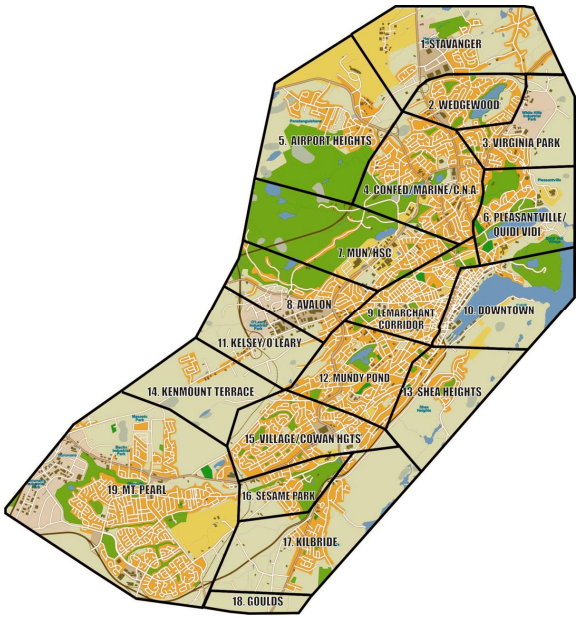
☐ I rode my bike ☐ I got a drive ☐ I drove to the bus stop

Does this trip require you to transfer to another route?

☐ Yes ☐ No If yes, which route? _____

Referring to the map below and using the check boxes, please check where you began your trip (Start) and where you ended your trip (End) using Metrobus. Please do not indicate any transfers.

Start	End	
☐	☐	**1. Stavanger**
☐	☐	**2. Wedgewood**
☐	☐	**3. Virginia Park**
☐	☐	**4. Confed/Marine/ C.N.A.**
☐	☐	**5. Airport Heights**
☐	☐	**6. Pleasantville/ Quidi Vidi**
☐	☐	**7. MUN/HSC**
☐	☐	**8. Avalon**
☐	☐	**9. Lemarchant Corridor**
☐	☐	**10. Downtown**
☐	☐	**11. Kelsey/O'Leary**
☐	☐	**12. Mundy Pond**
☐	☐	**13. Shea Heights**
☐	☐	**14. Kenmount Terrace**
☐	☐	**15. Village/Cowan Heights**
☐	☐	**16. Sesame Park**
☐	☐	**17. Kilbride**
☐	☐	**18. Goulds**
☐	☐	**19. Mt. Pearl**



If you are unaware of the zone you started or ended you trip, indicate the closest intersection below:

Start _____ at _____

End _____ at _____

(Please indicate the closest major intersection)

Tell us about yourself and your travel characteristics

How many days per week do you use Metrobus?	How many times today will you use Metrobus?	How long have you used Metrobus?	What is your age?
☐ 1 to 2 ☐ 3 to 4 ☐ 5 ☐ 6 to 7	☐ 1 ☐ 2 ☐ 3 or more	☐ Less than 1 year ☐ 1 to 2 years ☐ 3 to 5 years ☐ 6+ years	☐ 0-19 ☐ 45-54 ☐ 20-24 ☐ 55-64 ☐ 25-34 ☐ 65-74 ☐ 35-44 ☐ 75+
What is your gender? ☐ Male ☐ Female	**Was a car available for you to drive for this trip today?** ☐ Yes ☐ No	**Are you a Post Secondary Student?** ☐ Memorial ☐ Marine Institute ☐ CONA ☐ Other ☐ Not Applicable	**What is your average annual income?** ☐ less than $20,000 ☐ $20,000 - $39,999 ☐ $40,000 - $59,999 ☐ $60,000 or more

Passenger Opinion

How would you rate the following elements of Metrobus service today?

	Very Good	Good	Fair	Poor	Very Poor
Travel time	☐	☐	☐	☐	☐
Convenience	☐	☐	☐	☐	☐
Reliability	☐	☐	☐	☐	☐
Hours of service	☐	☐	☐	☐	☐
Frequency	☐	☐	☐	☐	☐
Value for Fare	☐	☐	☐	☐	☐
Overall Service	☐	☐	☐	☐	☐

Please provide additional comments on the Metrobus service?

Evaluation of 2007 Service Changes

Did you use Metrobus prior to the service changes introduced in 2007?

☐ Yes ☐ No

If yes, would you rate the service changes as:

☐ Significantly better	☐ Better	☐ The same	☐ Worse	☐ Significantly Worse

If yes, since the 2007 service change, my use of Metrobus has:

☐ Increased ☐ Decreased ☐ Stayed the same ☐ I did not used the service before 2007

Are you interested in attending a Focus Group about the 2007 service changes?

☐ Yes ☐ No If yes, please provide your email: _____

Thank you. Please return the completed survey to the on-board surveyor/drop box, or return to the St. John's Transit Customer Service Centre at 245 Freshwater Road, St. John's.

1.0 INTRODUCTION

An on-board passenger survey was conducted during regular service hours on Tuesday March 23rd, 2010 for the conventional transit service. Survey questions probed trip patterns, trip purpose, walking distance to and from bus stops, transfer patterns, demographic characteristics, and frequency of use, as well as rider opinions on the 2007 service changes. Transit users were also invited to provide written comments on the survey card.

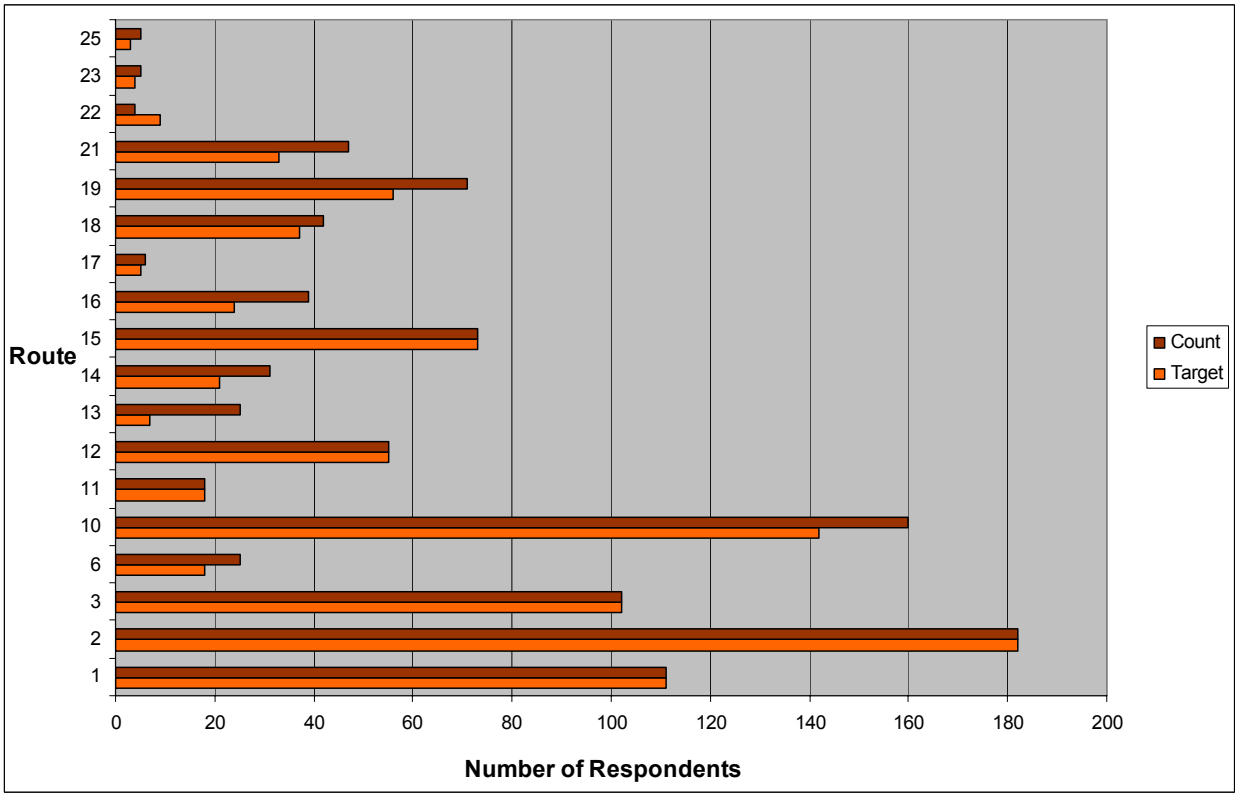
Excellent cooperation was received from the drivers in distributing and collecting the surveys. Dillon and Metrobus staff monitored the survey and assisted in handing out and collecting surveys. Drivers were encouraged to promote the survey to passengers as much as possible.

A total of 1,001 valid surveys were collected, meeting a target of 900 completed surveys. On a typical weekday there are an estimated 6,000 people who use Metrobus yielding a survey response rate of 17 percent. Dillon staff verified the survey card responses for completion and accuracy. Surveys were collected for each route in proportion to the ridership on the routes

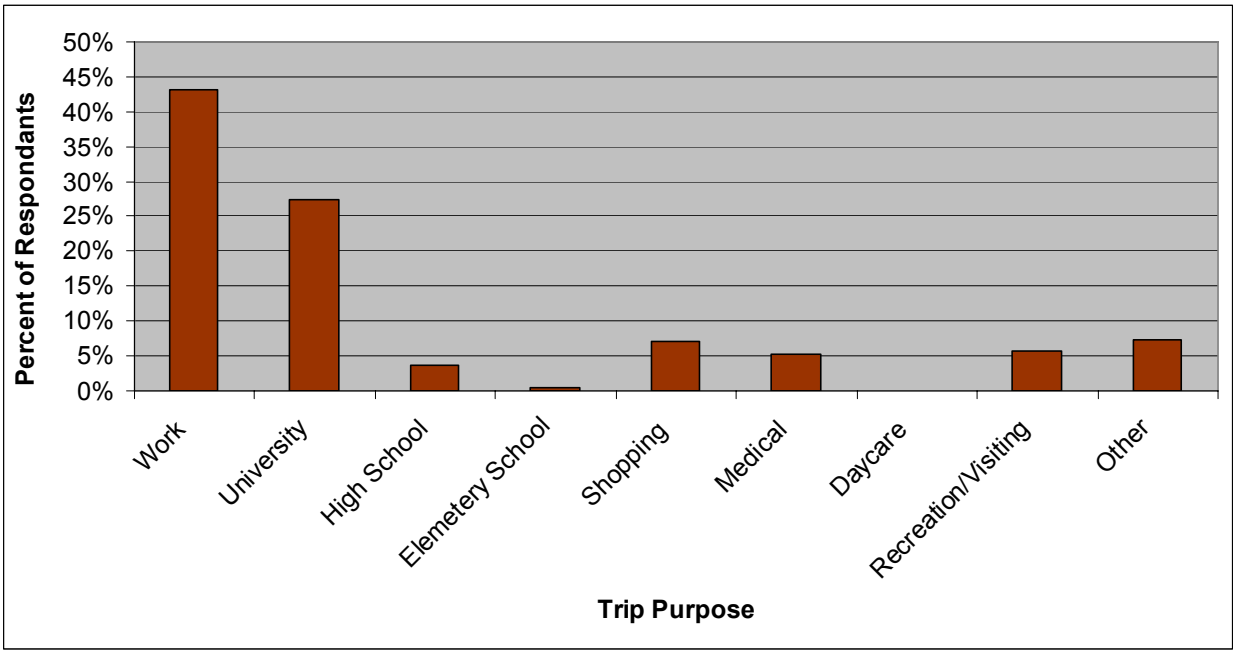
2.0 TRIP CHARACTERISTICS

The following questions probed the characteristics of the trip that the respondent was currently on.

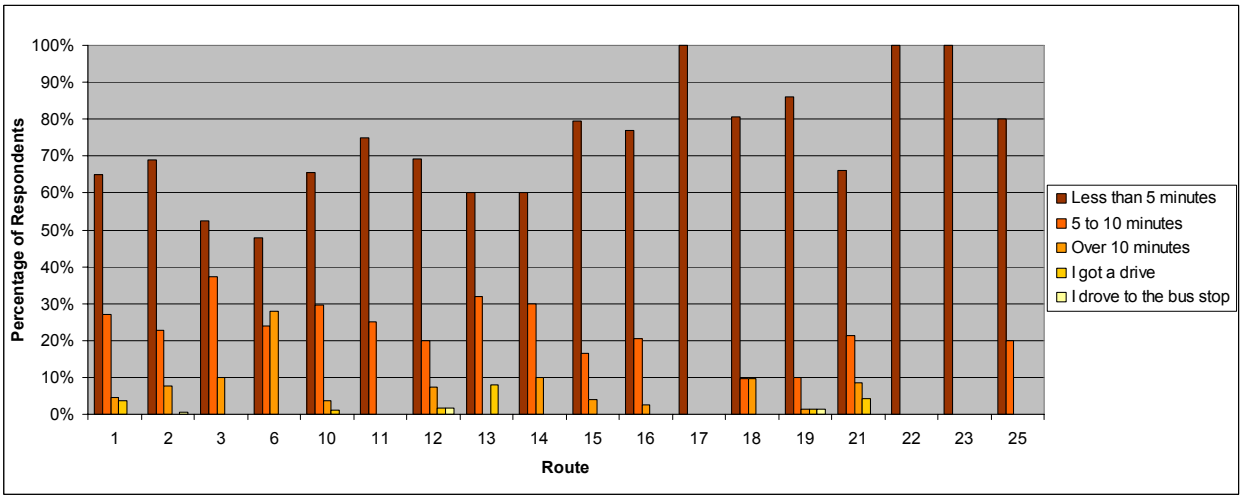
2.1 Question: What route are you on now?



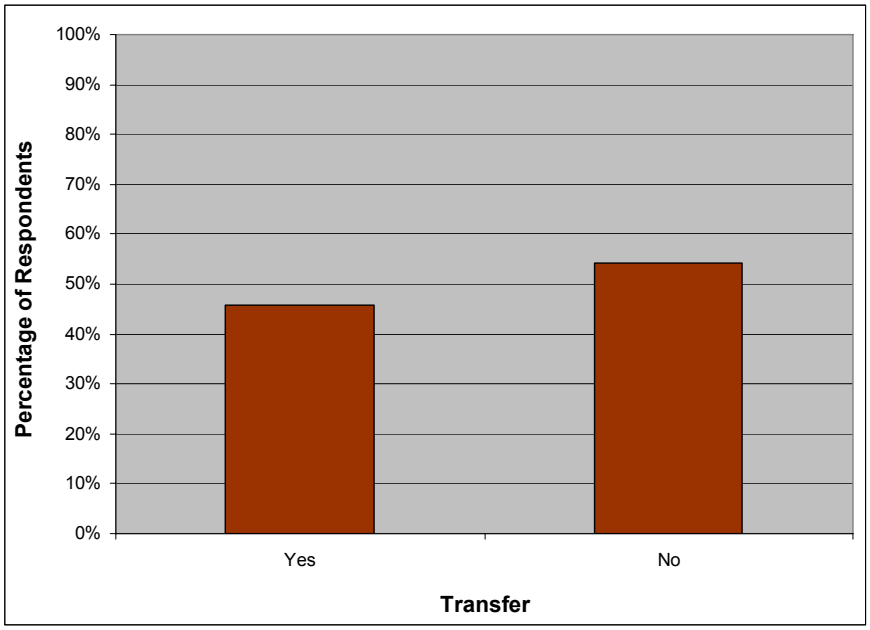
2.2 Question: What was your primary reason for using Metrobus today?

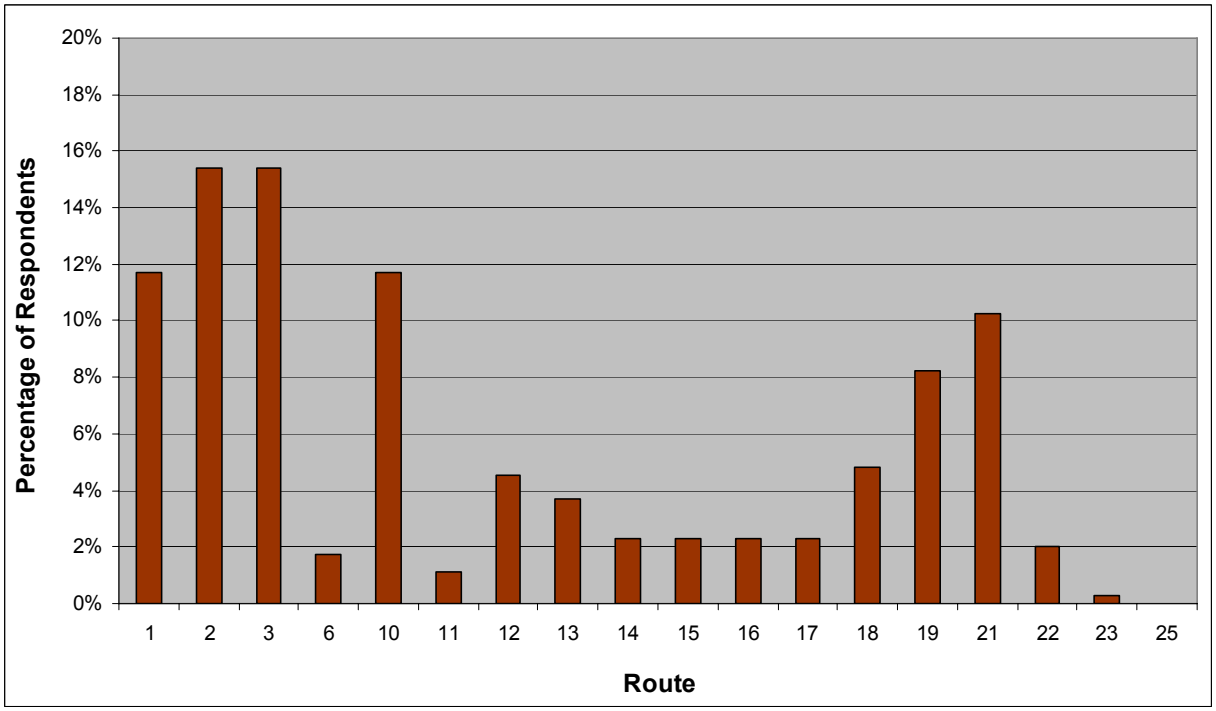


2.3 Question: How long did you walk to get from your home to the bus stop?



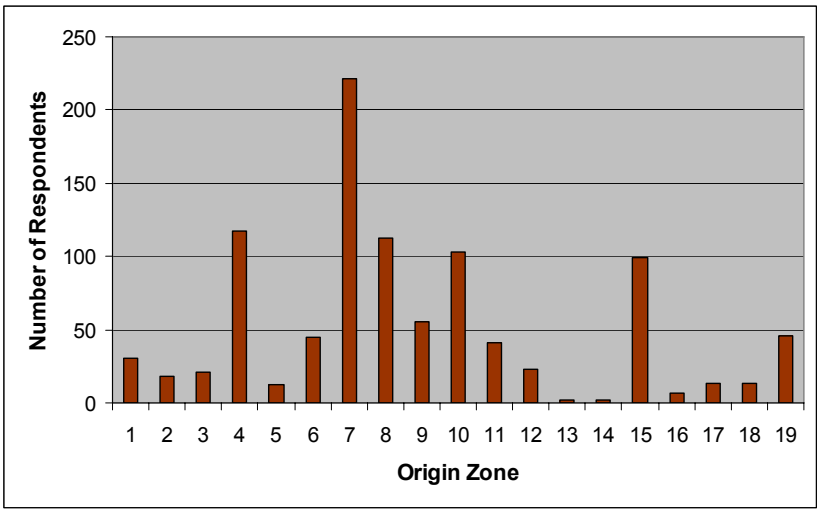
2.4 Question: Does this trip require you to transfer to another route? If yes, which route?

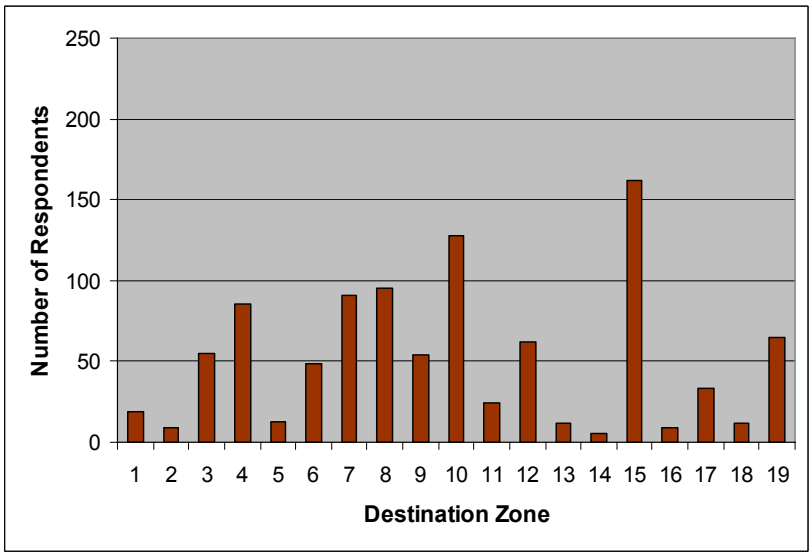


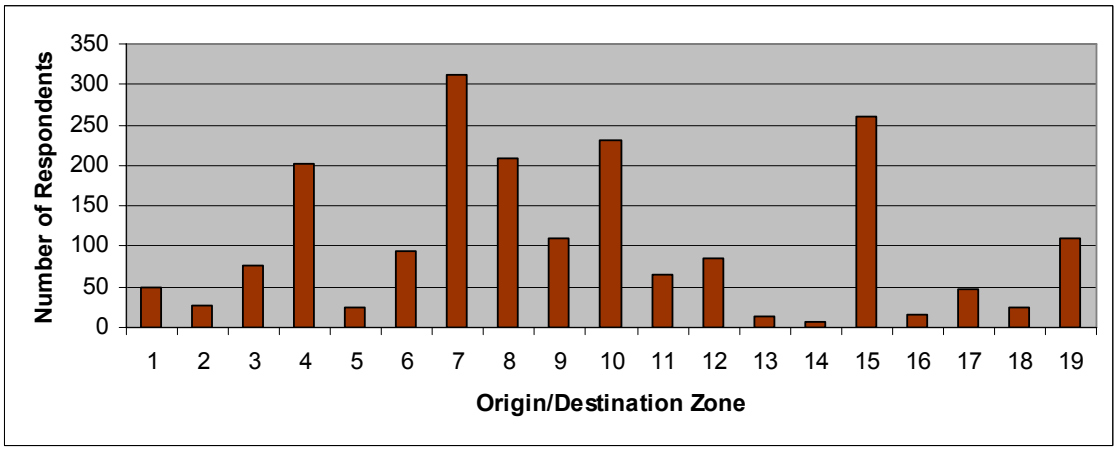


2.5 Question: Please check where you began your trip (Start) and where you ended your trip (End) using Metrobus. Please do not indicate any transfers.

1. Stavanger
2. Wedgewood
3. Virginia Park
4. Confed/Marine/ C.N.A.
5. Airport Heights
6. Pleasantville/ Quidi Vidi
7. MUN/HSC
8. Avalon
9. Lemarchant Corridor
10. Downtown
11. Kelsey/O'Leary
12. Mundy Pond
13. Shea Heights
14. Kenmount Terrace
15. Village/Cowan Heights
16. Sesame Park
17. Kilbride
18. Goulds
19. Mt. Pearl



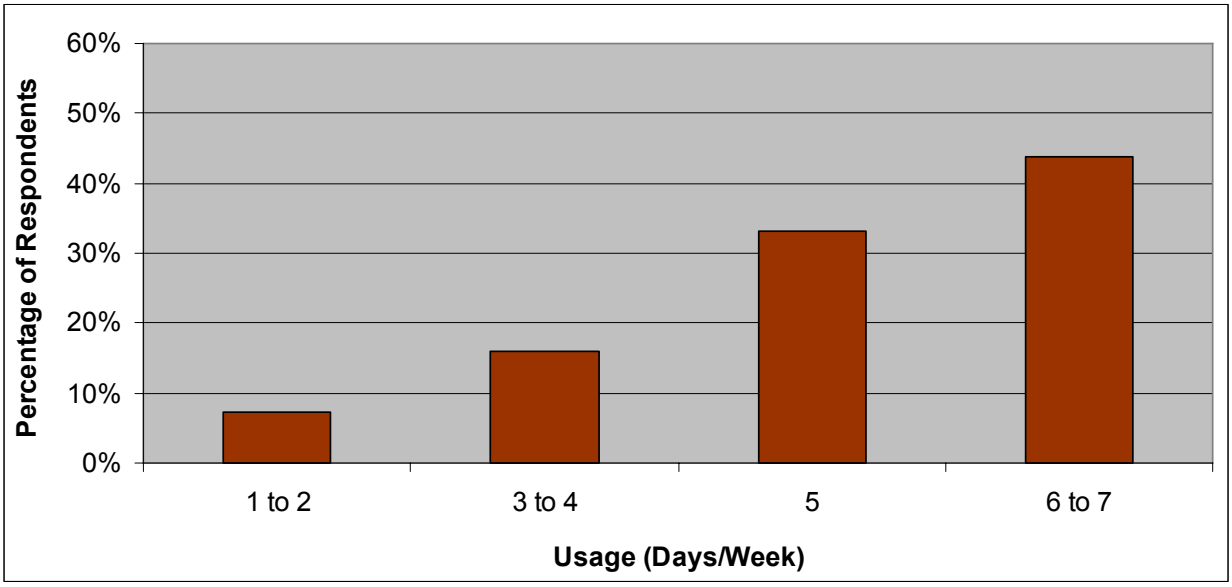




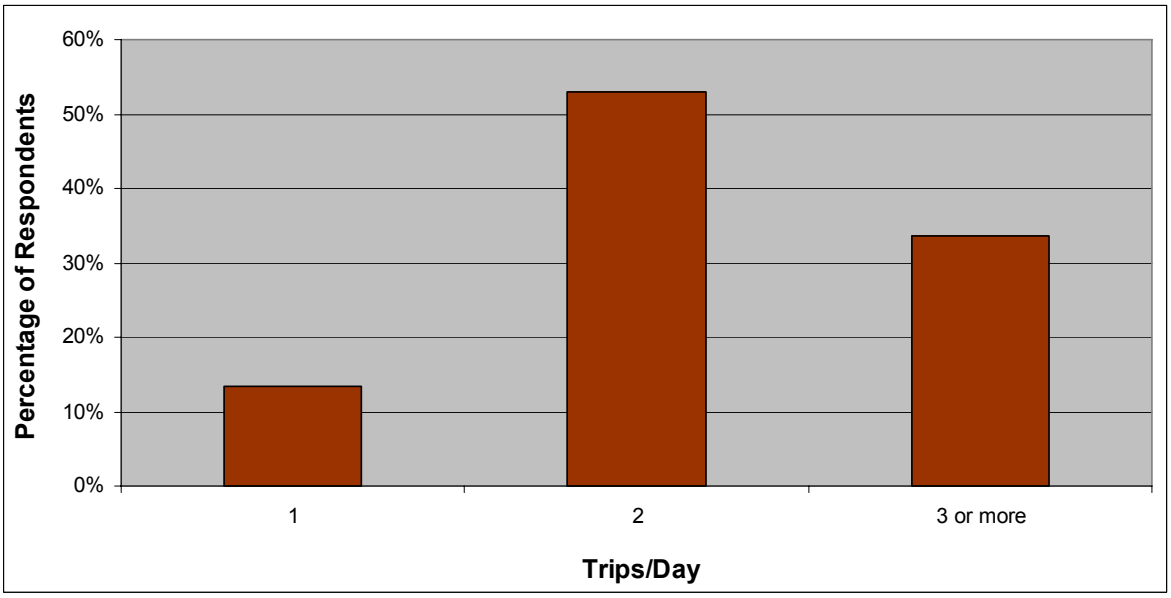
3.0 TRAVEL CHARACTERISTICS

The following questions targeted the general travel behaviours of the respondents.

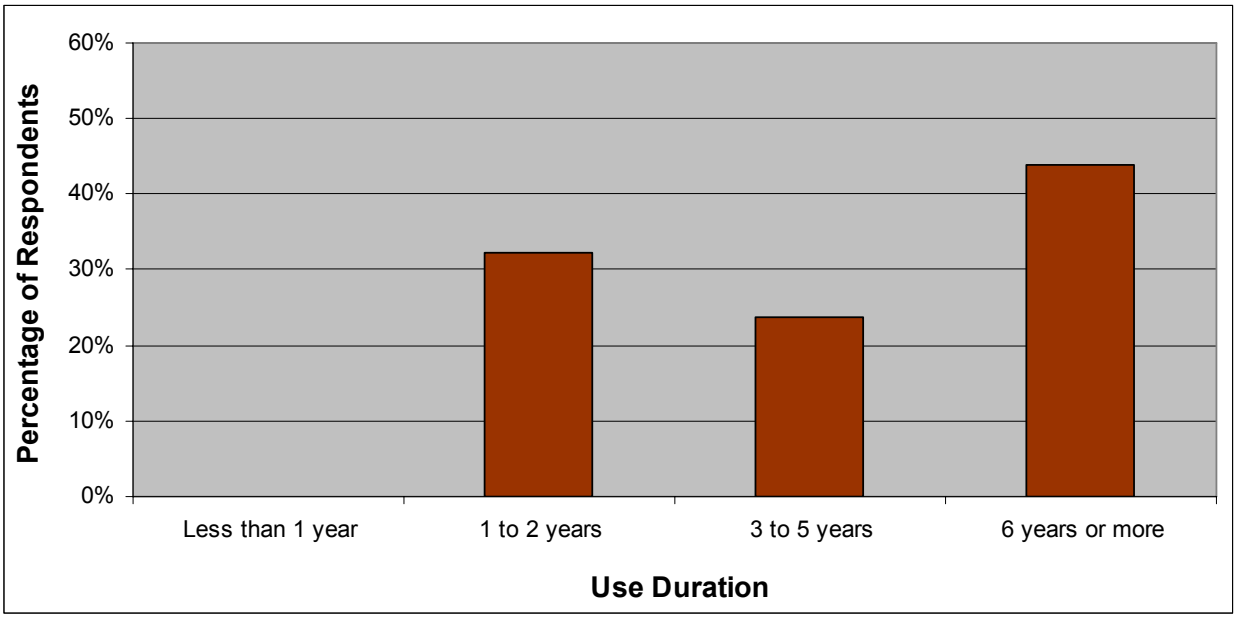
3.1 Question - How many days per week do you use Metrobus?



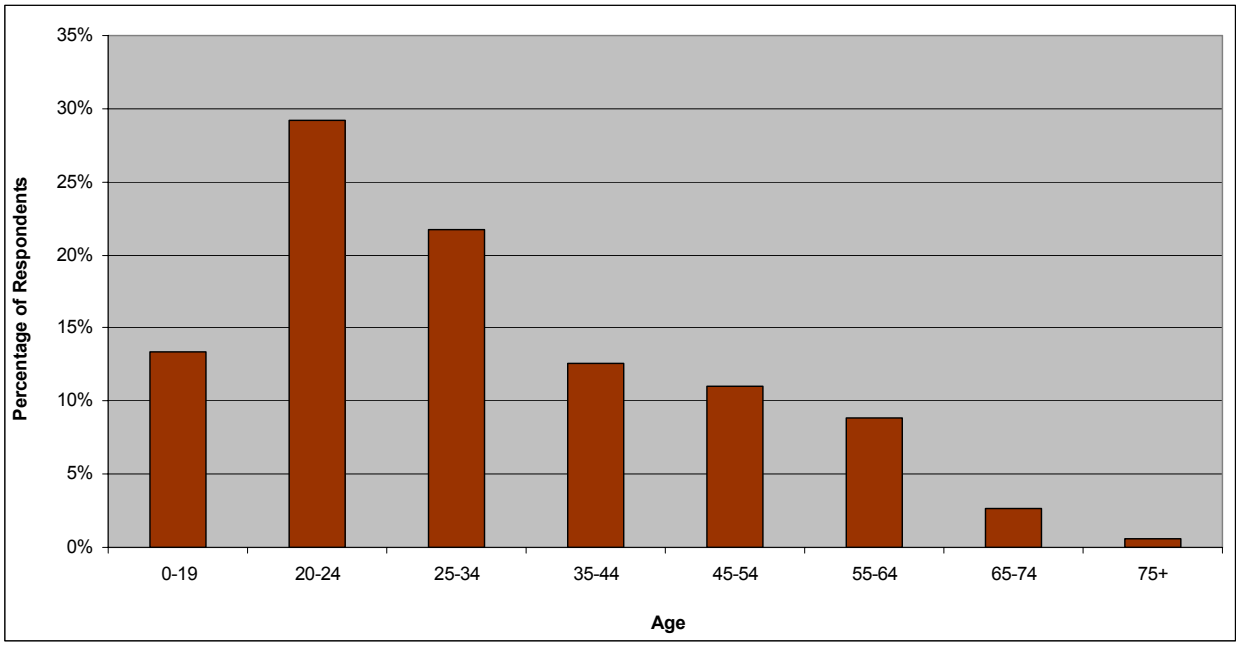
3.2 Question: How many times today will you use Metrobus?

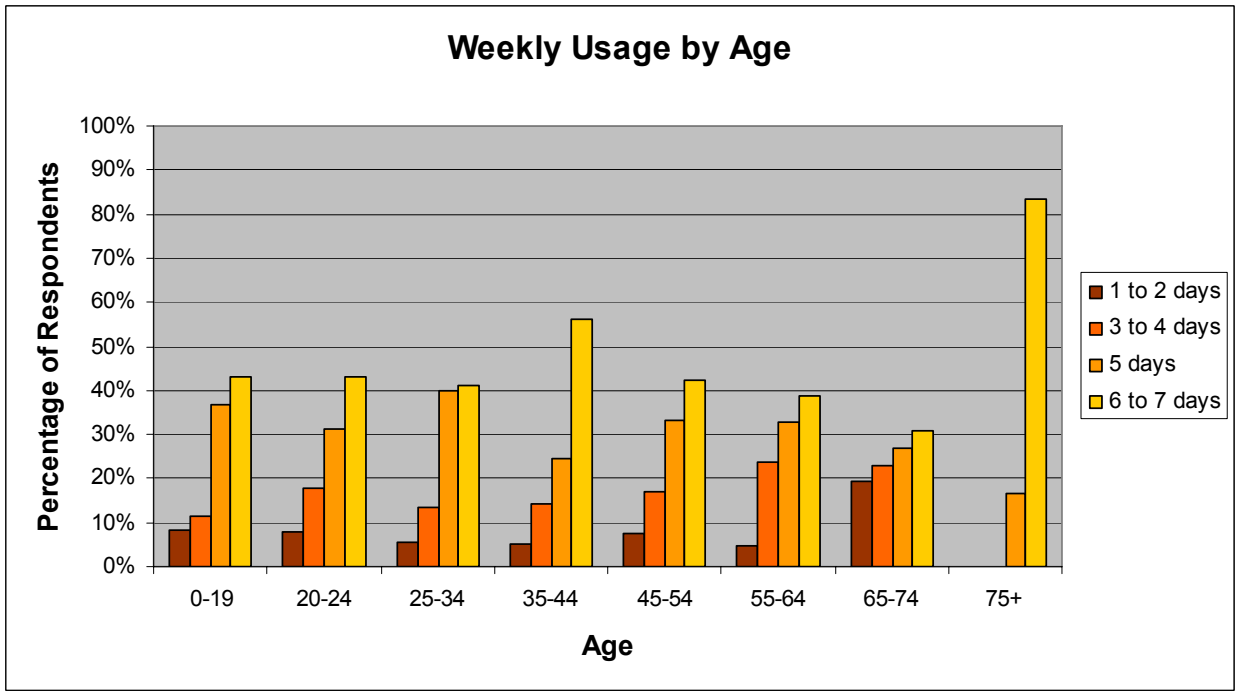


3.3 Question: How long have you used Metrobus?

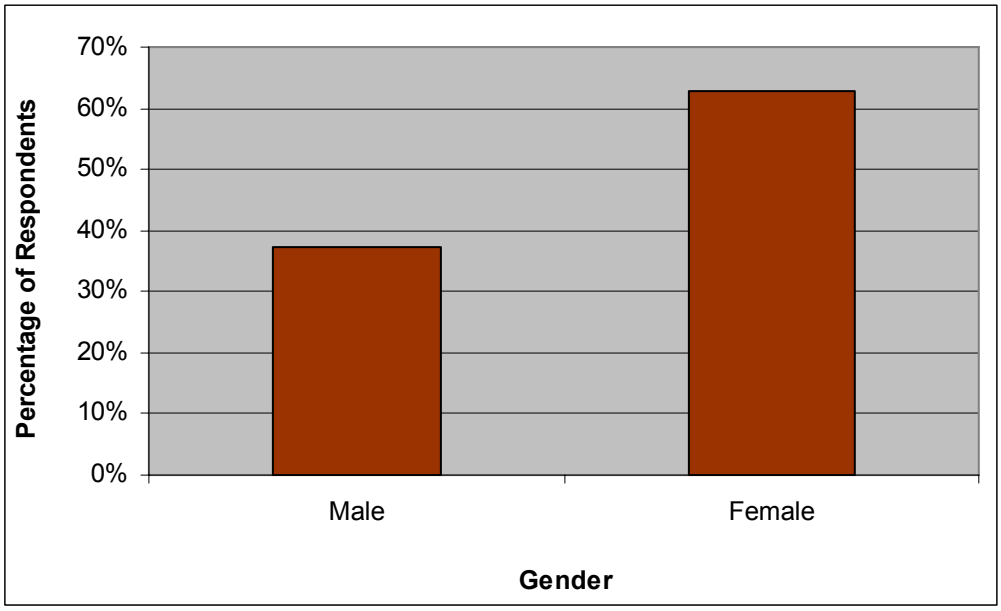


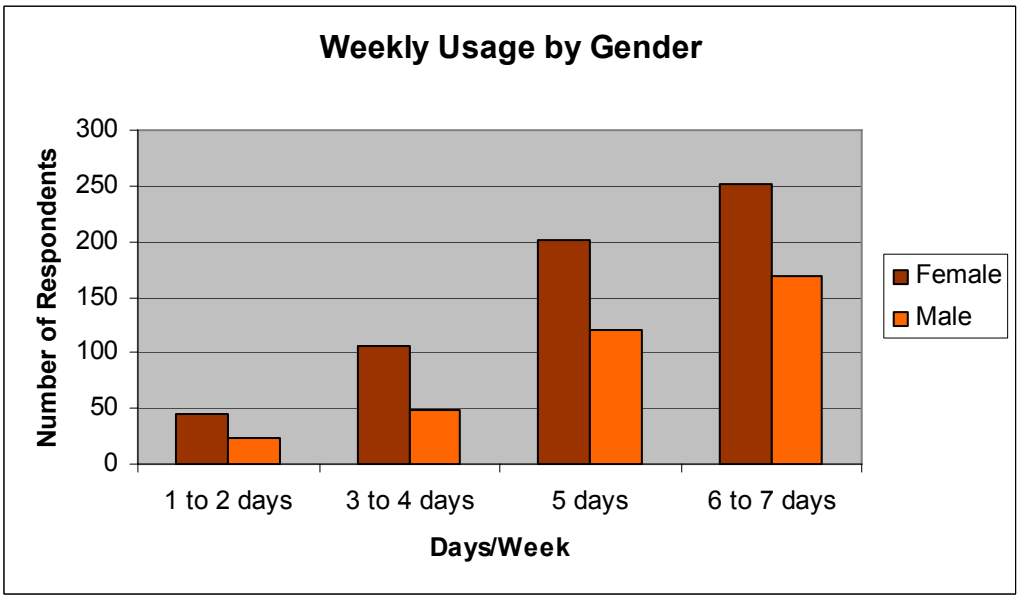
3.4 Question: What is your age?



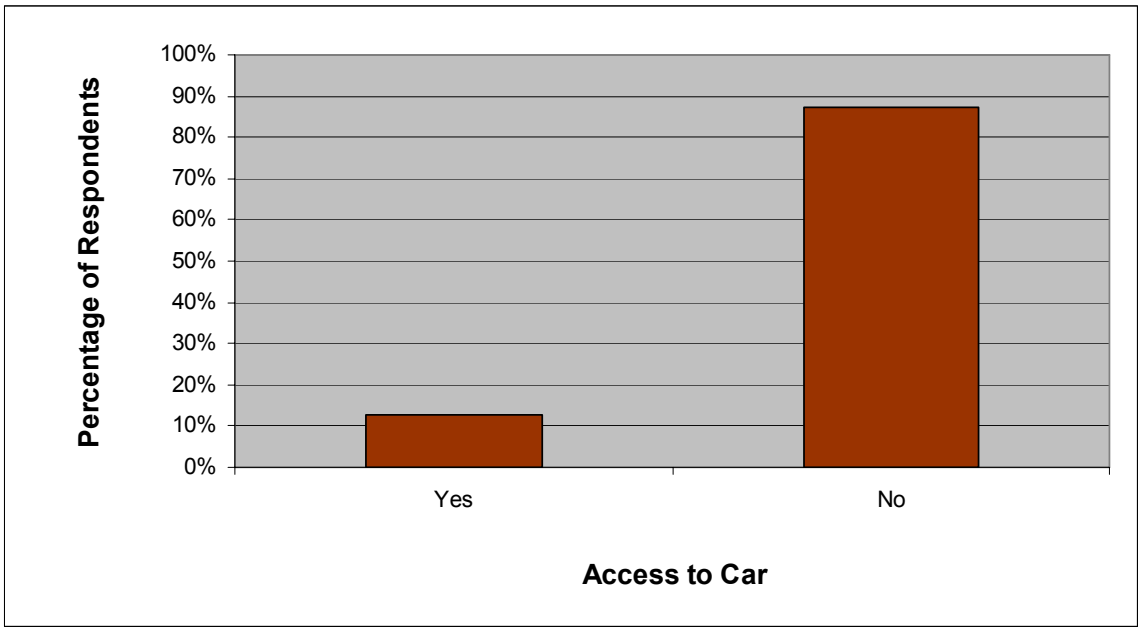


3.5 Question: What is your gender?

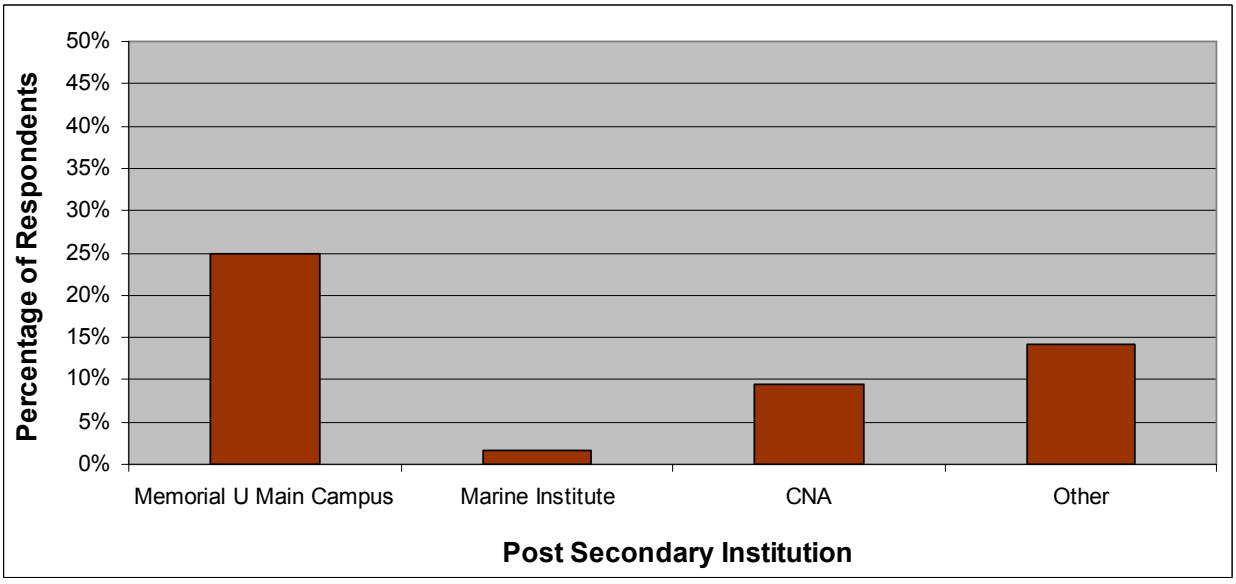




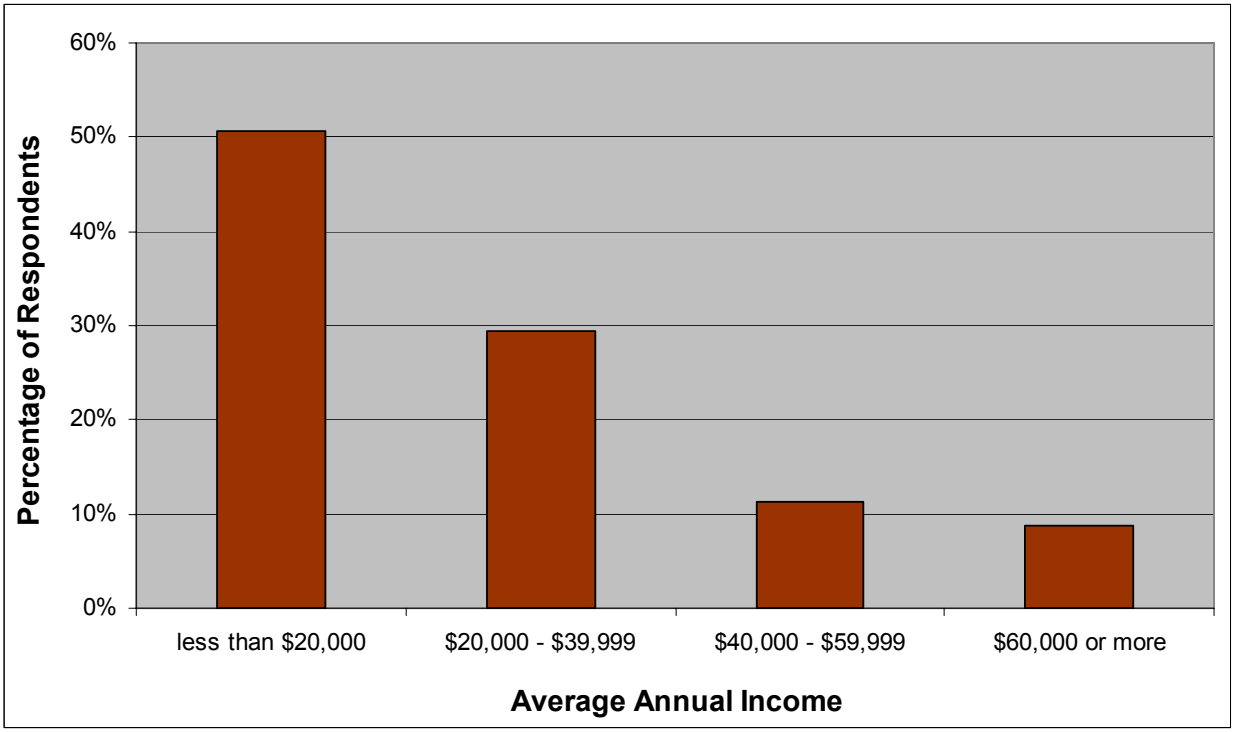
3.6 Question: Was a car available for you to drive for this trip today?

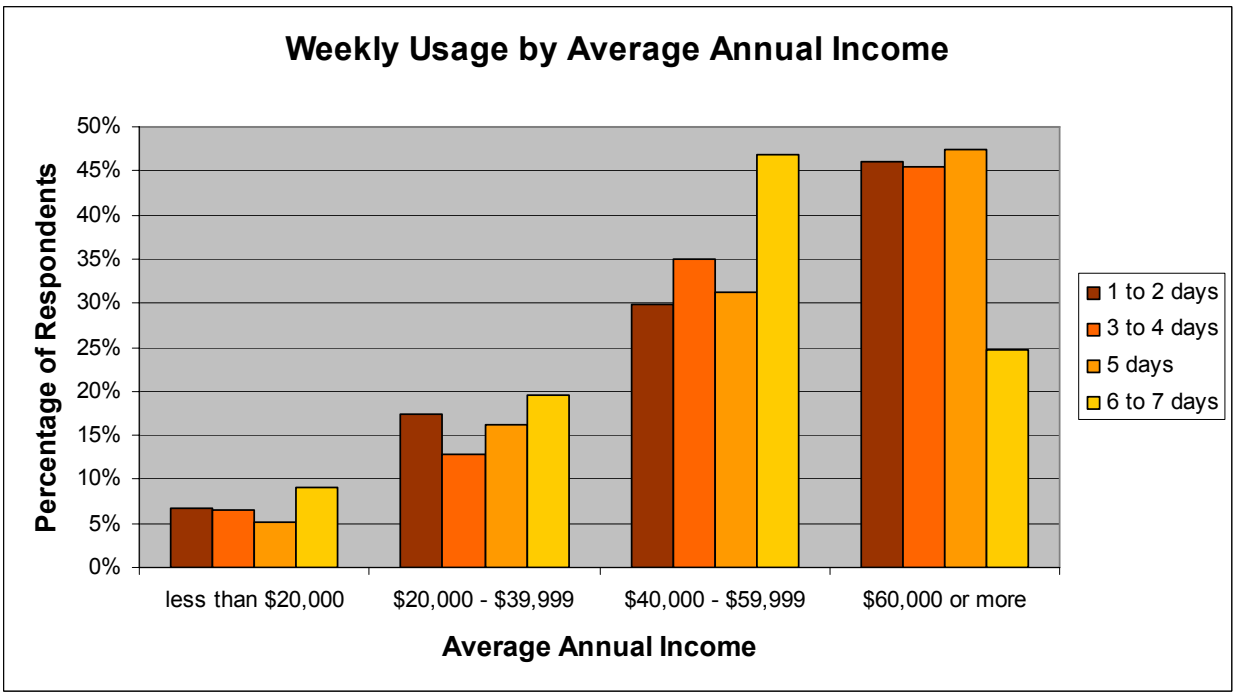


3.7 Question: Are you a post-secondary student?



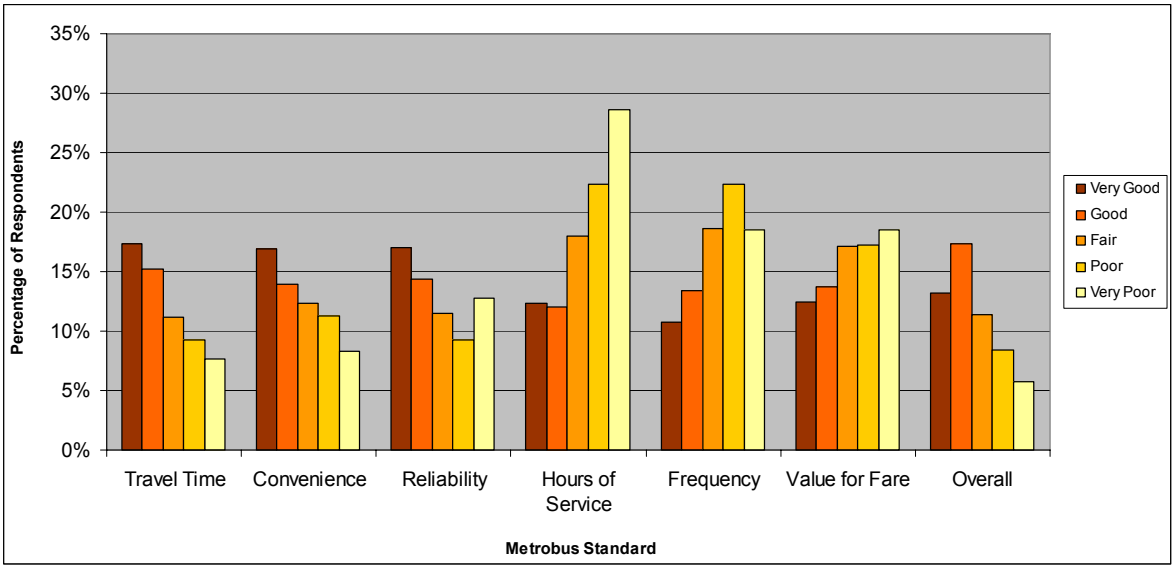
3.8 Question: What is your average annual income?





4.0 PASSENGER OPINION

The below question asked respondents to rate various elements of current Metrobus services. Space was provided for additional comments.



Positive Comments about Metrobus

Comment	Count	Percentage
Drivers are great	65	44%
Great service	45	31%
Convenience	18	12%
Frequency and routes	7	5%
Like the fare price/options	5	3%
Other	4	3%
On time	3	2%
Total	***147***	***100%***

Improvements Suggested for Metrobus

Comment	Count	Percentage
Better frequency	87	18%
Extended Sunday service	57	12%
Expanded routes	36	7%
Service reliability (not punctual)	34	7%
Extended service	32	7%
Extended service weekday nights	30	6%
Extended Saturday service	28	6%
Aggressive/impolite drivers	27	6%
Fares are too high	19	4%
Better buses	16	3%
Less transfers	16	3%
Better communication of information	13	3%
Better Sunday frequency	12	2%
More waiting areas/shelters	11	2%
Improve route structure	11	2%
Travel times are too long	11	2%
Extended service weekday mornings	10	2%
Other	32	7%
Total	***482***	***100%***

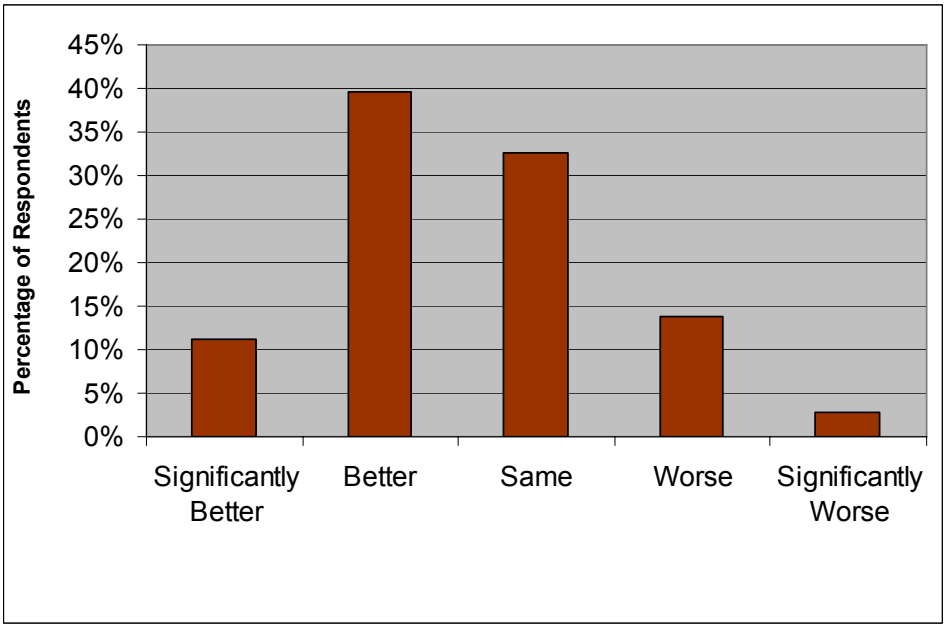
5.0 EVALUATION OF 2007 SERVICE CHANGES

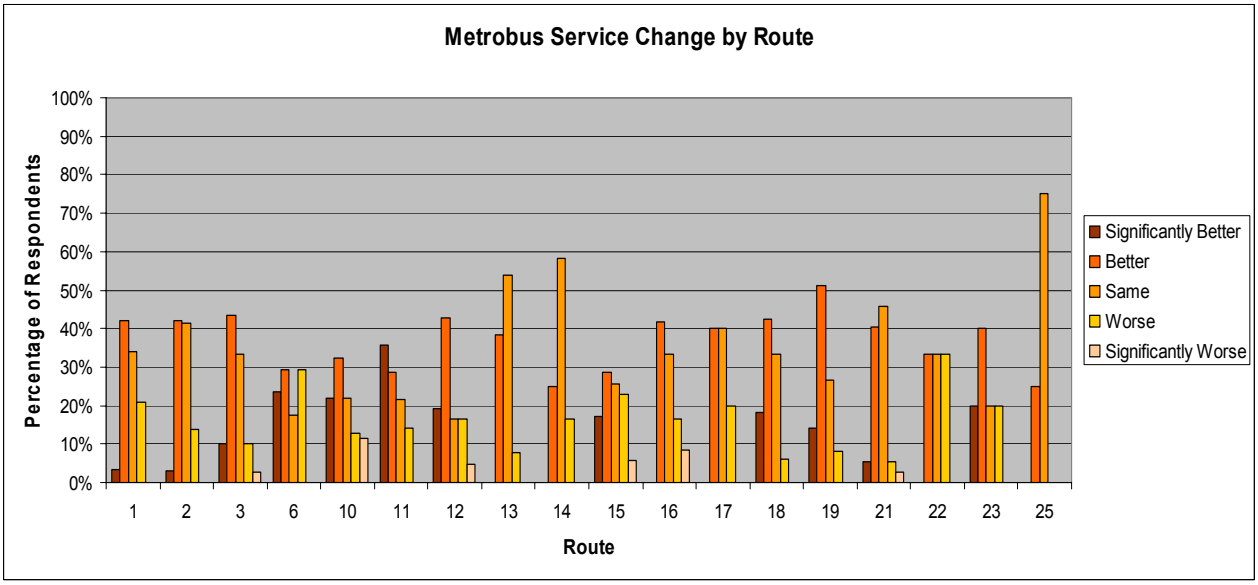
The following questions asked respondents to evaluate Metrobus services since the 2007 service changes.

5.1 Question: Did you use Metrobus prior to the service changes introduced in 2007?

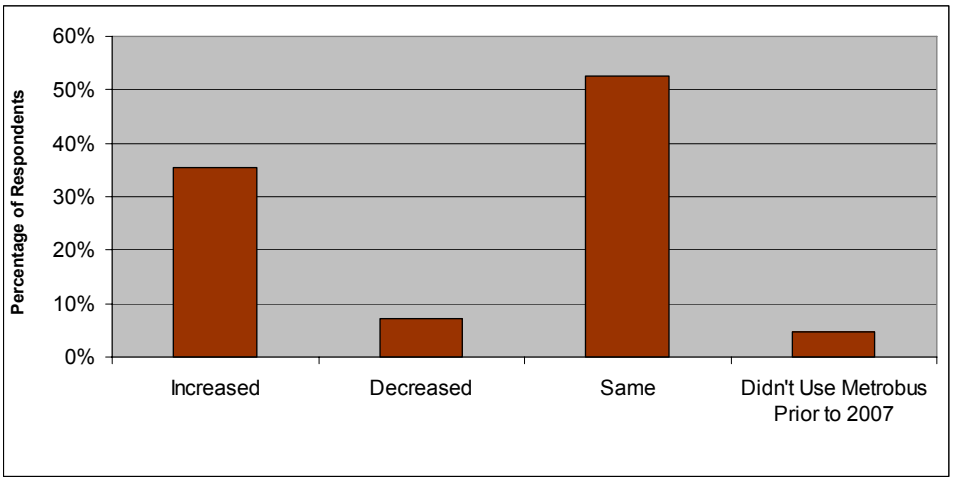
- Yes: 67%
- No: 33%

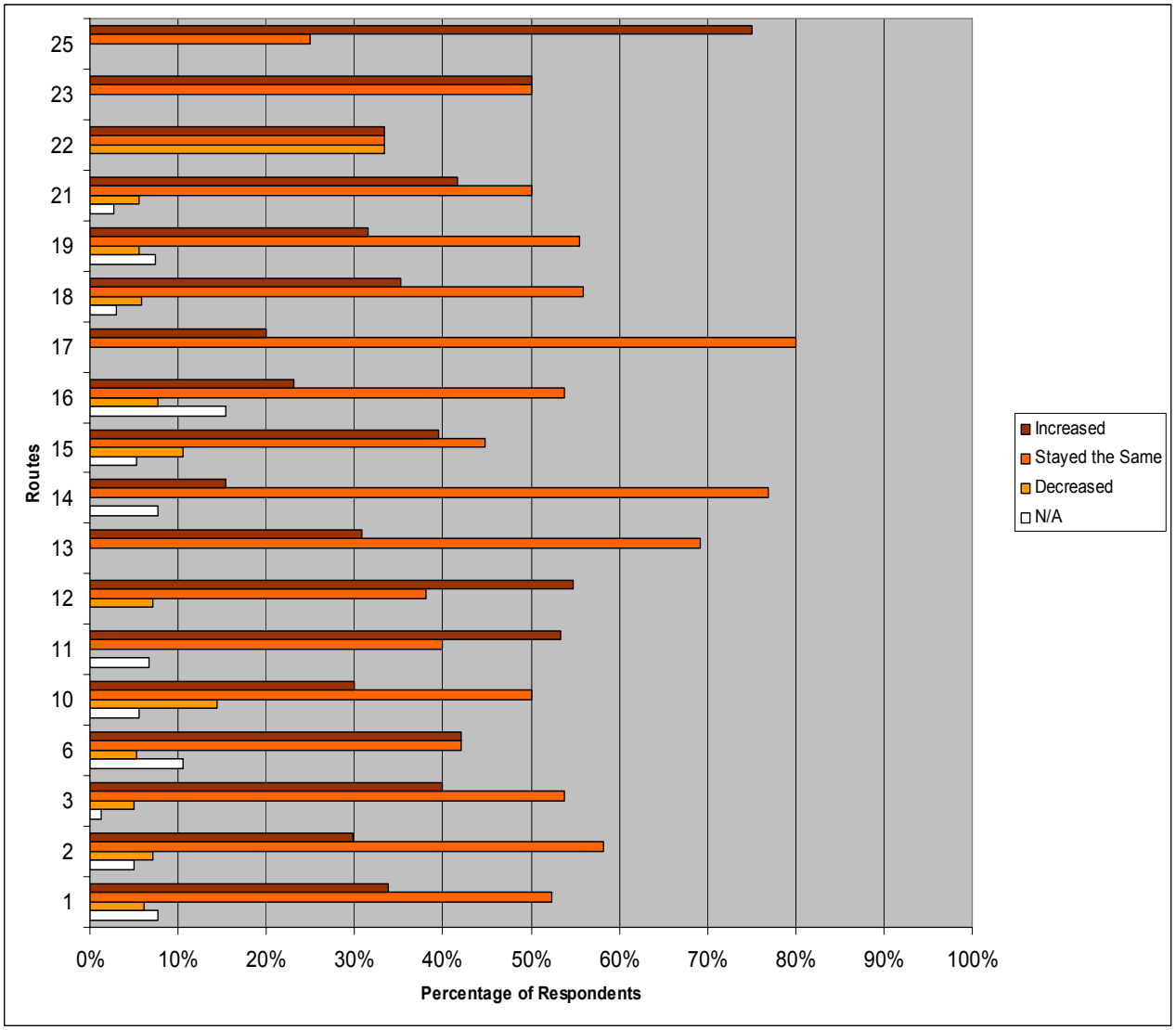
5.2 Question: If yes, would you rate the service as:





5.3 Question: If yes, since the 2007 service change, my use of Metrobus has:





APPENDIX F
Peer Review Municipalities and Statistics

(Preliminary / préliminaire)
Date: September 18, 2009 / le 18 septembre 2009

CUTA URBAN TRANSIT STATISTICS BENCHMARK REPORT
ACTU RÉSUMÉ STATISTIQUE DU TRANSPORT EN COMMUN

(Source: CUTA/ACTU)

Province	Municipality	Transit System	Service Area Population	Service Area Size	# of Fixed Routes	# of Access Routes	Total # of Vehicles	% Access Transit Fleet	% Access Bus Fleet	Average Bus Age	Adult Cash Fare	Ridership	Boardings	Rev Veh Hrs	Tot Veh Hrs	Rev Veh Kms	Tot Dir Op Exp	Reg Serv Pass Rev	Total Op Rev	R/C Ratio	Mun Op Contn / Capita	Net Dir Op Cost / Ridership	Average Fare	Tot Dir Op Exp / Ridership	Tot Dir & Aux Oper Exp / Tot Veh Hr	Ridership/Capita	Ridership / Rev Veh Hr	Rev Veh Hrs / Capita
CUTA Population 3 (50,000-150,000)																												
ON	Barrie	Barrie Transit	124,200	74.00	21	19	40	95.00%	95.00%	5.80	$2.50	2,572,061	2,572,061	140,128	140,128	3,249,698	$10,552,136	$4,800,756	$4,991,230	47%	$38.94	$2.16	$1.87	$4.10	$75.30	20.71	18.36	1.13
ON	Brantford	Brantford Transit	92,319	75.07	14	7	30	83.33%	83.33%	5.87	$2.15	1,363,809	1,363,809	66,000	66,000	1,531,536	$6,640,387	$2,325,049	$2,346,099	35%		$3.15	$1.70	$4.87	$586.46	14.77	120.45	0.12
NS	Cape Breton	Transit Cape Breton	69,000	200.00	10		18	72.22%	72.22%	7.50	$1.25	334,467	334,467	27,040	27,040	638,663	$2,070,084	$588,801	$625,973	30%	$20.93	$4.32	$1.76	$6.19	$76.56	4.85	12.37	0.39
NB	Fredericton	Fredericton Transit	50,000	132.00	8		28	42.86%	42.86%	8.21	$1.75	1,208,637	1,208,637				$2,890,444	$1,468,000	$1,726,000	60%	$23.29	$0.96	$1.21	$2.39		24.17		
AB	Grande Prairie	GP Transit (Grande Prairie)	50,227	62.30	5	4	16	56.25%	56.25%	13.50	$2.00	576,852	576,852	34,800	34,800		$2,774,943	$710,126	$758,402	27%	$39.82	$3.50	$1.23	$4.81	$79.74	11.48	16.58	0.69
ON	Guelph	Guelph Transit	120,000	88.00	21	16	68	67.65%	67.65%	8.94	$2.25	5,374,655	5,933,616	224,284	251,153	4,301,730	$17,772,626	$6,771,296	$6,969,180	39%	$73.05	$2.01	$1.26	$3.31	$70.76	44.79	23.96	1.87
BC	Kelowna	Kelowna Regional Transit	120,700		22	22					$2.00	4,182,090	4,773,581	169,242	169,242	4,793,929	$15,631,812	$4,708,735	$4,804,735	31%	$36.21	$2.59	$1.13	$3.74	$92.36	34.65	24.71	1.40
ON	Kingston	Kingston Transit	110,000	131.70	15	6	48	75.00%	75.00%	8.71	$2.25	3,379,625	3,379,625	151,790	157,306	3,075,480	$11,600,769	$4,870,228	$5,004,597	43%	$55.37	$1.95	$1.44	$3.43	$73.75	30.72	22.27	1.38
AB	Lethbridge	LA Transit (Lethbridge)	85,492	124.30	26	26	41	78.05%	78.05%	8.20	$2.25	2,309,852	2,309,852	102,324	103,114	2,251,128	$8,002,950	$2,172,238	$2,547,423	32%	$63.25	$2.36	$0.94	$3.46	$77.61	27.02	22.57	1.20
NB	Moncton	Codiac Transit (Moncton)	120,525	229.10	26		33	0.00%	0.00%	10.15	$2.00	1,910,743	1,910,743	88,774	88,774	1,680,181	$6,493,385	$2,227,269	$2,385,441	37%	$40.24	$2.15	$1.17	$3.40	$73.15	15.85	21.52	0.74
ON	Niagara Falls	Niagara Transit	80,000	80.91	14	1	23	26.09%	26.09%	10.13	$2.25	1,328,991	1,328,991			1,554,873	$6,132,853	$1,776,225	$2,265,047	37%		$2.91	$1.34	$4.61		16.61		
ON	Peterborough	Peterborough Transit	80,000	62.50	17		49	61.22%	61.22%	9.98	$2.00	2,781,610	2,963,647	110,626	110,626	1,958,953	$10,154,711	$3,753,102	$3,810,110	38%		$2.28	$1.35	$3.65	$91.79	34.77	25.14	1.38
AB	Red Deer	Red Deer Transit	87,816	71.00	29	10	55	52.73%	52.73%	13.98	$2.15	3,734,613	3,765,705	135,770	145,743	2,724,950	$10,445,959	$3,523,727	$3,651,441	35%	$76.36	$1.82	$0.94	$2.80	$71.67	42.53	27.51	1.55
NB	Saint John	Saint John Transit	122,389	316.00	21	9	59	44.07%	44.07%	10.42	$2.25	2,673,425	2,673,425	94,643	94,643	2,063,905	$8,657,788	$4,091,826	$4,510,062	52%	$33.74	$1.55	$1.53	$3.24	$91.48	21.84	28.25	0.77
ON	Sarnia	Sarnia Transit	71,419	167.25	13		23	73.91%	73.91%	12.65	$2.00	1,004,897	1,150,187			1,319,195	$4,379,315	$1,202,970	$1,339,695	31%	$36.13	$3.02	$1.20	$4.36		14.07		
ON	Sault Ste Marie	Sault Ste Marie Transit	69,900	223.45	11	11	29	68.97%	68.97%	13.86	$2.00	1,830,535	2,106,457	81,951	83,658	1,785,770	$7,760,363	$2,160,866	$2,258,217	29%	$63.51	$3.01	$1.18	$4.24	$92.76	26.19	22.34	1.17
QC	Sherbrooke	STS (Sherbrooke)	145,475		34	34	84	57.14%	57.14%	9.54	$3.10	7,597,413		219,150	479,794	4,832,343	$18,671,211	$7,732,368	$7,922,838	42%	$58.09	$1.41	$1.02	$2.46	$38.92	52.22	34.67	1.51
AB	St. Albert	StAT (St. Albert)	58,501	49.36	23		52	88.46%	88.46%	6.54	$2.50	1,224,328	1,224,328	81,542	88,000	2,029,510	$7,718,716	$2,710,992	$2,853,439	37%	$89.29	$3.97	$2.21	$6.30	$87.71	20.93	15.01	1.39
ON	St. Catharines	St. Catharines Transit	150,000	179.11	20	16	63	80.95%	80.95%	5.52	$2.50	5,144,087	5,144,087	148,159	153,035	3,432,224	$13,643,371	$6,941,560	$7,179,873	53%	$39.20	$1.26	$1.35	$2.65	$89.15	34.29	34.72	0.99
NL	St. John's	Metrobus (St. John's Transportation Commission)	127,097	105.00	19		53	33.96%	33.96%	14.13	$2.25	3,156,853		126,486	131,746	2,536,877	$12,985,423	$5,130,634	$5,324,800	41%	$56.31	$2.43	$1.63	$4.11	$98.56	24.84	24.96	1.00
AB	Strathcona	Strathcona County Transit	59,409	1,243.00	43						$2.65	2,273,431	2,319,827	98,230	113,150	2,934,691	$10,609,647	$3,264,151	$3,341,569	31%	$122.34	$3.20	$1.44	$4.67	$93.77	38.27	23.14	1.65
ON	Sudbury	Greater Sudbury Transit	129,600	3,627.00	43	24	59	71.19%	71.19%	8.41	$2.35	4,509,678	4,509,678	161,292	162,227	3,951,103	$16,375,720	$6,657,824	$6,818,543	42%	$67.56	$2.12	$1.48	$3.63	$100.94	34.80	27.96	1.24
ON	Thunder Bay	Thunder Bay Transit	109,000	256.00	14	14	49	100.00%	100.00%	6.61	$2.35	3,410,297	3,410,297	160,349	161,244	3,168,971	$13,477,731	$4,539,378	$4,621,450	34%	$75.22	$2.60	$1.33	$3.95	$83.59	31.29	21.27	1.47
AB	Wood Buffalo	Fort McMurray Transit (Wood Buffalo)	89,167	68,454.00	12	12	31	35.48%	35.48%	15.97	$1.25	980,332	980,332	94,000	94,000	801,359	$10,792,476	$980,332	$998,867	9%	$110.26	$9.99	$1.00	$11.01	$114.81	10.99	10.43	1.05
		Summary	96,760	3,452	20	14	43	62%	62%	9.76	$ 2.17	2,702,637	2,542,737	119,837	135,973	2,573,503	$ 9,843,118	$ 3,546,186	$ 3,710,626	37%	$ 58.05	$ 2.78	$ 1.36	$ 3.64	$107.66	27.93	22.55	1.15

APPENDIX G
Off-Street Terminal Design Concepts

Source: Guelph Transit Growth Strategy and Plan, Ministry of Transportation Ontario

WYNDHAM

MacDONNELL STREET

WYNDHAM STREET

RELOCATE EXISTING PEDESTRIAN CROSSING EAST TO NEW INTERSECTION

NEW SIGNALIZED INTERSECTION WITH TRANSIT PRIORITY

RESTRICTED TO TRANSIT VEHICLES ONLY

RESERVED PARKING FOR TRANSIT

OVERFLOW PLATFORM/PUBLIC WASHROOM

HOTEL

29 SPACES

PROPOSED SIDEWALK WIDENING

DELIVERY AREA

CARDEN STREET

POTENTIAL SNOW STORAGE

TRACK SHIFT SOUTHERLY BY 2m

MOUNTABLE CURB

SIGNALIZED INTERSECTION WITH TRANSIT PRIORITY

TWO-WAY TRAFFIC

ONE-WAY TRAFFIC

INTER-CITY

PASSENGER DROP OFF

PROPOSED TOE WALL

TAXI PARKING

TRANSFORMERS TO BE RELOCATED

PROPOSED BIKE SHELTER

MONUMENT

VIA RAIL STATION

A

B

NEW SIDEWALK AND REMOVAL OF EXISTING PEDESTRIAN TUNNEL RAMP (FINAL TREATMENT TO BE RESOLVED)

PARKING

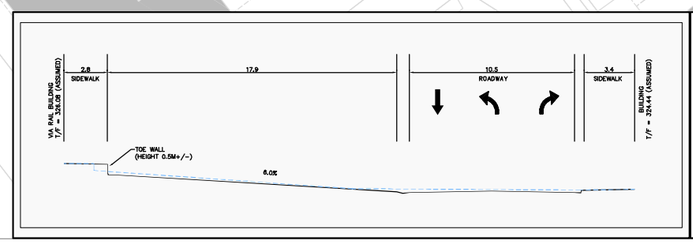
WALKER BUILDING

RELOCATED SOUTH TRACK

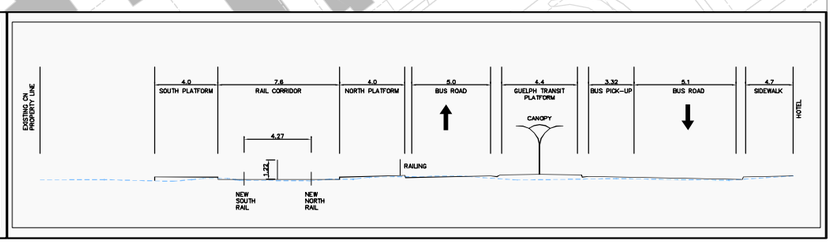
FARQUHAR STREET E.

NEEVE STREET

SECTION A-A'



SECTION B-B'



LEGEND

- GO PLATFORM
- BUILDINGS
- BUS PLATFORM
- PEDESTRIAN CROSSING
- EXISTING TRANSFORMER
- GUELPH TRANSIT BUS
- INTER-CITY BUS
- PARATRANSIT BUS
- RAILING
- DECORATIVE PAVING STONE
- TOE WALL
- CANOPY
- CURB
- CURB AND GUTTER
- POTENTIAL DRIVER WASHROOMS

0 5 50

25

Revisions		
No.	Description	Date
1	RE-ISSUED WITH SOUTH RAIL TRACK SHIFT	6/15/09
2	RE-ISSUED WITH GO PLATFORM SHIFT	6/23/09
3	GENERAL LAYOUT REVISIONS	6/29/09
4	GENERAL LAYOUT REVISIONS	11/03/09
5	*	*

City of Guelph
Inter-Regional Transportation Terminal
Concept Development

PRELIMINARY DESIGN CONCEPT NORTH SIDE

CITY OF Guelph Making a Difference

Project No:	09-1932	Designed By:	AMS
Project Manager:	PAM	Drawn By:	AMS
Location:	091932	Checked By:	PAM
File Name:	Proposed Rail Works	Date Issued:	11/5/09

DILLON CONSULTING

Figure No. 4

G:\CAD\091932 Guelph Transit\Proposed Rail Works_AMS_Oct 1,09.dwg Modified: November 5, 2009

T.8 Brantford - Brantford Transit Terminal

STATUS

Opened October 1988

PROPERTY

Property Size: 30.5 metres by 80.8 metres
Property Area: 0.246 hectares
Former Land Use: Municipal Parking Lot

PLATFORMS

Driving Area
Surface Material: Concrete
Pedestrian Platform
Surface Material: Concrete
Bus Bay Design: Centre island saw-toothed
Number of Bus Bays: 11
Number of Layover Bays: 1
Platform Covered: Canopy

BUILDING

Terminal Building: Yes
Building Area: 165 sq.m.
Climate Controlled: Yes

COSTS

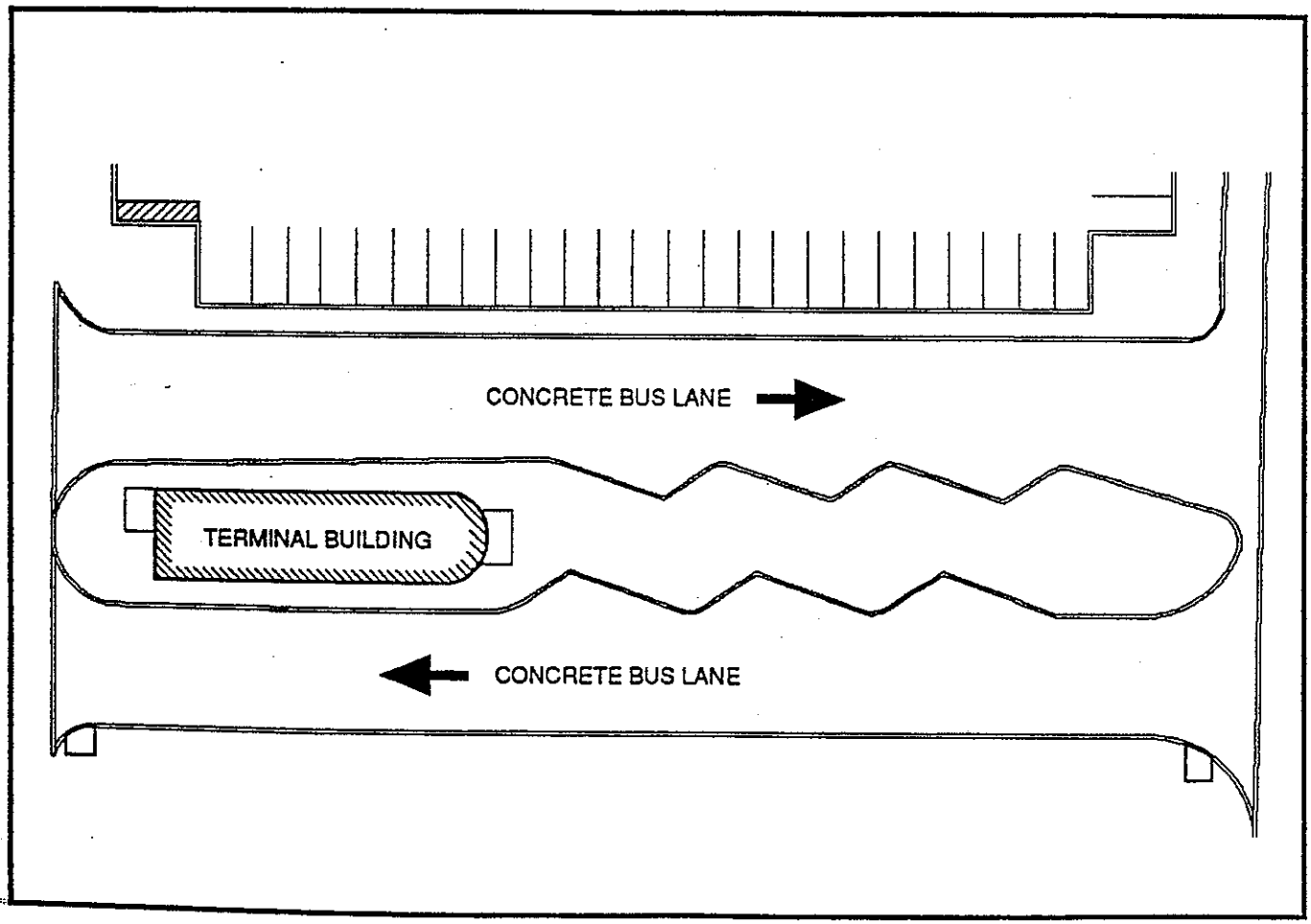
Property: $478,000
Construction: $900,000
Total: $1,378,000
Subsidy: $1,028,876

FACILITIES

- **BPX:** ?
- **Kiosk:** No
- **Restaurant:** No
- **Snack Bar:** Yes
- **Vending Machines:** No
- **Convenience Counter:** Yes
- **Telephones:** Yes
- **Video Games:** No
- **Public Washrooms:** Yes
- **Driver's Room:** Yes
- **Dispatch Room:** Yes
- **Clerk's Office:** Yes
- **Staff Washrooms:** Yes
- **Maintenance Room:** Yes
- **Advertisement Area:** Yes
- **Intercity Bus:** Yes

OTHER COMMENTS

- snack bar leased



T.4 Brampton - Bramalea City Centre Transit Terminal

STATUS

Opened June 1990

PROPERTY

Property Size: 230 metres by 37 metres
Property Area: 0.851 hectares
Former Land Use: Parking Lot

PLATFORMS

Driving Area
Surface Material: Asphalt
Pedestrian Platform
Surface Material: Brick
Bus Bay Design: Centre island saw-tooth with parallel bus bay
Number of Bus Bays: 14
Number of Layover Bays: 7
Platform Covered: Yes - two (2) shelters

BUILDING

Terminal Building: Yes
Building Area: 105 sq.m.
Climate Controlled: Yes

COSTS

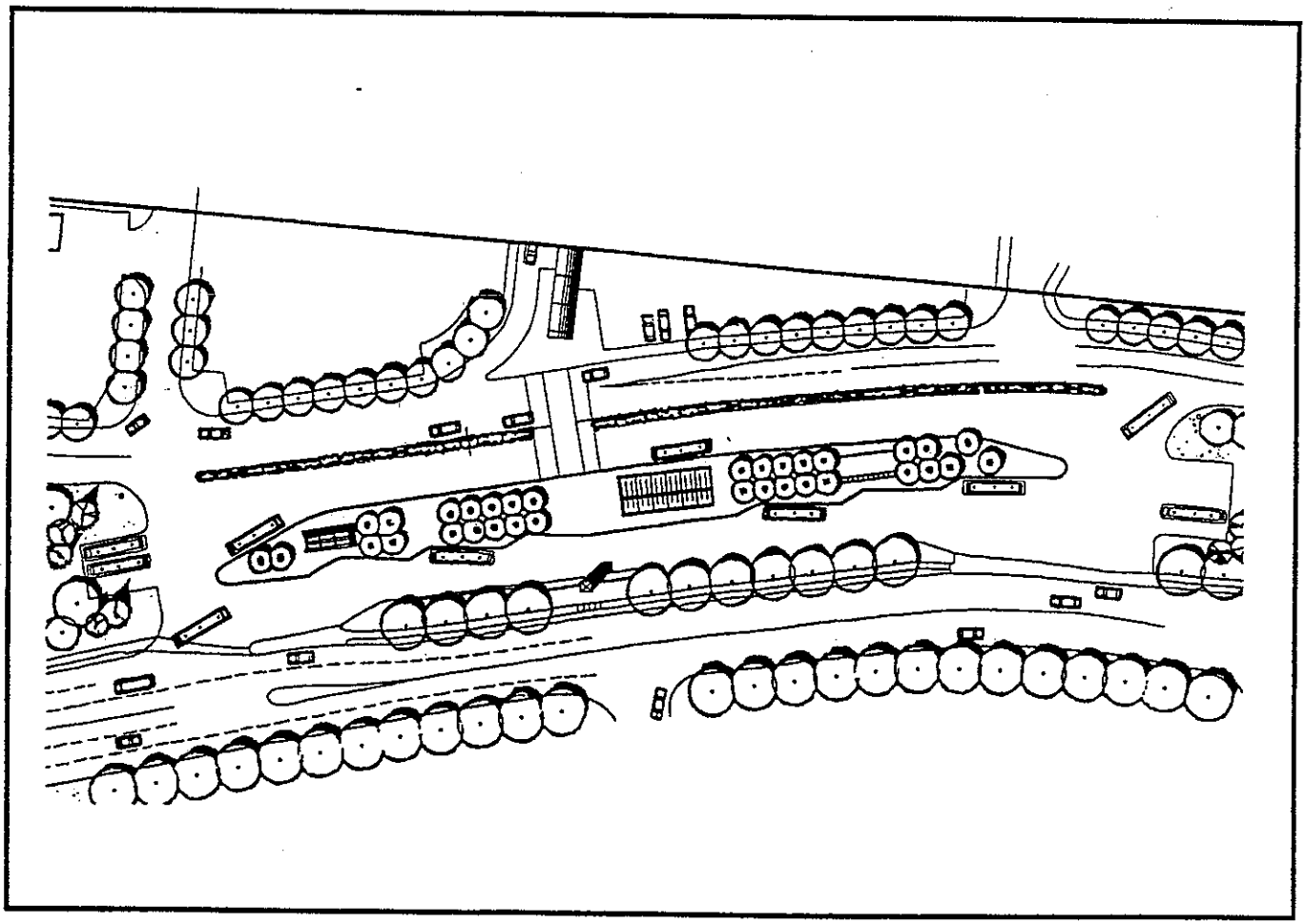
Property: N/A
Construction: N/A
Total: N/A
Subsidy: N/A

FACILITIES

- **BPX:** ?
- **Kiosk:** Yes
- **Restaurant:** No
- **Snack Bar:** No
- **Vending Machines:** Yes
- **Convenience Counter:** Yes
- **Telephones:** Yes
- **Video Games:** No
- **Public Washrooms:** Yes
- **Driver's Room:** Yes
- **Dispatch Room:** Yes
- **Clerk's Office:** Yes
- **Staff Washrooms:** Yes
- **Maintenance Room:** Yes
- **Advertisement Area:** No
- **Intercity Bus:** ?

OTHER COMMENTS

- Property cost is unknown



T.3 Thunder Bay - Water Street Transit Terminal

STATUS

Completed

PROPERTY

Property Size: 31.5 metres by 70 metres
Property Area: 0.221 hectares
Former Land Use: Mixed Retail and Parking

PLATFORMS

Driving Area
Surface Material: Asphalt
Pedestrian Platform
Surface Material: Brick
Bus Bay Design: Centre island saw-tooth
Number of Bus Bays: 10
Number of Layover Bays: 0
Platform Covered: No

BUILDING

Terminal Building: Yes
Building Area: 170 sq.m.
Climate Controlled: Yes

COSTS

Property:	$300,000
Construction:	$258,000
Total:	$558,000
Subsidy:	$418,500

FACILITIES

- **BPX:** ?
- **Kiosk:** Yes
- **Restaurant:** No
- **Snack Bar:** No
- **Vending Machines:** No
- **Convenience Counter:** No
- **Telephones:** Yes
- **Video Games:** No
- **Public Washrooms:** No
- **Driver's Room:** Yes
- **Dispatch Room:** No
- **Clerk's Office:** No
- **Staff Washrooms:** Yes
- **Maintenance Room:** Yes
- **Advertisement Area:** No
- **Intercity Bus:** ?

OTHER COMMENTS

- Property cost is an estimated
- Subsidy is an estimate