Dimensions of Corner Brook Transit (CBT): Understanding the Attitudes of Corner Brook Residents towards CBT

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Low ridership of Corner Brook Transit, particularly among seniors and students, deserves intervention by the City of Corner Brook and Murphy Brothers Limited. The input of residents is required in the examination of the transit system, and for the identification of action items with respect to a transit improvement strategy. This project contributes to research pertaining to transit in small cities, and focuses on CBT as a case study. Findings can be used to mitigate both social inequalities and harmful emissions within the transportation systems of small cities.

1.0 Introduction

"Transportation is arguably the backbone of urban life; without it, activities in cities grind to a halt" (Hanson & Giuliano, 2004). Modern cities have largely been designed to accommodate the car, leaving those without automobile access (often individuals who fall into lower income brackets) at a strong disadvantage (Bunting & Filion, 2000). In addition to contributing to social inequalities, the strong presence of the automobile in cities has contributed to street congestion, Green House Gas (GHG) emissions, a reliance on fossil fuels, and heath concerns (Kemp, 2003). The majority of research conducted on public transit pertains to large metropolitan areas, creating challenges for transportation planning in small cities (Ofori-Amoah, 2006). To assist with a transit improvement strategy for Corner Brook, voluntary surveys completed by Corner Brook residents were used to determine public attitudes towards CBT. In addition to gathering information regarding the current transit system, the surveys provide insight into areas requiring improvement from the perspective of users and non users of the system.

Corner Brook, located in the Appalachian Mountains, is often referred to as a 'winter city'. One could assume that these factors might increase transit use within the area, however ridership remains low. The need to inspect Corner Book's current transit system is supported by the City's Transit Improvement Plan which focuses on the establishment of goals, strategies and recommendations to improve the mobility of individuals in Corner Brook (Hatch-Mott MacDonald, 2008).

The recognized 'room for improvement' within Corner Brook Transit (CBT) merits consideration of alternative transit strategies including routes, hours of operation, infrastructure and promotional materials. This report includes findings of both the field investigation, conducted to determine the current use of CBT, as well as a literature review completed to examine transportation norms in various parts of Canada and the impact of privately owned vehicles on the environment.

The results of this study will provide recommendations for possible improvements to Corner Brook's current transportation system as seen by the public and by the author. Since 1998, Murphy Brothers Limited has held the contract for CBT, operating six bus routes, five

days a week. The recommendations outlined herein will be provided to the City of Corner Brook and to Murphy Brothers Limited as a potential input to a plan for increasing ridership in the city.

2.0 Methodology

2.1 Literature Review

An extensive literature review was completed to examine public transportation conventions, focusing on those in various parts of Canada. The literature review also examined the impact of transportation on human health and safety and climate change. A variety of articles, journals, text books, statistics, websites and previous reports were consulted for this study. Data and reports were obtained from both private and public sources (e.g., Government at the federal, provincial and municipal levels, researchers, contracts, and media) so as to avoid bias. Key words/phrases used for searching electronic databases include the following: transportation/public transportation in small city's, challenges of transportation, and urban transportation.

2.2 Public Survey

Voluntary surveys were completed by Corner Brook residents to assist in determining public attitudes towards CBT.

2.21 Participants

A random sample of 99 Corner Brook residents, with phone numbers listed in the *Western Newfoundland Telephone Directory 2008-2009,* was conducted between November 12th and December 13th, 2008. Letters A-Z were placed in a jar, and three letters were selected at random. Letters selected were *H, N, and Z.* Three were selected to ensure that there would be enough numbers in the data base to obtain the desired sample size of 100. All Corner Brook numbers listed under the last names beginning with H, N, and Z were input into an Excel spreadsheet. A random sample formula was input into the spreadsheet, which randomly arranged the phone numbers. The formula was *=RAND().* Surveys were conducted on the following dates: November 12th, November 15th, December 7th, December 8th, December 10th, December 11th, December 12th and December 13th, 2008.

2.22 Materials

A twenty-five question survey titled *Corner Brook Transit System* was designed for the purpose of this study. The survey consisted of multiple choice and open-ended questions pertaining to demographics, previous experience with CBT, attitudes towards CBT, and reasons for or for not using the bus system. There was one non-compulsory question in the survey which pertained to annual income. Other materials used for the study included a copy of the *Western Newfoundland Telephone Directory 2008-2009*, a telephone and Microsoft Excel.

2.23 Procedure

As a means to avoid bias, surveys were administered in a random manner. Homes were only called once, and if there was no response they were not included in the response rate. Residents who agreed to conduct the survey were given a brief project overview, providing

information on the researcher as well as the nature and length of the survey.

2.24 Research Shortcomings

Anomalies may have arisen during data collection process. Using the telephone directory to generate the sample population could have excluded a large student population, as many reside in 'on-campus' dwellings, or are not equipped with a landline. Additionally, in the case of participants residing outside of the Corner Brook municipality, error could also be present as their residence would be outside a CBT serviced area.

3.0 Literature Review

Urban planners have understood accessibility as a key component to *quality of life*. The spatial arrangement of present-day cities both demands and assumes mobility, something only available with the presence of a suitable transit system (Hanson & Giuliano, 2004). The necessity for transport, coupled with the convenience of the automobile, is in part responsible for the current dependence on household or family vehicles hereafter referred to as privately-owned vehicles (POVs). These outcomes are mostly associated with large metropolitan areas. Although widely studied, transportation planning rarely includes small cities. Emphasis, in Canada rather, has been placed on alternative transportation systems in large metropolitan areas such as Edmonton, Vancouver and Toronto.

3.1 Climate Change and Green House Gas

The release of satellite images of the earth and of iconic publications such as Rachel Carson's *Silent Spring* has brought environmental issues to the forefront (Vigar, 2002). Existing media, government, NGOs and concerned citizens will not allow the state of the natural environment to go unnoticed. Green House Gases (GHGs), in moderation, are required to maintain habitable earth temperatures. The key, however, is moderation. Upward trends in fuel consumption are leading to an unhealthy accumulation of anthropogenic GHGs presenting the current global challenge of climate change. The consequences of climate change include stress on our water and agricultural resources, food security, ecosystems, living conditions, and human health (Roseland, 1998). Automobiles are directly and indirectly responsible for personal injury, death, and health concerns including asthma, lung disease, and heart disease (WHO, 2009). Pollutants affecting human health include nitrogen dioxide, carbon monoxide, particulate matter, benzene, polycyclic aromatic hydrocarbons (PAHs), and metals (Krzyzanowski, 2005). The release of carbon dioxide (CO_2) emissions, in both production as plant emissions and throughout a vehicle's life as exhaust, are also large contributors to global climate change (Bunting & Filion, 2000). Automobiles are also responsible for the consumption of large quantities of land due to production plants and increased road development.

The International Panel on Climate Change (IPCC) predicts that by the year 2100, average atmospheric temperatures will have increased by 1.4-5.8°C (IPCC, 2007). Such rapid changes in temperature have no precedent in Earth's history (Institute for Transport Policy *et al.*, 2004). Unless consumption is reduced, the present levels of GHGs are predicted to, at a minimum, double over the next 100 years. Reducing our reliance on GHG-producing fossil fuels is integral to promoting sustainable development, as conceived by the Brundtland Commission

(Naess, 2006).

3.2 Transportations and Climate Change

In 2001, twenty-four billion tonnes of CO_2 emissions were released, of which the transportation industry can be held responsible for 30 percent (Banister, 2005). The public's current fixation with personal automobiles is unsustainable. The excessive demand for POVs requires significant changes in both lifestyle and behaviour in order to reduce the impacts of emissions (Institute for Transport Policy *et al.,* 2004).

Climate change is a global issue with long term environmental consequences. It can be viewed as a tragedy of the commons, making solutions complex (Institute for Transport Policy *et al.,* 2004). POVs are one of the most GHG intensive means of transportation per passenger kilometre (a passenger kilometre is calculated by the distance a vehicle travels times the number of passengers travelling that distance). Increased vehicle ownership results in decreased ridership for public transit, which in turn results in decreased routes and/or frequency of transit buses (Institute for Transport Policy *et al,* 2004).

In addition to releasing harmful emissions, unsustainable transportation modes such as POVs contribute to increased congestion and commuting times (Roseland, 1998). Vehicle purchases are a major investment; yet, because the majority of costs are paid upfront, owners have a tendency to use their vehicles more often for the perceived reason that individual trips are without high associated cost. Furthermore, the majority of trips travelled seldom require full-sized cars which incur these often ignored costs (Institute for Transport Policy *et al.,* 2004).

Despite China and India being the most populous countries, with 1.33 and 1.14 billion inhabitants respectively, the United States is leading the world in CO_2 emissions (The U.S. Census Bureau, 2008). The U.S. emits, on average, 20.40 tonnes of CO_2 per capita, with Canada closely following at 18.50 tonnes per capita. There is stark contrast between these figures and those of China and India at 3.84 and 1.20 tonnes per capita respectively (United Nations Statistics Division, 2007). The per capita difference in CO_2 emissions is in part explained by vehicle ownership, primarily accessible to individuals in the industrialized world. At present, approximately 70 percent of all POVs are found in member countries of the OECD (Banister, 2005). "This high level of correlation indicates that a key part of any strategy to reduce the increase in carbon emissions from transport should be to slow growth in vehicle ownership and use" (Institute for Transport Policy *et al.,* 2004).

3.3 The Role of Transportation

Transportation is the foundation of urban life, providing access between activity sites such as the home, workplace, educational institutions and recreational activities. It provides access to a range of events which make up daily life. Subsequently, and as touched on above, transportation also leads to congestion, pollution and inequality, as well as a reliance on fossil fuels (Hanson & Giuliano, 2004).

3.31 The Car

The car has become an icon of the 20th century, providing a freedom and flexibility previously unforeseen (Banister, 2005). Henry Ford began the transition into an automobile-oriented world by using the assembly line for the mass production of cars, starting with the

Model T in 1908. The Model T was seen as a design suitable for the mass market and was coined by Ford as 'the car of great multitude'. Between 1909 and 1916, Ford was able to reduce the purchase price of a car from $950 to $360, a price range suitable for many Americans. From the 1920s onward, vehicle production and consumption continued to grow, and so began an automobile dependency and a reliance on unsustainable transportation (Moline, 1971; Bunting & Filion, 2000). Trends toward increased motorisation have brought about a revolutionary change in people's lifestyles, which in turn has accelerated oil consumption and GHG-emissions. The early convenience of POV transportation was highly appreciated; however, it contributed to societal divisions seen today. The success of the automobile from the mid-twentieth century onward was so prominent that even countries lacking petroleum resources eventually transformed their economic structure to one reliant on petroleum (Institute for Transport Policy *et al.,* 2004).

"Over the past 50 years urban planning has given priority to accommodating the car" (Bunting & Filion, 2000). This has resulted in low urban densities partnered with high land-use segregation. With approximately a hundred thousand cars entering the world's roads each day, the term 'automobile dependency' was coined to describe our current fixation. Newman and Kenworthy, responsibles for the term, propose that as opposed to striving towards a complete elimination of cars, emphasis should be placed rather on breaking the current dependence on the automobile (Bunting & Filion, 2000). This dependence can be seen with the high costs vehicle owners are willing to pay for a POV.

It is estimated that Canadian vehicle owners spend approximately $7,000 each year for car payments, repair, gas and insurance. This is a large incurred cost for the average 20,000 kilometres travelled each year, which requires approximately 980 driving hours (Bunting & Filion, 2000). Transportation trends are negatively impacting the planet, with approximately 80 percent of all passenger kilometres travelled via automobile. Canada is second only to the US in vehicle ownership per capita (Williams, 2005).

3.32 Public Transportation

Cities contain both activity and transportation systems. Activity systems consist of the spatial distribution of land-use and the location of people. Transportation systems, on the other hand, are comprised of the network and physical infrastructure. The two systems are interconnected, as all 'out of home' activities require some form of transportation. The location and length of these activities influence travel methods - the larger the distance between activity sites, the higher the dependence on a POV (Bunting & Filion, 2000).

In urban areas, buses can serve as a link between activity sites, and are refereed to as the "workhorses of the transit world" (Grava, 2002). In 2006, 107 transit systems reported to the Canadian Urban Transit Association (CUTA). The respective transit systems provided service to 2,557,588,441 passenger boarding's, 1,706,329,195 of which were classified as regular services passengers. It is important to note that information is submitted to CUTA on a voluntary basis; therefore, the above figures are not necessarily a complete representation of Canadian transit systems (CUTA, 2008).

Buses provide the most basic form of public transportation and are able to carry large passenger loads for relatively low prices (Grava, 2002). The average adult fare for public bus service is $2.10 for a 'pay as you go' fare and $58.98 for a monthly pass. If an individual were

to use bus service as opposed to a POV, they could see savings of over 90 percent in comparison to the annual cost of owning a personal vehicle (CUTA, 2008). In addition to the savings incurred by individuals choosing bus service over POVs, bus services are also inexpensive to run as they require little advanced technology, engineering, or skill sets. Bus networks tend to be simple and normally employ the option of running a straightforward route system.

Buses have the option of upgrading to what is called rapid transit, where they have an exclusive right of way in certain lanes, or in some cases are automatically guided. Guided buses are those which have their own lane or guideway. These buses, however, make the systems more complex and are desirable only in congested areas where demand is high. The buses are retrofitted with special tires for the guideways so when drivers are in the respective lanes the steering is automatically controlled, leaving the bus driver responsible only for accelerating and breaking. Guided bus technology has not been adopted in Canada; however, it is currently used in the UK, with Cambridge, England leading in its use (Cambridge City Council, 2009).

Buses can also be upgraded to accommodate bicycles, or converted to use bio-fuels. Unlike trains or subways, buses have the further advantage of being able to easily change and experiment with routes as they are not attached to a particular track (Grava, 2002).

When making decisions regarding transportation methods, the cost of time versus money are often weighted, as well as time and money versus perceived benefits of being in a particular location. Travel behaviour is also affected by demography including gender, ease of use (e.g., wheel-chair accessible), income, age, professional status and values. There are three main types of constraints which determine an individual's ability to access transit. Capability constraints pertain to the limited ability to complete specific tasks with particular transportation methods, primarily due to time restrictions. Coupling constraints are the need to complete a particular task with other individuals in specific locations. Authority constraints pertain to the restrictions of access to an activity, often caused by hours of operation (Naess, 2006).

Travel patterns seen in the majority of industrialized countries are becoming progressively dependant on POVs, leading to a rise in ownership (Banister, 2005). This is made evident by statistics showing increased automobile ownership in the US, who also have the lowest transit-user rates in the world (Banister, 2005). Transportation systems directly affect both residents and economic activities on a daily basis. Everyone wants to travel wherever they want, whenever they want, with minimal delay and cost. This presents a challenge as travel times are often dependant on the particular area, time of day and roadway congestion. The challenge and objective of transportation planners and decision makers is to provide a mix in transportation services, while maximizing the mobility of individuals (Bunting & Filion, 2000).

3.33 Transit in Large Cities

"It is almost routinely assumed by planners that transit represents a significant part of the solution with respect to increasing urban transportation sustainability" (Bunting & Filion, 2000). Toronto and Montréal, for example, are both home to extensive multi-modal transit systems which serve as a popular alternative to POVs. Victoria and Halifax on the other hand, regarded as smaller cities, have walk and bicycle modes (in addition to transit) which serve as viable alternatives to POVs (Bunting & Filion, 2000).

In travel demand analyses, key travel purposes are stated as work, school, shopping, personal business, and social and recreational activities. Of those mentioned, work and school

are of utmost importance, and due to their relatively set schedules, it is common for travel to peak in the morning and afternoon. Transportation planners often use computer-based models to examine demand and performance, as well as the environmental and social impacts of alternative transportation systems or policies. These models, however, require extensive training and are costly to use (Bunting & Filion, 2000).

By and large, the frequency of transit use is determined by the relative ease of travel. For sustainable transportation systems to be accepted by consumers, government, and the private sector, they must minimize cost, promote economic development, minimize environmental and health impacts, minimize oil imports, maximize safety and be fully accessibly to individuals within a community (Reprogle, 1995).

In addition to enabling people to travel easily at minimal cost, public transit has many known benefits (Hanson & Giuliano, 2004). It assists with the reduction of death and injury from car accidents, reduces harmful emissions on a passenger per kilometre rate, is beneficial to health due to improved air quality, and has also been successful in revitalizing downtown areas (Kemp, 2003). Buses, however, are by no means a panacea to urban transportation problems or climate change. The majority continue to use diesel combustion engines which contribute to air pollution. Additionally, as long as they continue to operate in mixed traffic, a perk to bus transit, they will continue to contribute to street congestion (Grava, 2005).

3.34 Transit in Small Cities

Transportation has become a fundamental component of individual livelihoods. Activities are distributed throughout cities, and rural areas alike, requiring the movement of residents to access sites (Bunting & Filion, 2006). The main push for improved public transportation in urban areas is to alleviate problems of congestion as seen in large cities. Congestion, however, is not of concern in small cities, and consequently "...problems of urban transportation are seen as pertaining to only large metropolitan areas, while small cities receive less attention" (Ofori-Amoah, 2006).

Small cities in transit planning more commonly refer to cities such as Halifax with a population of approximately 370,000. Corner Brook has an approximated population of 20,000, significantly lower than 'small city's' such as Halifax. The majority of research, and funding available for public transportation forgets the challenges faced by city's with small dwelling counts (Bunting & Filion, 2000 ; Statistics Canada, 2008c).

Although small cities may not suffer from congestion, such areas remain home to a population of residents without access, ability or desire to use a vehicle. Furthermore, the small city is a contributor to global climate change as well as atmospheric pollution, and needs to take responsibility for its environmental impacts (Ofori-Amoah, 2006).

The future of public transit in small cities is largely dependent upon the level of political support for the expenditure of tax funds to operate the service. The majority of federal transit support is used for capital expenditures, equipment, and facilities which are distributed to metropolitan areas. For such reasons, the service can continue in small cities, so long as there is the political will to continue to make up for the shortfall in passenger revenue with tax funds (Ofori-Amoah, 2006).

Research shows that cities with low population densities are strongly dependant on private automobile transport (Williams, 2005). This creates a positive feedback loop of

increased POV use, as individuals who are dependant or feel dependant on a car often hold positive attitudes towards them (Naess, 2006). According to Grava (2002), any urban area with a population density over 2,200 people per km^2 should have a quality bus service in place with a good network of routes. He also suggests, however, that areas with a population density of less than 2,200 people per km^2 should have a basic bus service in place (Grava, 2002).

Small cities and towns vary with their approaches to public transportation. New Glasgow, Nova Scotia, has a population of 20,876 (Statistics Canada, 2008). The municipality is not equipped with a public transportation system; however, it does provide specialized services for individuals with disabilities. This service is provided though the Central Highlands Association for the Disabled (Town of New Glasgow, 2008). Sydney, Cape Breton, is home to 33,012 residents. Sydney has a fully accessible municipal transit system which operates six days a week (Monday-Saturday), from 7:00 a.m. – 10:00 p.m., with the exception of specified routes. The transit system operates routes both within and outside of the city. Bus rates vary according to destinations; however, the range for adults is between $1.25 and $5.00 (CBRM, 2008). Kings County located in Nova Scotia, is home to Kings Transit. Kings Transit is jointly funded by the towns of Berwick, Kentville, and Wolfville which have a total population of under 20,000 (Statistics Canada, 2008a). The system operates seven days a week, operating routes between towns in Kings County as well as routes within the towns of Kentville, Berwick and Wolfville (Kings Transit, 2008).

Corner Brook is the largest urban centre in western Newfoundland. Corner Brook Transit (CBT), the city's public transit system, has undergone a variety of transformations over the past 35 years. The history of CBT dates back to the early 1970's with a jitney service. Jitneys operated analogously to a taxi service, with the exception that they transported multiple clients at a time (Wyatt, 2006). In the early 1980's, the City of Corner Brook adopted a much more extensive transit system, equipped with six full-sized Metro buses leased from the City of St. John's. The service operated from 7:00 a.m. - 7:00 p.m., Monday through Friday (Parsons, 1998). The transit system was subsidized by the city at approximately $500,000 per annum. The high subsidy partnered with aging buses facilitated the City's decision in 1996 to look at the potential of contracting-out the bus service. In 1998, the City awarded a tender for contracting CBT in the amount of $198, 651.00 to Murphy Brothers Limited (Parsons, 1998).

Corner Brook has population density of 104.4 people per km^2, and in 2007 CBT provided 93,248 trips (Statistics Canada, 2008c; CBT, 2008). According to Grava, city's with population densities less than 2,200 people per km^2 should have a basic bus service in place, "...buses are employable as a form of transit in all urban situations, and remain the most affordable choice" (Grava, 2002).

Today, CBT operates five days a week; however, the hours of operation have changed. It consists of 6 routes operating on different schedules. Routes 1-4 operate Monday to Friday from 7:00 a.m. - 10:00 a.m. and 3:00 p.m. - 7:00 p.m. Routes 5 and 6 on the other hand operate Monday to Friday from 10:00 a.m. - 3:00 p.m. Route 1 travels from Birchy Cove Road to Petries Street/O'Connell, to Georgetown Road, and to the Murray Clinic. Route 2 travels from the Western Memorial Hospital, to the Wal-Mart store, to Hiscock Manor and lastly Brake's Cove. Route 3 travels from Vi's Confectionery to the Inter-Faith Home, to Pratt Street and lastly Sir Wilfred Grenfell College (SWGC). Route 4 travels from SWGC to the Inter-Faith Home to Corner Brook Plaza and lastly to Wal-Mart. Route 5 is a combination of Routes 1 and 4, while

Route 6 is a combination of Routes 2 and 3. During June, July and August the only routes in operation are 5 and 6 (Murphy Brothers Limited, 2008).

Corner Brook's mountainous geographical location and unpredictable climate create challenges for active transportation such as cycling, walking and skateboarding. Notwithstanding public transit conventions, ridership of CBT is dominated by adult passengers, while seniors and students are among the lowest users. Children have not been accounted for in ridership reports due to low levels of participation (CBT, 2008). The City of Corner Brook is currently in the process of evaluating mobility within the city which includes a transit improvement plan contracted to Hatch Mott MacDonald. The report examines the present transit system and addresses user purpose and frequency, as well as visions for an expansion to the city transportation system (Hatch Mott MacDonald, 2008).

4.0 Survey Results

This section contains results tabulated from the survey, a copy of which can be found in the Appendix.

Figure 1 indicates the age profile of participants. As outlined below, there were large discrepancies in age. Lower youth participation was expected as cell phone numbers were excluded from the study. It was presumed that a large portion of youth have cell phones.

Figure 1: Survey Demographics - Age

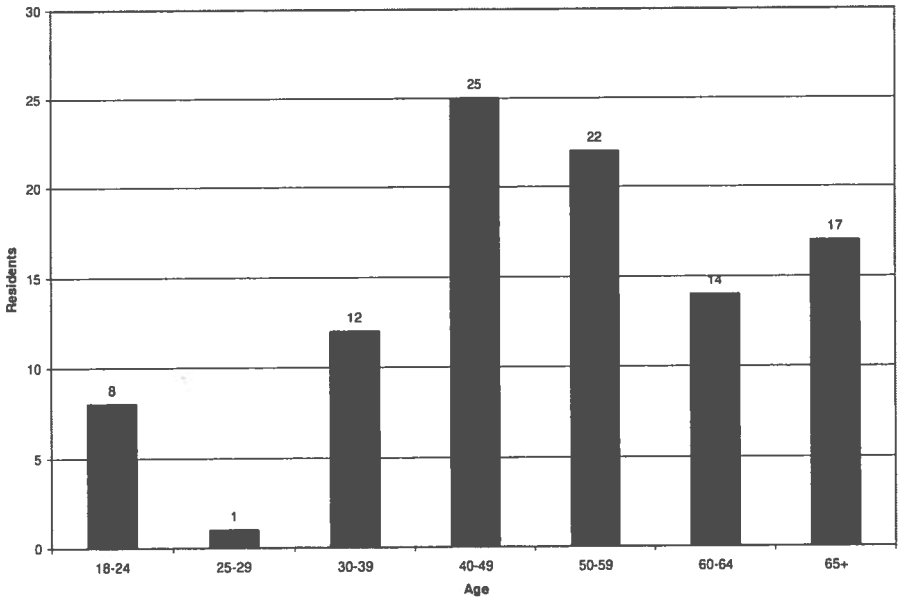

Figure 2 indicates occupational status of participants. Peaks in data show that a majority of 41 percent of participants were employed full-time, followed by 29 percent who were retired.

Figure 2: Survey Demographics - Occupation

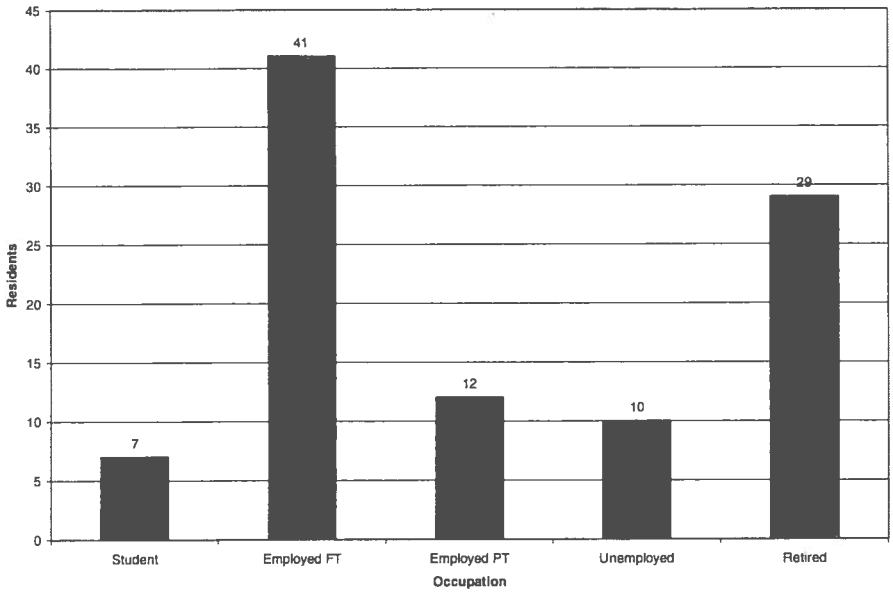

Figure 3 indicates annual income. This was the one and only non-compulsory question in the study, and consequently had a 44 percent refusal rate.

Figure 3: Survey Demographics-Annual Income

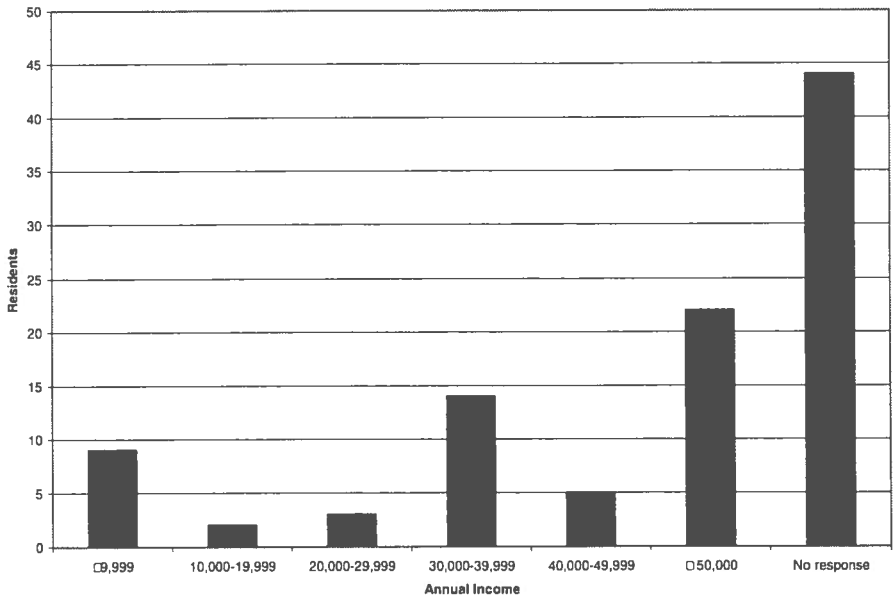

Figure 4 outlines the frequency of use by the CBT participants. The majority, at 59 percent, uses or has used CBT less that once per year. Less than once per year indicates that they are currently not active CBT users; however, in the past they could have been active riders in any of the categories listed above.

Figure 4: CBT-Frequency of Use

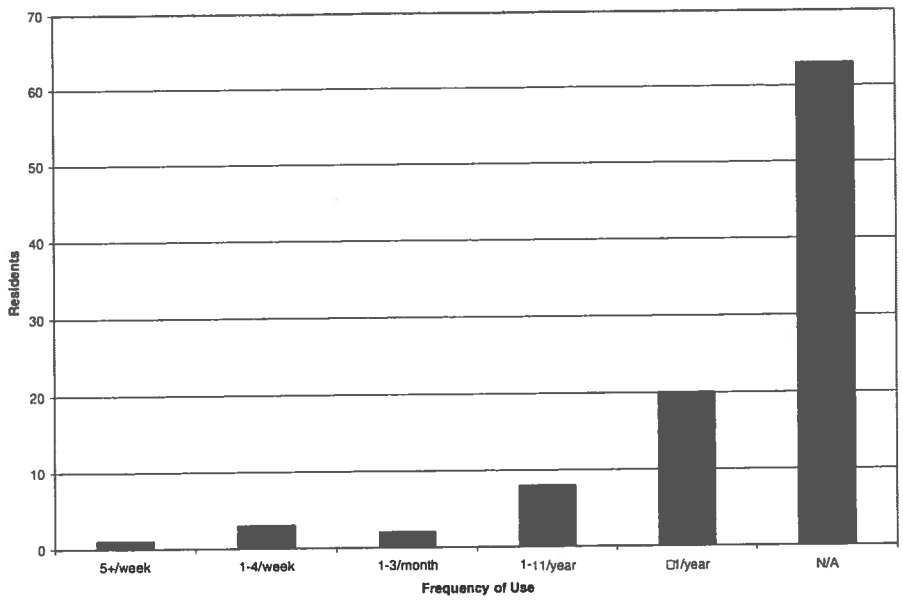

Figure 5 shows satisfaction of the bus schedule among participants who have used or use CBT. When responding to the statement "I am satisfied with Corner Brook Transit's Schedule", participants were asked if they *strongly disagree*, *disagree*, *neither agree nor disagree*, *agree*, or *strongly agree*.

Figure 5: Schedule Satisfaction

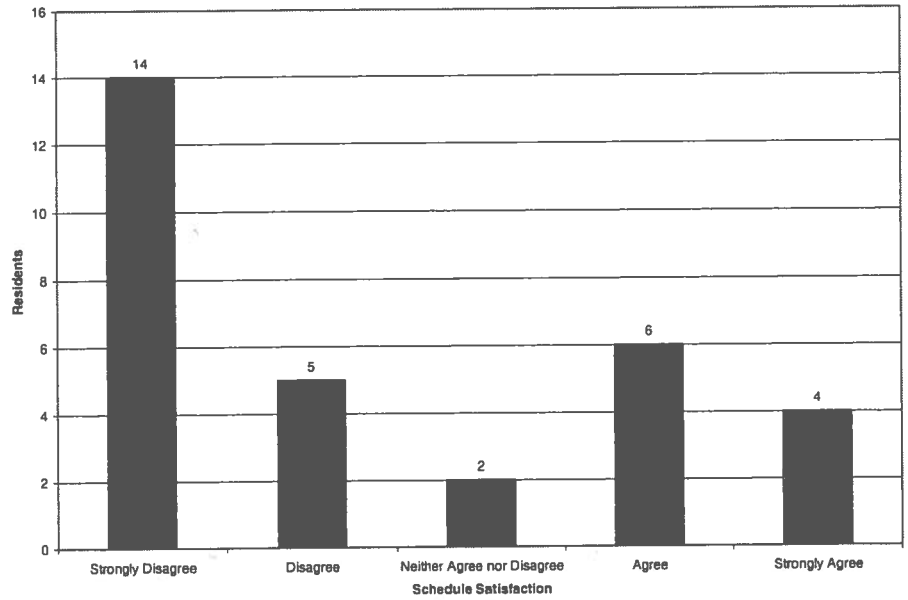

Figure 6 shows satisfaction of bus fares among participants who have used or use CBT. When responding to the statement "I am satisfied with Corner Brook Transit's bus fares", participants were

asked if they *strongly disagree*, *disagree, neither agree nor disagree, agree*, or *strongly agree.*

Figure 6: Fare Satisfaction

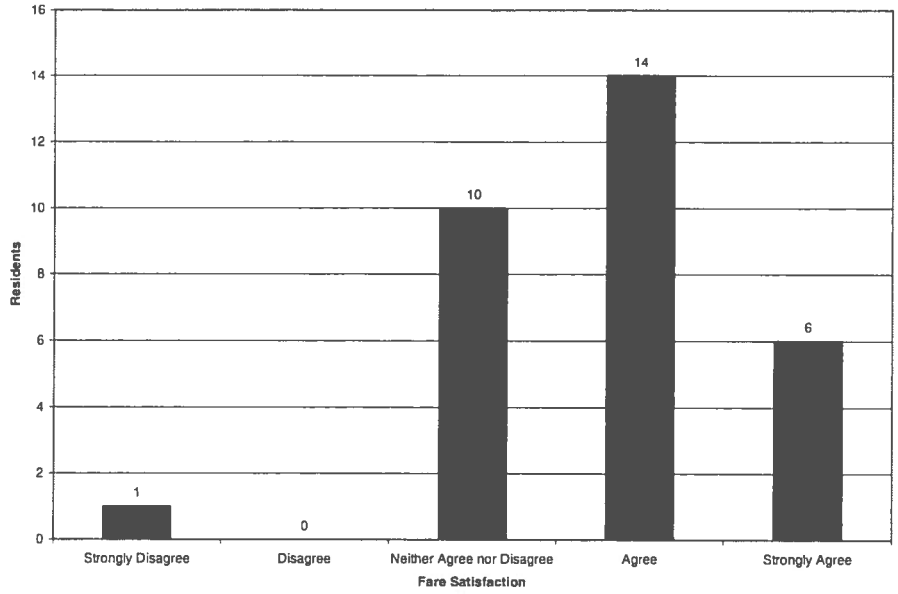

Figure 7 shows route satisfaction among participants who have used or use CBT. When responding to the system "I am satisfied with Corner Brook Transit Systems bus routes", participants were asked if they *strongly disagree*, *disagree, neither agree nor disagree, agree*, or *strongly agree.*

Figure 7: Route Satisfaction

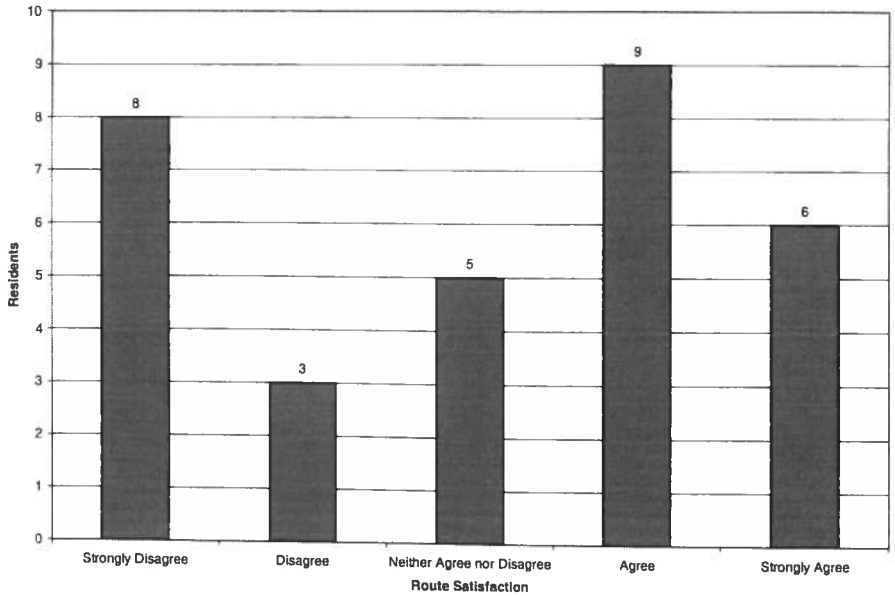

Figure 8 shows overall satisfaction of CBT among participants who have used or use the bus system. When responding to the statement "Overall, I am satisfied with Corner Brook Transit"

participants were asked if they *strongly disagree*, *disagree, neither agree nor disagree, agree*, or *strongly agree.*

Figure 8: Overall Satisfaction

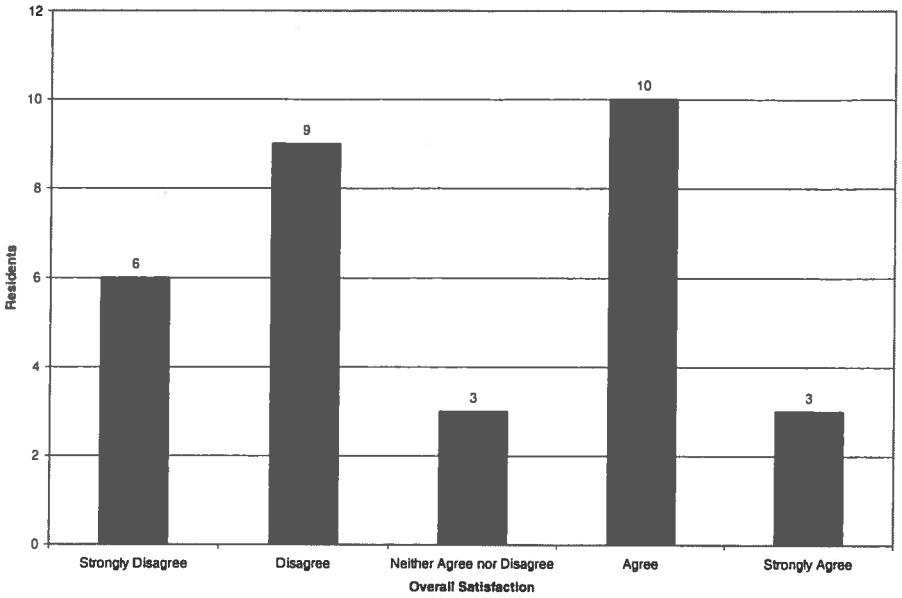

Figure 9 depicts answers to question 10: "If you are not a frequent user of CBT, what is your main reason for not using the system". All participants, excluding six who identified themselves as using CBT a minimum of once per month, responded to the question.

Figure 9: Reasons for not using CBT

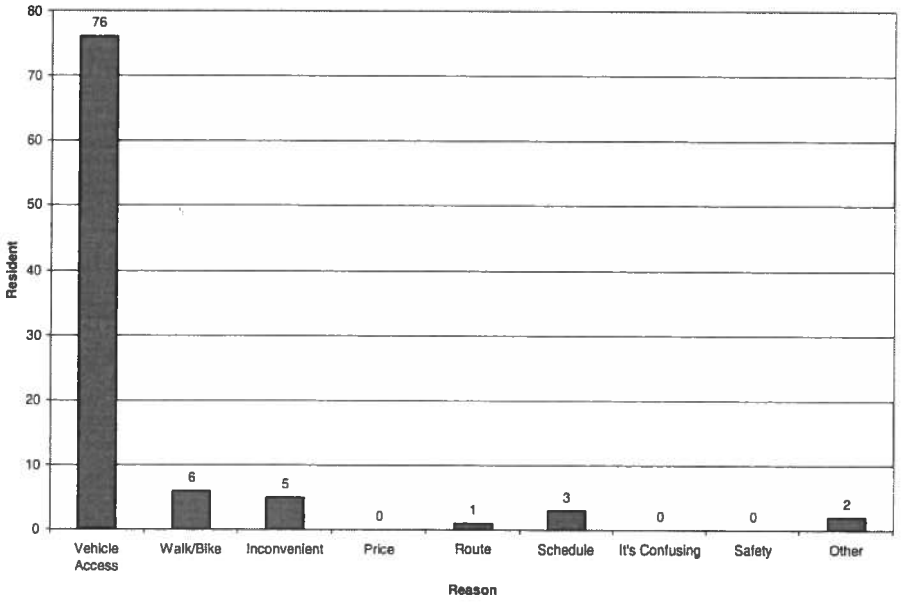

Table 1 provides the percent response rate of several *Yes/No* questions pertaining to demographic, cost, and quality.

Table 1: Additional Questions

Questions	Yes	No	Uncertain
Demographic			
Do you currently or have you ever used CBT?	34%	66%	NA
Do you own a vehicle?	85%	15%	NA
Do you have access to a vehicle (Pertaining to those not owning a vehicle)?	40%	60%	N/A
Costs			
If there were a change in fares would you be more inclined to use CBT?	5%	95%	N/A
If there were a change in routes would you be more inclined to use CBT?	31%	69%	N/A
If there were a change in schedule would you be more inclined to use CBT?	28%	72%	N/A
Quality			
Do you feel the bus stops are well identified?	63%	26%	11%
Do you feel the bus schedule is comprehensive?	22%	9%	69%

The thirty-one participants who responded *Yes* to the question 'If there was a change in schedule would you be more inclined to use CBT" were asked to state how they would like to see the schedule change. Table 2 shows their respective responses, please note that each participant was allowed to select up to three suggestions.

Table 2: Participant Recommendations to Change in Schedule

Question:	10am-3pm Week Days	7am-10pm Week Days	After 10pm Week Days	7am-7pm Weekends	7pm-10pm Weekends	After 10pm Weekends	Other
What would you like to see change in scheduling times?	5	19	4	23	18	9	4

The twenty-eight participants who responded *Yes* to the question "If there was a change in bus routes would you be more inclined to use CBT" were asked to state how they would like to see the bus routes change. Table 3 shows their respective responses.

Table 3: Participant Recommendations to Change in Routes

Question	More direct routes	To/from other locations	Other
What would you like to see change in bus routes?	10	16	2

4.1 Discussion

A total of 543 phone calls were made, of which 99 residents completed the survey, 195 refused to complete the survey, 218 residents did not answer the telephone, and the telephone numbers for 31 homes were either not in service or changed to a different number. This gives a response rate of 34 percent. In total, 42 percent of residents surveyed were male, while 58 percent were female. As indicated by the histograms found in the *Results* section, the majority of participants in the study are over 30 years of age, making up 81 percent of the surveyed residents. Of those, 73 percent are between the ages of 30 and 64, the population considered as 'adults', whereas those aged under 30 are considered 'youth', and over 64 considered 'seniors'. Furthermore, 22 percent of respondents had listed their annual income as over $50,000. The above figures are worthwhile noting as students, seniors, and individuals in low income brackets are often pegged as primary users of public transit (Ofori-Amoah, 2006).

Despite the demographics, 34 percent of participants have used or use CBT, hereinafter referred to as transit users. Data received from these participants coupled with that obtained from non-users will provide substantial information regarding why Corner Brook residents choose to use or not use CBT, as well as demonstrate attitudes towards the transit system. Of the transit users, only 41 percent indicated using CBT on a regular or semi-regular basis, whereas 59 percent indicated that they use CBT less than once per year. This indicates that they have used CBT in the past; however, they are not active users at present. The large rate of *non-active users* could result from the following: CBT not meeting the needs of customers (due to cost, routes, or schedule times), user-needs changing and are not met by CBT, or users were able to access a more convenient means of transport (e.g., purchase or use of a vehicle). Whatever the reason, the results demonstrate that CBT was not convenient enough to maintain participation from the mentioned non-active users.

Figures 5, 6, 7 and 8 show the participant's level of satisfaction with CBT. Of the 34

transit-users surveyed, 31 responded, while three refused to respond to statements requesting their level of satisfaction with bus routes, fares, schedule, and overall sentiments towards the transit system. With respect to fares, participants were generally satisfied with the current rates. Only three percent of participants responded *Strongly Disagree* to the statement "I am satisfied with CBTs bus fares", whereas 19 percent responded *Strongly Agree*, and a further 45 percent responded *Agree* (see Figure 6). The regular fare for CBT is $2.50/per trip, a rate slightly above average Canadian bus service, which is $2.10/per trip (CUTA, 2007). Despite discrepancies, cost does not appear to affect ridership rates. This is further supported by the responses to questions found in Table 1. Responses to the question "If there were a reduction in fees would you be more inclined to use CBT" show that of 99 residents surveyed, 95 percent responded *No*, that a reduction in fares would not impact their ridership.

As opposed to fares, participants expressed a greater likelihood to increase their ridership with changes to either schedules or routes. With respect to scheduling, when responding to the statement "I am satisfied with CBTs schedules" the majority at 46 percent responded *Strongly Disagree* while a further 16 percent responded *Disagree* (see Figure 5). Furthermore, when responding to the question "If there were a change in schedule times would you be more inclined to use CBT?", 28 percent responded *Yes.*

With respect to routes, when responding to the statement "I am satisfied with CBTs bus routes", 26 percent responded *Strongly Disagree* with a further 10 percent responding *Disagree.* This falls slightly behind the 19 and 29 percent who respectively responded *Strongly Agree* and *Agree.* Despite greater satisfaction with bus routes than bus schedules, when responding to the question "If there were a change in bus routes would you be more inclined to use CBT?"; 31 percent responded *Yes*, a response greater to that for a change in bus schedule. Upon examination of CBT routes, although the bus travels to key locations in the city including educational facilities, health facilities and shopping centres, it also excludes some notable areas within the city. These areas include Sunny Slope, parts of Curling, and Dunfield Park, home to Corner Brook's low-income housing community. While Dunfield Park could be considered in close proximity to nearby bus stops, in poor weather conditions (common to Corner Brook) or for individuals with health concerns this distance can be a determining factor in transit use. Furthermore, Corner Brook has no bylaw pertaining to sidewalk clearing which makes active transportation or movement to bus stops less feasible in the winter months, particularly for the elderly and disabled.

Results from all participants, excluding frequent users (considered to be those who use CBT at minimum once per month), demonstrate automobile use as a key contributor to their low levels of ridership with CBT. Of the 93 non-frequent/non-users surveyed, 81 percent stated that their reasoning for low/no transit use was that they had access to a vehicle. While improvement to the City's transit system may attract a select few of these residents, emphasis should be placed on attracting the remaining 19 percent. These participants indicated inconvenience, schedule and routes as being primary disincentives for not using CBT. When examining the system as a whole, levels of participant satisfaction and dissatisfaction with CBT are similar. Responses to the statement "Overall I am satisfied with CBT" show that 10 percent and 32 percent of participants respectively stated *Strongly Agree* and *Agree* while 19 and 29 percent respectively responded *Strongly Disagree* and *Disagree.* Such results show that while there is a level of satisfaction with CBT, there is a definite need for adjustments.

The Transit Improvement Plan for the City of Corner Brook by Hatch Mott MacDonald put forth many recommendations for the city's transit system. The Hatch Mott MacDonald report provided twelve recommendations to enhance CBT. The recommendations set forth include the following: improved identification of CBT, improved branding of CBT, promotion of CBT, both the replacement and construction of infrastructure, joint efforts with SWGC to determine a second bus stop location on campus, the introduction of a campaign to yield to buses when re-entering lanes, the installation of bicycle racks on existing buses, joint efforts with the City and Murphy Brothers Ltd. on the current contract to effect changes, service enhancements to transit deliver (hours of operation and frequency), efforts to construct a bus shelter in the parking lot of Murphy Square Mall, the development of an active transportation master plan and the incorporation of cycling routes in future road reconstruction projects.

This comprehensive inventory of recommendations from Hatch Mott MacDonald can be supplemented by results from the survey conducted in this research as well as those suggested to the researcher though transit planning conventions and research regarding the success of transit in other small Canadian cities. It is the researchers belief that Corner Brook residents need to be involved in any process of transit improvement, as they are the central stakeholders who are essential to the success of any public transportation strategy.

4.2 Recommendations Suggested by Participants

Participant recommendations have been derived largely from the following three areas of the survey which can be found in the appendix. Question 20, which was open to all participants stating that a change in schedule would potentially increase their ridership, question 22 which was open to all participants stating that a change in routes would potentially increase their ridership, as well as the option for all participants to include additional comments on CBT.

As show in Table 2, participants identified the need for buses between 7:00 a.m. -7:00 p.m. on weekends, 7:00 p.m. - 10:00 p.m. on weekdays and 7:00 p.m. - 10:00 p.m. on weekends. If this were to be applied to the existing schedule, regular hours of operation would be Monday-Friday 7:00 a.m. - 7:00 p.m. (with route 5 and 6 only, running between the hours of 10:00 a.m. - 3:00 p.m.), and weekends 7:00 a.m. - 10:00 p.m.

With respect to routes, 57 percent of respondents indicated the need for bus stops to and from other locations. Suggestions for new locations include Sunny Slope, Curling, Massey Drive, Windsor Street, Premier Drive, Confederation Drive, Reeds Road as well as more flexible suggestions such as more secondary streets or to cover a bigger area. Sunny Slope in particular received a lot of attention with participants on four separate occasions flagging it as a problem.

The *Additional Comments* section of the survey saw several reoccurring themes which will be mentioned below, while the information in entirety can be found in the Appendix. Fourteen percent of participants had readdressed their desire to see a weekend bus service, while further mention was made to the need for longer hours of operation, more frequent routes, improved advertising, more shelters, and accessibility for people with disabilities, as well as extended hours of operation during the holiday season.

4.3 Recommendations Suggested by Researcher

A combination of primary and secondary data has triggered a number of action items for a transit improvement strategy. These items pertain to schedule, routes, advertising and

infrastructure.

CBT has 6 buses; however no more than 4 operate at a time. Routes 1-4 operate ever 30 minutes, while routes 5 and 6 operate on the hour. Routes 5 and 6 operate exclusively between the hours of 10:00 a.m. - 3:00 p.m., whereas routes 1-4 operate during all other hours. In 2007, the total trips made on CBT were 93,248, of which route 3 and 1 were the most popular (Murphy Brothers Limited, 2008b). Twenty-eight percent of participants stated they would be more inclined to use CBT providing a change in routes, further specifying the need for more frequent routes and routes to and from other locations. Recommendations pertaining to bus routes can be found below:

- More frequent routes.
    - As opposed to operating every 30 minutes, most popular routes (1 and 3) should operate ever 15 minutes, while routes 2 and 4 can continue to follow the current schedule.
    - Routes 5 and 6 should operate every 30 minutes as opposed to every hour.
- Buses to and from other locations.
    - Route 3 and 6 should expand to include Sunny Slope and Dunfield Park.
    - Route 1 should expand coverage in Curling.

As viewed in *Section 4.2*, participant recommendations show desire to have buses run from 7:00 a.m. - 10:00 p.m., seven days a week. Emphasis was placed on expansion of hours during weekends and evenings, with specified interest in transit to/from religious facilities and both stores and the university library during all hours of operation. Recommendations pertaining to bus schedule can be found below.

- Buses operating 7 days per week, 7:00 a.m. - 10:00 p.m.
    - 10:00 a.m. - 3:00 p.m. current routes remain in place, however operating every 30 minutes.
    - Weekends and evening operations served by route s 5 and 6 operating every 30 minutes.
- The use of pilot projects as means to assess future markets for increased ridership.
    - Bus service Friday and Saturday evenings when bars close.

When asked whether or not the bus schedule was comprehensive, 69 percent of residents responded *Uncertain.* This large percentage suggests lack of advertising with respect to CBT. Furthermore, 9 percent of residents responding to the same question stated *No*, suggesting lack of clarity within the schedule itself. Below suggestions can be found with respect to advertising for CBT, which includes the presentation of the schedule.

- Increased availability of CBT schedule.
    - Made available in key locations in Corner Brook (e.g. grocery stores, gas stations, and shopping centres).
- Increased advertising of CBT.
    - Advertise CBT in Western Star, this could include the schedule.
    - The development of a website for CBT.
    - Posters and radio announcements encouraging use of CBT.
    - Advertise CBT in bus shelters.
- Redesigning current bus schedule.

- Improve quality of map by imposing routes on an existing map of Corner Brook, to provide frame of reference to riders.
- Alter symbols on map to be more reflective of the locations indicated (e.g. cross for clinic or shopping car for grocery stores).

With respect to infrastructure, CBT currently runs 6 buses; although some participants expressed the need for more buses, because not all buses operate on the same schedule it is possible to increase service while maintaining the current fleet. Bus shelters have also been requested by participants. Due to Corner Brooks unpredictable weather, the construction and renovation of bus shelters has potential to both increase ridership as well as comfort throughout the transit experience, and for such reasons is recommended. Providing the recommendations as found above are implemented, advertising and promotion are of utmost importance. Because Murphy Brothers Limited has held the contract for CBT since 1998, residents who are aware the system exists will need incentive to draw them to use CBT. An advertising campaign will be largely responsible for generating awareness, and drawing attention on CBT.

5.0 Conclusion

Frequency of transit use is primarily determined by ease of travel, partially explaining large vehicle ownership rates (Replogle, 1995). Suggestions put forth by the Hatch Mott MacDonald Report, if implemented, would without a doubt provide greater ease of travel with CBT. Due to Corner Brooks' low population, however, such changes are associated with large cost to the City. The suggestions put forth by this research tie in with those suggested by the Hatch Mott Report, however provide further insight from Corner Brook Residents. It is recommendation of the researcher that the Hatch Mott recommendations be implemented in incremental steps, first prioritizing route and schedule changes that can be made using the existing bus fleet, the addition of new bus shelters, and an advertising campaign. As steps are implemented, progress should be monitored and feedback obtained from users to ensure a greater satisfaction form users and increased ridership, specifically among students and seniors.

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7.0 Appendix

Appendix A

Table 4: Additional Participant Comments on CBT.

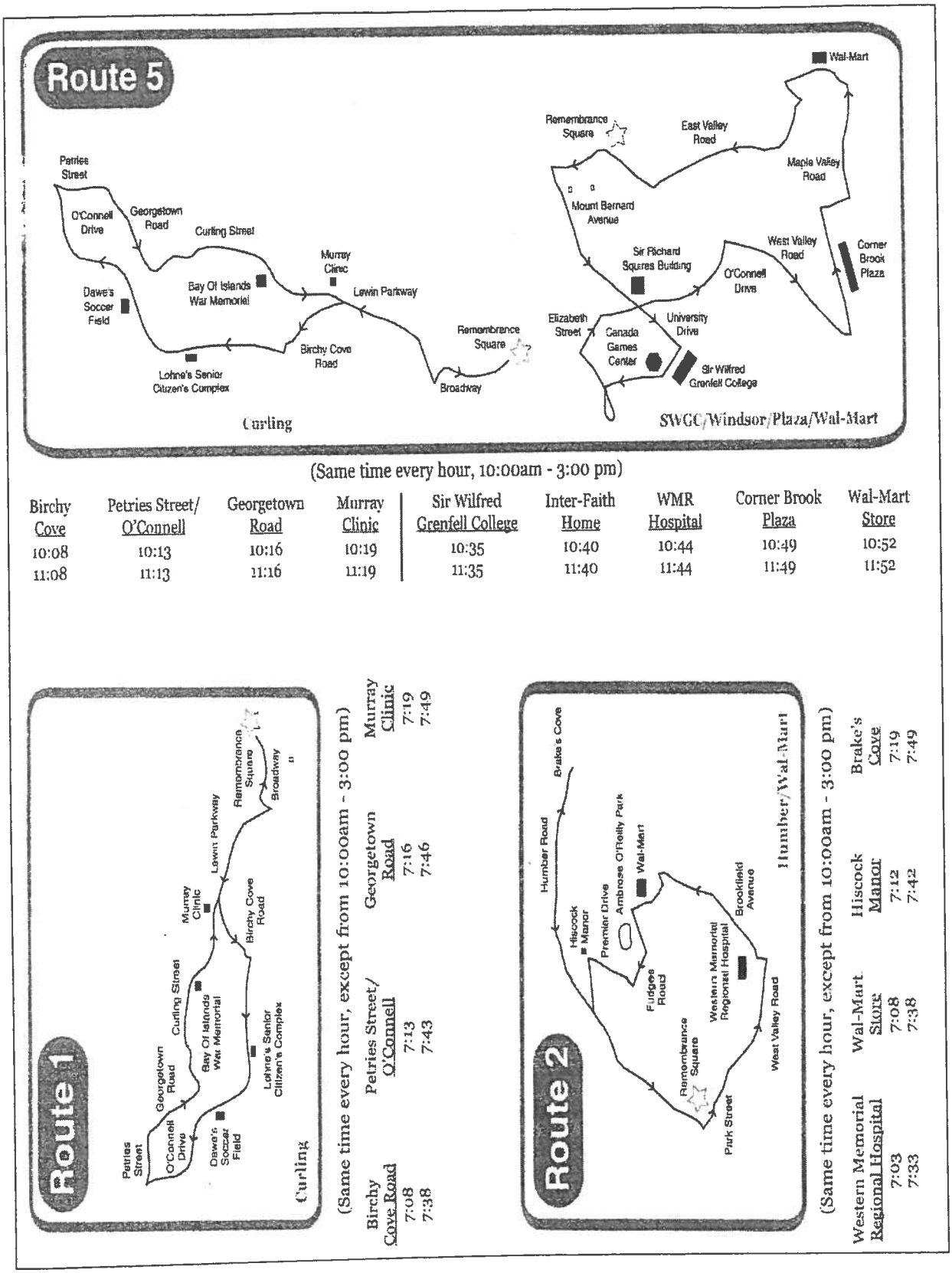
Comment	Reoccurrence
Schedule	
Need for weekend buses	14
More frequent	4
Too long to travel from point A to B	3
Need for evening buses	5
Need for longer hours of operation	7
Extend hours of operation during holidays	2
Current hours of operation are bad	2
Need last run when stores close	1
Should run until 12:00 am	1
Buses stop running before libraries and stores close	1
I know of people who have trouble with the schedule	1
Takes too long	1
I don't understand the schedule	1
I would take advantage of the bus if it ran more during the day and on weekends	1
Routes	
After bar on weekends	2
Too far to walk to bus stop	2
Not accommodating to people out side of municipal limits	1
Students move because of lack of service in Sunny Slope	1
Need for more direct routes	1
Should run to Steady Brook	1
More side streets	1
Should travel to smaller areas like Massey Drive and Curling	1
Should cover a larger area	1
More often, more buses, more routes	1
It's not a bus route to help everybody in all parts of the city	1
Infrastructure	
Need more shelters	5
Happy about smaller buses	2
Inaccessible to disabled	2
Buses should be big in some areas, small in others	1
I heard buses are comfortable	1
Signs should be better	1

DIMENSIONS OF CORNER BROOK TRANSIT

Need more buses	1
Advertising	
Not well advertised	3
Schedule should be available in the Western Star	2
Need more advertising with regards to availability, fares, environment, and economy	1
Other	
It's more convenient to use a vehicles	4
I have no need for transit	3
Happy to have the service	2
Important to have for students	2
Great for people with low income	1
Should not be contracted out, should be ran by the City	1
I've heard of many unsatisfied clients	1
The bus is not accommodating	1
Can't depend on it	1
If my vehicle is not available I will use it, otherwise I have no need	1
Unfriendly drivers	1
Terrible system	1
I don't know anyone who uses it	1
Unfamiliar with the transit system	1
No negative thoughts	1
Nobody complains about it	1
It is not designed well to be used for work purposes	1

Appendix B

Corner Brook Transit Bus Schedule



(Same time every hour, 10:00am - 3:00 pm)

Birchy Cove	Petries Street/ O'Connell	Georgetown Road	Murray Clinic	Sir Wilfred Grenfell College	Inter-Faith Home	WMR Hospital	Corner Brook Plaza	Wal-Mart Store
10:08	10:13	10:16	10:19	10:35	10:40	10:44	10:49	10:52
11:08	11:13	11:16	11:19	11:35	11:40	11:44	11:49	11:52

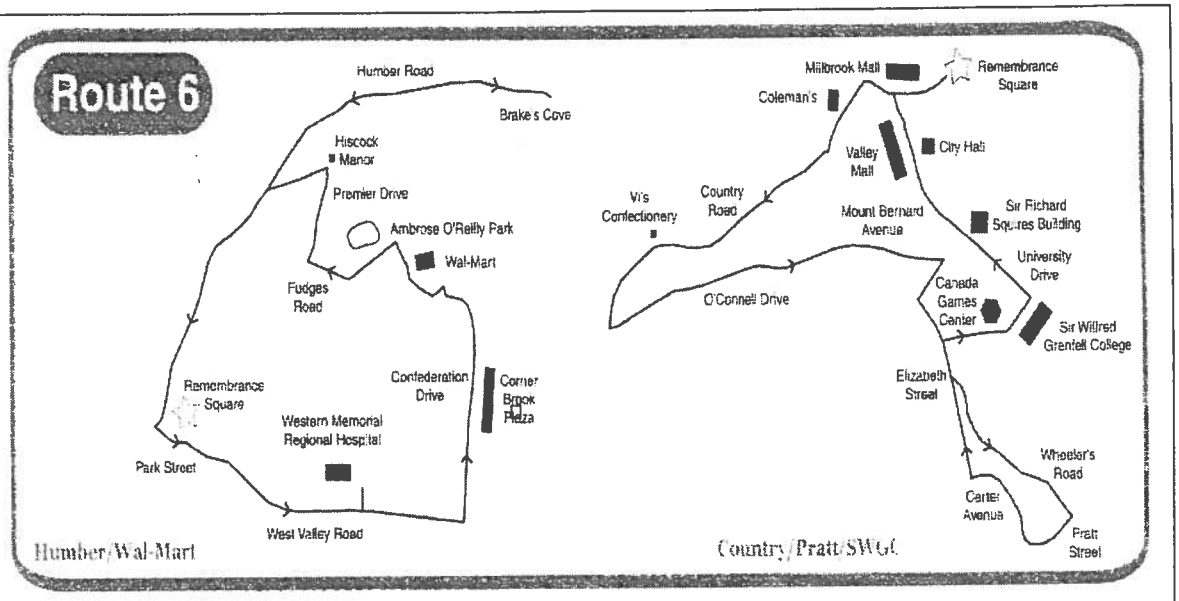
(Same time every hour, except from 10:00am - 3:00 pm)

Birchy Cove Road	Petries Street/ O'Connell	Georgetown Road	Murray Clinic
7:08	7:13	7:16	7:19
7:38	7:43	7:46	7:49

(Same time every hour, except from 10:00am - 3:00 pm)

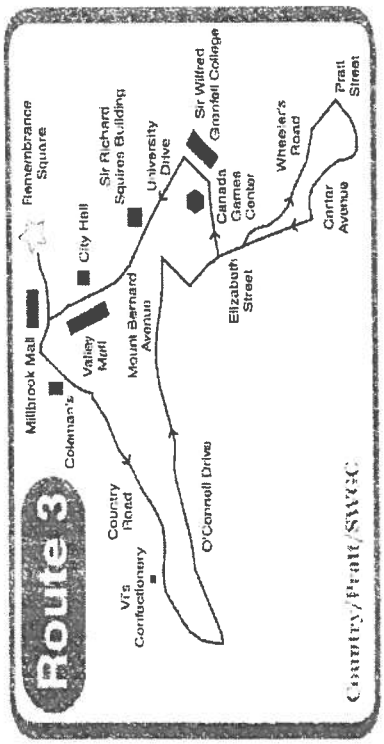
Western Memorial Regional Hospital	Wal-Mart Store	Hiscock Manor	Brake's Cove
7:03	7:08	7:12	7:19
7:33	7:38	7:42	7:49

Corner Brook Transit Bus Schedule



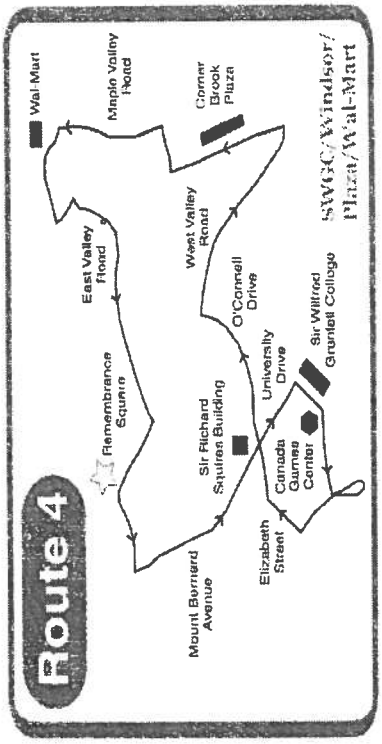
(Same time every hour, 10:00am - 3:00 pm)

WMR Hospital	Corner Brook Plaza	Wal-Mart Store	Hiscock Manor	Brake's Cove	Vi's Confectionery	Inter-Faith Home	Pratt Street	Sir Wilfred Grenfell College
10:03	10:08	10:12	10:15	10:20	10:37	10:42	10:45	10:50
11:03	11:08	11:12	11:15	11:20	11:37	11:42	11:45	11:50



(Same time every hour, except from 10:00am - 3:00 pm)

Vi's Confectionery	Inter-Faith Home	Pratt Street	Sir Wilfred Grenfell College
7:07	7:12	7:15	7:20
7:37	7:42	7:45	7:50



(Same time every hour, except from 10:00am - 3:00 pm)

Sir Wilfred Grenfell College	Inter-Faith Home	Corner Brook Plaza	Wal-Mart Store
7:05	7:10	7:17	7:20
7:35	7:40	7:47	7:50

Corner Brook Transit Bus Schedule

Corner Brook Transit Schedule

Routes 1 - 4 operate Mon.-Fri. from
7:00am - 10:00am, 3:00p.m-7:00p.m.
Routes 5 - 6 operate Mon.-Fri. from 10:00am - 3:00pm
(Route 5 is a combination of Route 1 and Route 4)
(Route 6 is a combination of Route 2 and Route 3)

Route 5 departs from Remembrance Square for:
Curling on the hour (e.g. 10:00, 11:00)
University/Plaza on the half hour (e.g 10:30, 11:30)

Route 6 departs from Remembrance Square for:
Humber/Wal-Mart on the hour (e.g. 10:00, 11:00)
Country Road/SWGC on the half hour (e.g 10:30, 11:30)

Summer Schedule (June, July, August) - Routes 5 and 6 only

Fare Schedule

Regular Fare	$2.25
Children (under 12 years of age)	$1.25
Pre-school children with adult accompaniment	FREE

FARES SUBJECT TO CHANGE WITHOUT NOTICE.

Ride Cards

Adult	5 rides	$10
Senior	5 rides	$9
Student	5 rides	$9
Student	50 rides*	$50

Monthly Passes

Adult	$63/month
Senior	$50/month
Semester Pass	$200/month

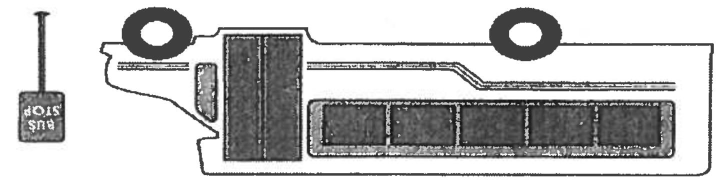
****Student ride cards are valid only for that month of purchase and may be shared by more than one student. Cards are available at our office in Watson's Pond Industrial Park, Sir Wilfred Grenfell College, College of the North Atlantic and Academy Canada.***

☆ Main Transfer Terminal (Remembrance Square)

Questions - Comments - Concerns

Corner Brook Transit
c/o Murphy Brothers Limited
P.O. Box 411
Corner Brook, NL
A2H 6E3

Information on transit advertising call 634-3345



CORNER BROOK TRANSIT
Operated by
Murphy Brothers Limited

BUS SCHEDULE

Recorded Information - 639-7BUS (7287)
Charter Information - 634-3345

Appendix C

Survey Page 1

Survey: Corner Brook Transit System

The following survey is to be completed in partial fulfillment of the requirements for Environmental Studies 4950: Independent Research Project. The purpose of the survey is to gain an understanding of the attitudes of Corner Brook residents towards the Corner Brook Transit system (CBT). We request that only those who are 18 and older complete the survey. Your answers will be grouped together with others and all individual responses will be kept confidential. The questionnaire will take approximately 5 minutes to complete. Participants are reminded that there is no right or wrong answer to the questions in the survey and that they are free to withdraw from the study at any time.

If you have any further questions or inquiries regarding the study please contact:

Kim Olson
Researcher, EVST
(709) 634-2713
kolsen@swgc.ca

Or

Dr. Nick Novakowski
Supervisor: Environmental Studies
(709) 637-6200 ext.6432
nnovakowski@swgc.ca

Questions 1-9: Please circle one answer per question, and follow instructions accordingly.

1. What is your gender?
   a. Male
   b. Female

2. In what age category are you placed?
   a. 18-24
   b. 25-29
   c. 30-39
   d. 40-49
   e. 50-59
   f. 60-64
   g. 65+

3. What is your current occupational status?
   a. Post-Secondary Student
   b. Employed Full-Time
   c. Employed Part-Time
   d. Unemployed
   e. Retired

Survey Page 2

4. This is a non-compulsory question: In what category is your annual income?
   a. Under $9,999
   b. $10,000 - 19,999
   c. $20,000 - 29,999
   d. $30,000 - 39,999
   e. $40,000 - 49,999
   f. Above $50,000

5. Have you ever used CBT?
   a. Yes
   b. No

6. If yes to question 5, how often do you use CBT?
   a. 5 or more times/week
   b. 1-4 times/week
   c. 1-3 times/month
   d. 1-11 times/year
   e. Less than 1 time/year

7. If yes to question 5, do you:
   a. Purchase Ride Cards
   b. Monthly Passes
   c. Pay for each trip

8. Do you own a vehicle?
   a. Yes
   b. No

9. If no, do you have access to a vehicle on a regular basis?
   a. Yes
   b. No

10. If you are not a frequent user of CBT, what are your main reasons for not using the system (please select your top three, identifying 1st, 2nd, and 3rd)?
    a. I have access to a vehicle _____
    b. I walk/bike instead _____
    c. It seems like an inconvenience _____
    d. The price _____
    e. The bus route _____
    f. The schedule _____
    g. It's confusing _____
    h. Safety _____
    i. Other (please specify) _____ _____

Survey Page 3

Questions 11-14: **Please complete if you answered 'YES' to question 5, if 'NO' proceed to question 15.** Using a scale of 1-5, please circle the number which corresponds to the level of satisfaction on the specified topic. Please note: 1=strongly disagree, 2=disagree, 3= neither agree nor disagree, 4=agree, 5=strongly agree

11. I am satisfied with CBT's schedule?
    1 2 3 4 5

12. I am satisfied with CBT's bus fares?
    1 2 3 4 5

13. I am satisfied with CBT's bus routes?
    1 2 3 4 5

14. Overall, I am satisfied with CBT?
    1 2 3 4 5

Questions 15-26: Please circle one answer per question, and follow instructions accordingly.

15. If there was a reduction in fees, would you be more inclined to use CBT? **If 'NO', proceed to question 19.**
    a. Yes
    b. No

16. What would you be willing to pay for the regular fare?
    a. $1.50
    b. $1.75
    c. $2.00
    d. $2.25
    e. $2.50
    f. Other (please specify) _____

17. What would you be willing to pay for monthly passes?
    a. Adult $68/ Senior $55
    b. Adult $63/ Senior $50
    c. Adult $58/ Senior $45
    d. Adult $53/Senior $40
    e. Other (please specify) _____

18. What would you be willing to pay for ride cards (please note that Adult, Student, & Senior ride cards are for 5 rides)?
    a. Adult $15/ Student & Senior $14
    b. Adult $10/ Student & Senior $9
    c. Adult $5/ Student & Senior $4
    d. other (please specify) _____

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19. If there was a change in schedule times, would you be more inclined to use CBT? **If 'NO', proceed to question 21.**
    a. Yes
    b. No

20. What would you like to see change in scheduling times (please select your top three, Identifying first, second, and third).
    a. Bus routes between the times of 10:00 am – 3:00 pm (Weekdays) _____
    b. Bus routes between the times of 7:00 pm – 10:00 pm (Weekdays) _____
    c. Bus routes after 10:00 pm (Weekdays) _____
    d. Bus routes between the times of 7:00 am – 7:00 pm (Weekends) _____
    e. Bus routes between the times of 7:00 pm – 10:00 pm (Weekends) _____
    f. Bus routes after 10:00 pm (Weekends) _____
    g. Other (please specify) _____ _____

21. If there was a change in bus routes, would you be more inclined to use CBT? **If 'NO', proceed to question 23.**
    a. Yes
    b. No

22. How would you like to see the bus routes change?
    a. More direct routes
    b. Routes to/from other locations. Please specify _____
    c. Other (please specify) _____

23. Do you feel the bus stops are well identified?
    a. Yes
    b. No
    c. Uncertain

24. Do you feel the bus schedule is comprehensive?
    a. Yes
    b. No
    c. Uncertain

25. If no, what aspects do you feel need improvement (please list in order of importance, with 1 being the most important)?
    a. Maps _____
    b. Schedule descriptions _____
    c. Bus stop locations _____
    d. Other (please specify) _____ _____

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If you have any additional comments, please list them below:

Thank you for talking the time to complete this survey.

Best regards,

Kim Olson
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Appendix D

Map 1: CBT Bus Routes