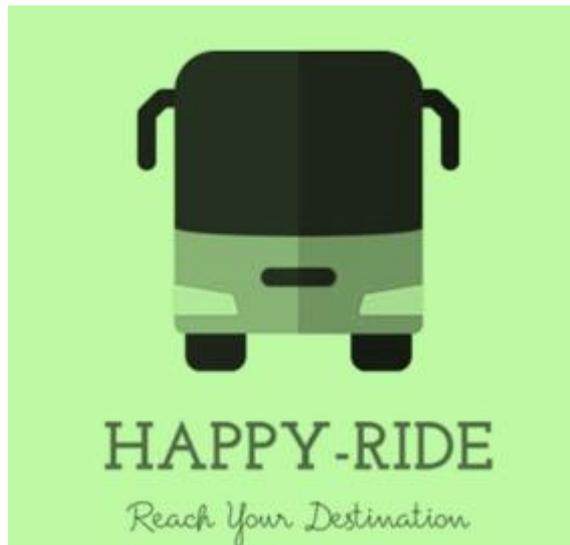




FINAL REPORT

PUBLIC TRANSIT FEASIBILITY STUDY

THE TOWN OF HAPPY VALLEY-GOOSE BAY



Mitacs

Project Start date	March 1, 2021
Project End Date	October 31, 2021
Total Duration of Project	Eight Months

PARTNER ORGANIZATION

Brenna Jarrar

Director of Community Development & Research,
Town of Happy Valley-Goose Bay,
PO Box 40, Stn. B
Happy Valley-Goose Bay, NL A0P 1E0,
Newfoundland and Labrador

MITACS INTERN(S)

1. **Fariba Hossain**

MASc Student,
Civil and Resource Engineering Department,
Dalhousie University

2. **Hasan Shahrier**

PhD Student,
Civil and Resource Engineering Department,
Dalhousie University

ACADEMIC SUPERVISOR

Muhammad Ahsanul Habib, PhD

Director, School of Planning &
Professor, Department of Civil and Resource
Engineering (cross),
Dalhousie University

EXECUTIVE SUMMARY

The Town of Happy Valley-Goose Bay is considered “The Hub of Labrador” as it is the service center for businesses and communities across Central and Coastal Labrador. Happy Valley-Goose Bay is the only community in Labrador accessible by road, air, and water, with recent expansions and improvements in key transportation infrastructure, namely the Goose Bay International Airport, the Port of Goose Bay, and the Trans-Labrador Highway (TLH). The Town is the largest community in Central and Coastal Labrador with a population of 8,109 in 2016, a growth of 7.4% over 2011 (Statistics Canada). As the community grows, the demand on transportation infrastructure will increase into the future. To meet this growing demand, a sustainable and accessible public transit system needs to be explored for the Town. The purpose of this project is to understand the feasibility of such a public transit system for the Town of Happy Valley-Goose Bay.

An engagement session was organized at the beginning of the project where Dr. Ahsan Habib presented the goals and objectives of the project to staff in the Town of Happy Valley-Goose Bay and the Band Council office of Sheshatshiu Innu First Nation. Dr. Habib shared the work plan and collected demographic and socio-economic information from the partner organizations. There was also a roundtable discussion on the opportunities and challenges of public transit in the Central Labrador context. In June and July, the research team at Dalhousie University conducted a travel survey with the public. The survey captured demographic information, mobility conditions, and public opinion on the future needs for public transit in the area. The survey revealed that the Town’s residents are highly car dependent (89%). In terms of vehicle ownership, most respondents own one vehicle (49%) but about 30% stated that they own two. While the current landscape is one where respondents are highly reliant on private vehicles, data collected on the average commute, where about 54% of respondents’ commute 10 km or less, suggests this region could be conducive to non-auto travel. While more than half of respondents have a short commute, approximately 25% of respondents commute 30 km or more, skewing the average commute distance to 34.04 km. The survey revealed that most trips outside of the home (39.2%) are related to personal business, followed by 22.5% for work activities. Survey respondents answered several questions on the benefits of, and barriers to, the establishment of public transit in Happy Valley-Goose Bay and the wider region of Central Labrador. The top three benefits to public transit were that would be “Accessible,” “Safe,” and “Affordable.” The top three barriers to adopting public transit were the small population base in the region, car dependency, and the geography of the Town. Nearly 50% of respondents answered that they would be likely or very likely to use public transit in the community, and more than 60% were willing to pay between \$2 to \$4 per trip. Following an analysis of best practices, we presented multiple service route options, fixed or flexible, dial-a-ride, and a taxi-bus option to survey respondents. 53.4% respondents indicated that they would prefer a fixed route transit system in Happy Valley-Goose Bay. Information on key destinations was also collected which informed the placement of potential bus stops.

On August 5, 2021, a virtual community focus group discussion was held entitled “Town of Happy Valley-Goose Bay Public Consultation Session on Potential Transit Service.” The goals of this session were to facilitate interactive and lively discussions about a transit system for the Town, gather community feedback on the principles, design, and features of a potential system, highlight areas of importance to the community, and identify possible route options and technological features. The focus group session was split into two halves, entitled: “Session 1: Public Transit and Your Community” and

“Session 2: Design your Transit System.” Following this focus group session on August 5th, a final survey was put out to the residents of the Town, inviting them to draw their ideal public transit route using virtual mapping software. This survey received approximately 30 responses, and the results were influential in shaping the recommended route options. This concluded the data collection stage of the study.

Based on the data collection and research outlined above, it is recommended that the Town of Happy Valley-Goose Bay implement a public transit service, composed of two routes, each serviced by a community bus. It is recommended that this implementation be done in a phased approach, beginning with the municipal route option as a pilot project, and moving along to the regional connectivity route option, depending upon the success of the pilot. The details of each route option, the technical components of the recommended service, and a summary of anticipated costs are as follows: In Phase 1, the proposed Route 1 will cover the core areas of the Town of Happy Valley-Goose Bay, with connectivity to the regional airport. In Phase 2, it is recommended that there be an express transit route, Route 2, to connect the nearby communities of Sheshatshiu Innu First Nation and the Town of North West River to the Town of Happy Valley-Goose Bay. The total length of the proposed routes is 28km for Route 1 and 92km for Route 2. It is recommended the entire service run on a timed schedule, with set times for each stop. Route 1 will run on a one-hour interval, and Route 2 will be on a three-hour interval. In terms of the technical components of the proposed service, it is recommended that the Town of Happy Valley-Goose Bay use a community bus with capacity for 20 passengers. It is also suggested that the Town of Happy Valley-Goose Bay begin with the most basic fare collection options, primarily a cash and ticket service, where tickets can be sold through local establishments and the Town Hall. Should there be capacity down the road, it is recommended the Town explore upgrading to a smart card service, if demand and additional funding becomes available. In terms of financial feasibility, the upfront capital costs for establishing each Route are estimated to be approximately \$180,000.00. The annual operating costs for Route 1 are estimated to be \$329,428.00, and due to the longer distances travelled, Route 2 will cost approximately \$341,640.00 annually to operate. Lastly, in terms of marketing the service, it is clear from research into best practices that branding helps to create an easily identifiable product with a marketable and common theme which extends across the service. Our proposed brand name for the transit service in Happy Valley-Goose Bay is ‘Happy-Ride.’ To engage new customers and increase ridership over time, it is recommended that the Town offer a variety of incentives, such as, a reduced rate for seniors and children or reduced rate passes for employees of organizations who register with the Happy-Ride Smart Commute Program for bulk discounted rates. In order to promote the public transit system, we recommend pursuing multiple promotional activities, e.g., a social media campaign, media interviews, advertisements in key community facilities, and direct circulars to potential stakeholders.

TABLE OF CONTENTS

CHAPTER 1: INTRODUCTION	1
1.1 Background.....	1
1.2 Demographic Context.....	2
1.2.1 Population.....	2
1.2.2 Age and Sex	2
1.2.3 Mode of Transportation for Commuting	3
1.2.4 Income.....	4
1.3 Relationship with the Partner Organization	6
1.3.1 Overview of Transit Feasibility Project.....	6
1.4 Existing Transportation System in Happy Valley-Goose Bay	6
1.5 Project Goals.....	7
CHAPTER 2: METHODOLOGY AND STUDY DESIGN.....	8
2.1 Work Plan.....	8
2.1.1 Initial Stage: Baseline Condition	8
2.1.2 Intermediate Stage: Transit Options and Evaluation.....	8
2.1.3 Final Stage: Recommendation and Submission	8
2.2 Review of Previously Conducted Transit Studies.....	10
2.2.1 Town of Lunenburg, Nova Scotia.....	10
2.2.2 Town of Yarmouth, Nova Scotia.....	10
2.2.3 Town of Bridgewater, Nova Scotia.....	11
2.2.4 Town of Peace River, Alberta.....	12
2.2.5 Sou’West Nova Transit Association (SWNT), Nova Scotia.....	13
2.2.6 Norfolk County, Ontario.....	14
2.2.7 Hinton, Alberta	14
2.2.8 Whitecourt, Alberta.....	14
CHAPTER 3: SURVEY RESULTS ANALYSIS.....	16
3.1 Demographic Characteristics.....	16
3.1.1 Household Demographics.....	16
3.1.2 Individual Demographics.....	17
3.2 Mobility Tool Ownership.....	19
3.2.1 Vehicle Access	19
3.2.2 Vehicle Ownership.....	19
3.2.3 Bicycle Access.....	20
3.3 Travel Behaviour.....	20

3.3.1 Primary Mode.....	20
3.3.2 Secondary Mode.....	21
3.3.3 Commute Distance.....	22
3.3.4 Commute Frequency.....	22
3.3.4 Travel Accompaniment.....	23
3.4 COVID-19 and Travel.....	23
3.4.1 Travel Behaviour.....	23
3.4.2 Primary Mode of Commute since COVID-19 Pandemic.....	24
3.4.3 Commute Frequency during Pandemic.....	25
3.5 Findings for Future Public Transit:.....	25
3.5.1 Awareness of Transit Systems.....	25
3.5.2 Benefits of Public Transit.....	26
3.5.3 Barriers to Implementing Public Transit.....	26
3.5.4 Relationship with Strategic Plan of Happy Valley-Goose Bay.....	27
3.5.5 Willingness to Ride in Public Transit.....	28
3.5.6 Willingness to Pay for Public Transit.....	28
3.5.7 Frequency of Public Transit.....	29
3.5.8 Willingness to Walk to Bus Stop.....	29
3.5.9 Expected Route Service Option.....	30
3.5.10 Expected Vehicle Option.....	30
3.5.11 Key Destinations.....	31
3.5.12 Distance between Bus Stops.....	31
3.5.13 Operational Model of Transit Service.....	32
3.5.14 Expected Fare Collection System.....	32
3.5.15 Development of Tourism Sector.....	33
3.5.16 Development of Regional Transit Connectivity.....	33
CHAPTER 4: FOCUS GROUP DISCUSSION.....	34
4.1 Overview.....	34
4.2 Goals.....	34
4.3 Process.....	34
4.4 Major Findings.....	35
4.4.1 Transportation Issues.....	35
4.4.2 Benefits of Transit.....	36
4.4.3 Guiding Principles.....	36
4.4.4 Service Route Concepts.....	37
4.4.5 Key Destinations.....	39

4.4.6 Service Features.....	40
4.5 Contribution of Women in Motion Advocacy Group.....	41
CHAPTER 5: TECHNICAL FEASIBILITY ASSESSMENT.....	42
5.1 Service Concepts.....	42
5.2 Route Determination.....	42
5.2.1 Phase 1.....	42
5.2.2 Phase 2.....	43
5.3 Vehicle Options.....	44
5.3.1 Conventional Bus.....	44
5.3.2 Small Bus.....	45
5.3.3 Community Bus.....	45
5.3.4 Large Van.....	46
5.4 Fare Technology Options.....	47
5.5 Bus Stop Locations.....	47
5.6 Service Options.....	49
5.7 Additional Features.....	50
5.7.1 RFID Trackers.....	50
5.7.2 Passenger Behaviour Tracking System.....	50
5.7.3 Wi-Fi.....	50
5.7.4 Spouts Detector.....	50
5.7.5 Computerised Diagnostics.....	50
5.7.6 Automatic Door Entry System.....	51
5.7.7 Mirror Grid Systems.....	51
CHAPTER SIX: FINANCIAL FEASIBILITY.....	52
6.1 Types of Operational Entities.....	52
6.2 Costing.....	52
6.2.1 Cost Estimation Methodology.....	53
6.3 Branding and Marketing.....	54
6.3.1 Incentives.....	55
6.3.2 Promotional Activities.....	55
6.4 Funding Opportunities.....	56
6.5 Final Overview and Summary of all Key Recommendations.....	58
APPENDIX A (SUMMARY OF SURVEY DATA).....	59
APPENDIX B (FOCUSGROUP DISCUSSION MATERIAL).....	68
APPENDIX C (PROPOSED BUS ROUTES).....	76

CHAPTER 1: INTRODUCTION

1.1 Background

The Town of Happy Valley-Goose Bay is located in the central region of Labrador on the coast of Lake Melville and the Churchill River. As such, it plays a significant role as a service centre for many remote communities across Labrador, as it hosts major employment centres, a college campus, healthcare facilities, shopping, and government offices. The Town is majority Indigenous and is home to the largest Indigenous population in the province of Newfoundland and Labrador. Of particular relevance to this study is the Town's extensive network of transportation infrastructure, primarily the Goose Bay International Airport, the Port of Goose Bay, and the Trans-Labrador Highway (TLH). This level of transportation connectivity has made the Town a nodal point for Labrador as well as other areas of Northern Canada and Quebec.

In 1973, the Town of Happy Valley-Goose Bay was established following the amalgamation of the former Town of Happy Valley and the Local Improvement District of Goose Bay. The former Town of Happy Valley was formally established in 1955 following the development of a Royal Canadian Airforce Base near the mouth of the Goose River. The strategic location of the future Town was first noted by the Air Force in 1941, during the Second World War, when it was selected as the future site of a Base. The Local Improvement District of Goose Bay was established in 1970 to house the families of DND employees as the Base grew.

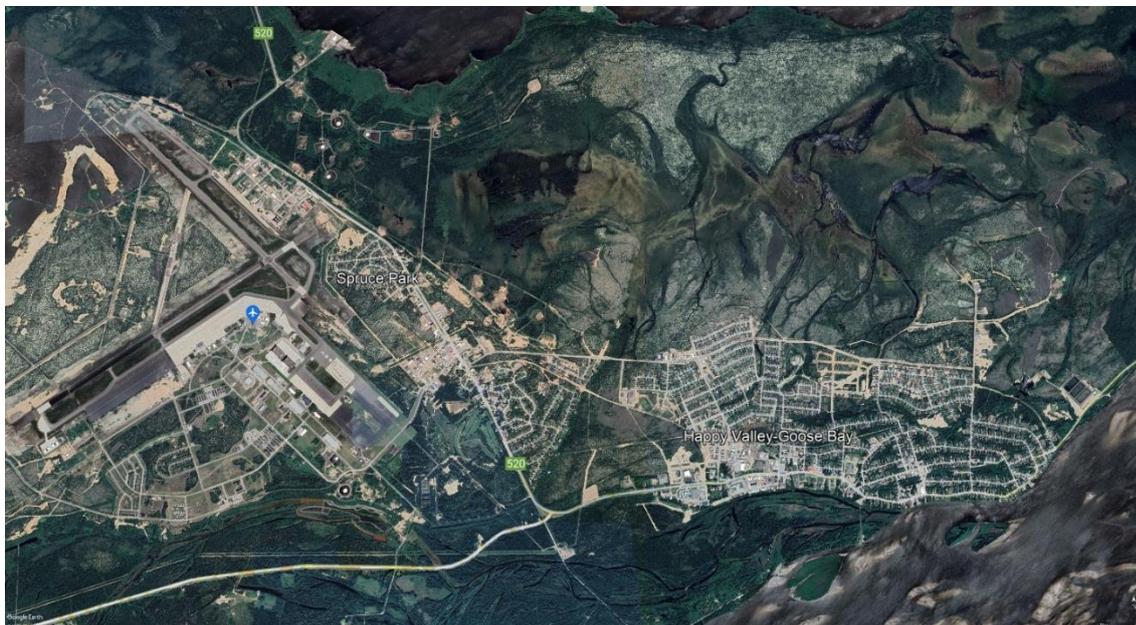


Figure 1.1: Topographic view of road network of Happy Valley – Goose Bay

The land area of Happy Valley-Goose Bay is 305.85 square kilometers with a population density of 26.5 people per square kilometer. The Town has the largest community in central and coastal Labrador with a population of 8,109 in 2016, a growth of 7.4% over 2011 (Statistics Canada). The strategic vision of the Town is to build a diverse, multicultural, leading community on the strengths of its people to create prosperity, opportunities, and a high quality of life. The Town is also committed to taking a

leadership role to ensure the diverse needs of the community are met through the delivery of responsive and accountable municipal programs, services, and resources.

1.2 Demographic Context

The demographic information discussed in this section has been retrieved from the 2016 Canadian Census. This research project conducted a survey which also incorporates demographic information pertaining to the respondents of Happy Valley-Goose Bay. The summary of that survey is found in **APPENDIX A**.

1.2.1 Population

Figure 1.2 illustrates the population distribution for Happy Valley-Goose Bay over the past 20 years. The highest population is observed in 2016, with a consistent rate of population growth of 1.80% from 2001 to 2016.

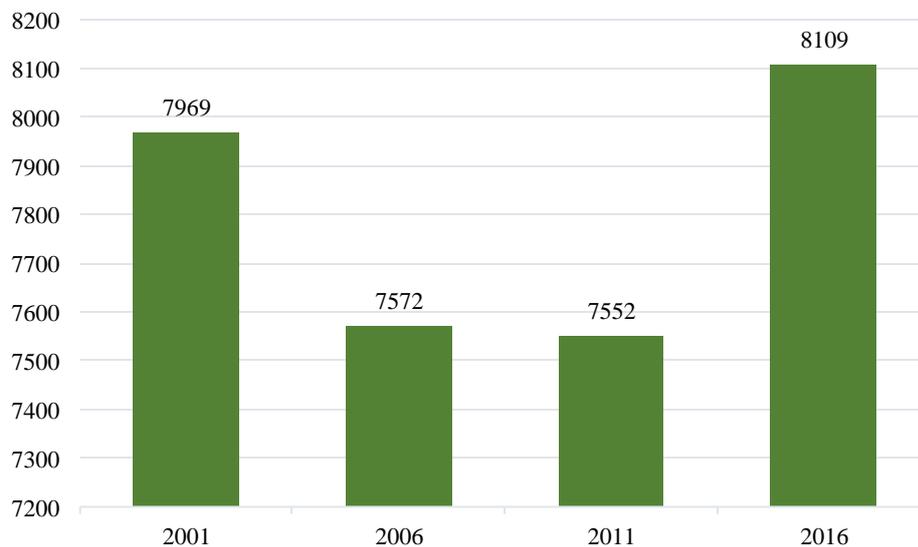
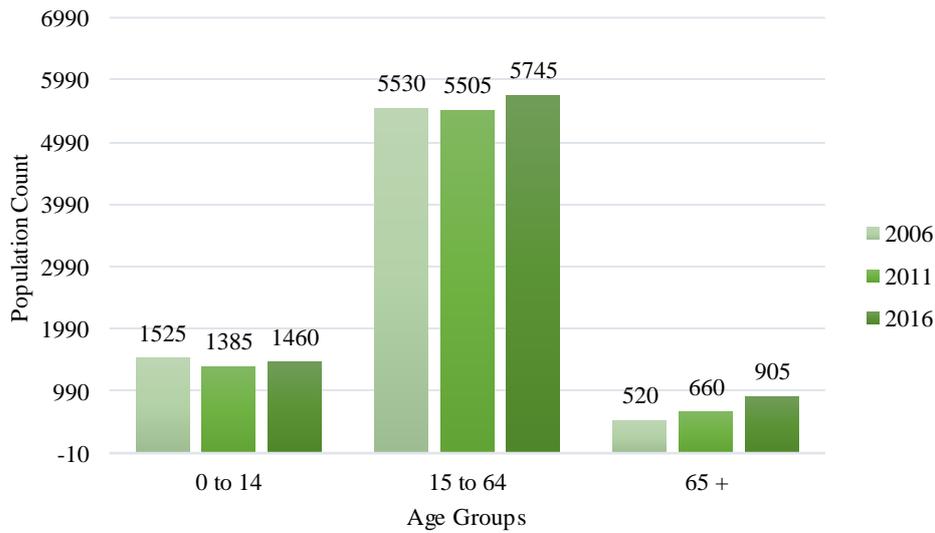


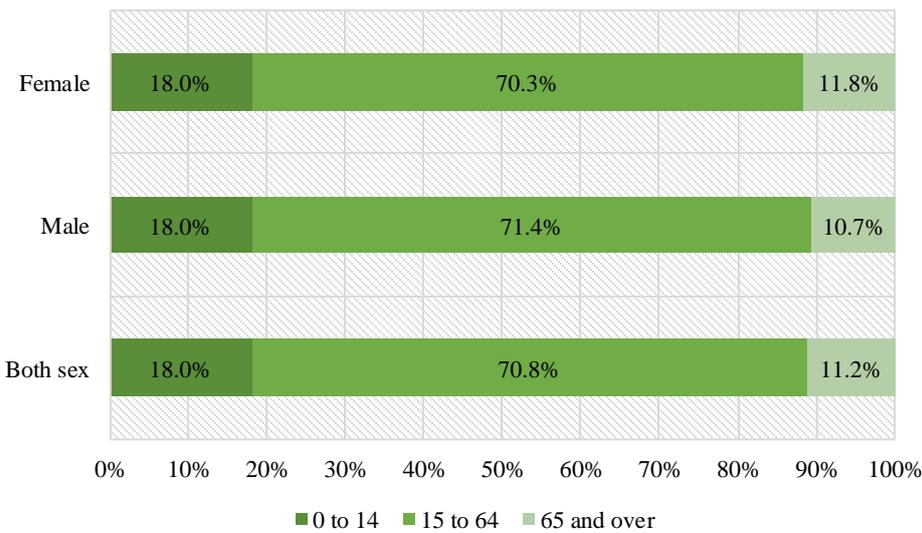
Figure 1.2: Distribution of population in last 20 years

1.2.2 Age and Sex

In 2016, 1,460 children aged 0 to 14 and 905 persons aged 65 and over lived in Happy Valley-Goose Bay, representing 18.0% and 11.2% of the total population respectively. The working age population (15 to 64) represented 70.8% of the total population (Figure 1.3).



(a) Distribution of population for different age groups

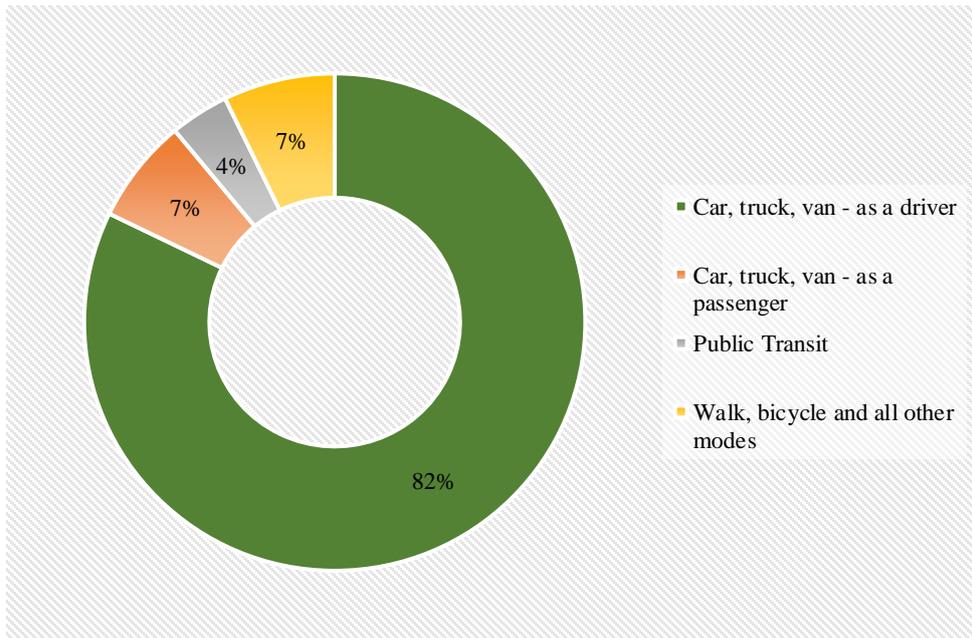


(b) Distribution of sex for different age groups.

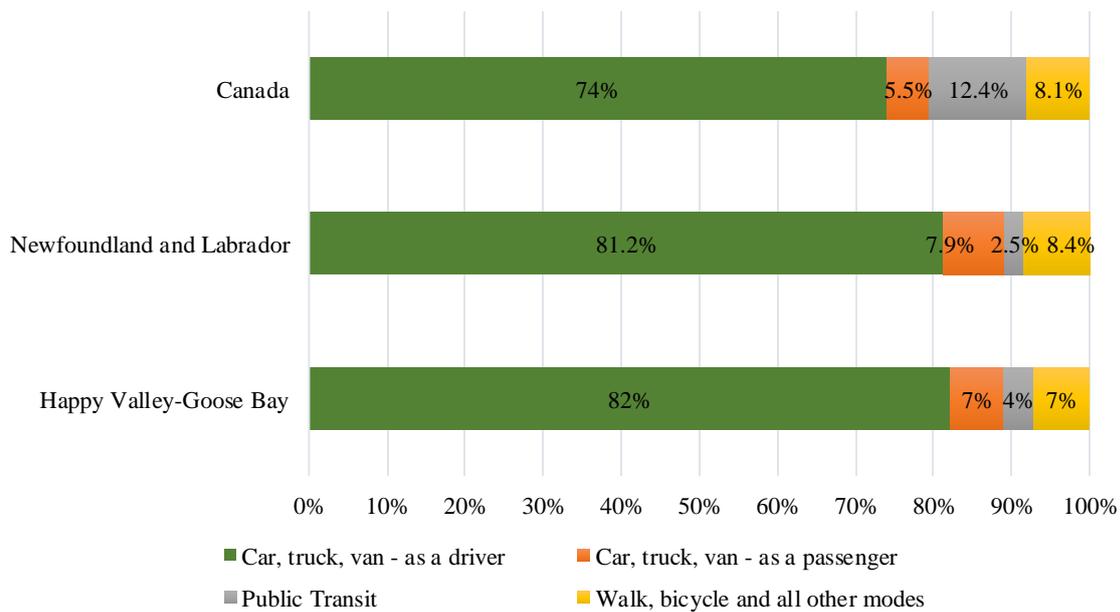
Figure 1.3: Information on age and sex

1.2.3 Mode of Transportation for Commuting

Figure 1.4 portrays the mode of transportation for the main commute of respondents to the survey conducted for this research study. In the Town of Happy Valley-Goose Bay, nearly 89% of residents use a car, truck, or van as either a driver or a passenger. This percentage is relatively high in comparison to the mode of transportation for commuting in Canada overall.



(a) Share of main commute mode for the Town of Happy Valley-Goose Bay



(b) Comparison among different modes of commute

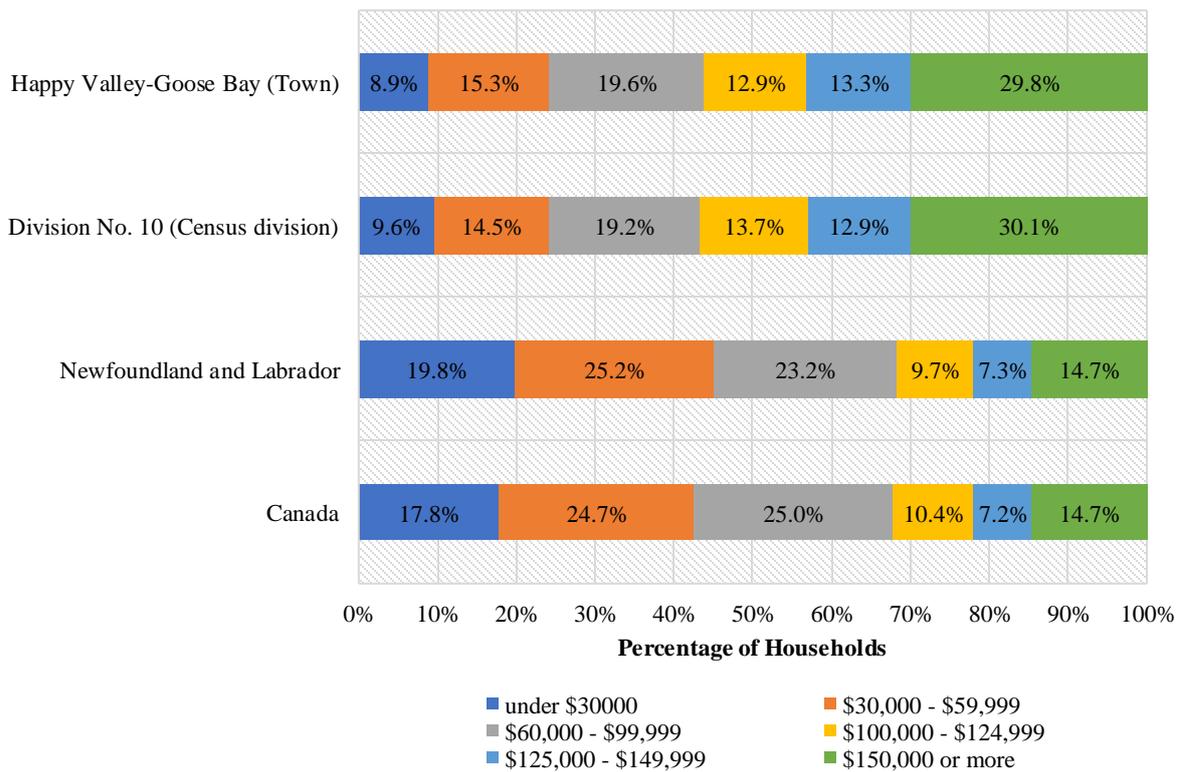
Figure 1.4: Mode share information

1.2.4 Income

In 2015, the median total income of households in Happy Valley-Goose Bay was \$112,307.00, a change of 40.2% from \$80,099.00 in 2005. The proportion (29.8%) of the higher income group is higher than that of both the province of Newfoundland and Labrador and Canada (Figure 1.5).



(a) Income distribution



(b) Comparison among income range

Figure 1.5 Information about different income groupings

1.3 Relationship with the Partner Organization

We are delighted to partner with the Town of Happy Valley-Goose Bay for this MITACS transit feasibility study. The Town of Happy Valley-Goose Bay is the fifth largest municipality in Newfoundland and Labrador, and is a vibrant, diverse, and multi-cultural community with representation from the Innu, Inuit, and Southern Inuit of Labrador as well as Newfoundlanders, other Canadians, and new Canadians. Being the only location in Labrador accessible by road, sea, and air, Happy Valley-Goose Bay is the service hub of Labrador. Therefore, public transit can provide additional opportunities for service delivery and economic activity. What is more, a public transit system would enable the Town to fulfil its mandate and strategic plan objectives. The 12th Council of the Town of Happy Valley-Goose Bay adopted the Happy Valley-Goose Bay Municipal Plan and Development Regulations, 2018-2028, in July 2021 with the major strategic priorities of the municipality outlined. The proposed system will substantively address at least three of these strategic priorities: 1) Infrastructure Renewal, 2) Environmental Leadership, and 3) Quality of Life and Inclusivity.

1.3.1 Overview of Transit Feasibility Project

The need for transit in this region is evident to all who live or visit, and there are unique challenges in Central Labrador that transit would help to address. Happy Valley-Goose Bay is a Town of about 8100, but Sheshatshiu Innu First Nation and the Town of North West River are roughly 30 kms away, with a combined population of approximately 2,000 who travel back and forth to Goose Bay frequently. Many people are forced to hitch-hike between the Town and their home community, and especially with the harsh winters, and the lack of cell service on the connecting road, it is a dangerous journey. The Town of Happy Valley-Goose Bay is also a service-hub for folks from further away communities on the North and South coasts of Labrador, with many residents of coastal communities travelling to attend appointments, visit family, or perform errands they are unable to do at home. Many people travelling from remote communities who need to get around Town for appointments during their stay are forced to rely on private taxis or travel on foot. A public transit service will therefore bring immeasurable benefits to the broader community in Labrador by easing the burden and cost of visiting Town for essential services.

Homelessness, poverty, and the ongoing legacies of colonialism are felt daily by many community members, the majority of whom are Indigenous, and the gaps in service provision are sometimes a matter of life and death. Beyond potentially saving lives that could be lost on the road between neighbouring communities, this bus route would enable seniors, youths, and low-income residents and visitors in the Town to navigate spread out essential services like the airport, schools, library, hospital, YMCA, daycare centre, and grocery stores. Residents want the Town to be a place where everyone can live with dignity and have the support they need to thrive regardless of age, background, or means. By building a strong framework of community assets that makes life easier for current residents, it is expected that the community will continue to grow by encouraging young families to stay.

1.4 Existing Transportation System in Happy Valley-Goose Bay

Small towns like Happy Valley-Goose Bay are characterized by a combination of low population density, greater distance between communities, and limited to no public transit services. The community of Happy Valley-Goose Bay is growing day by day, but there is no existing public transit service. The residents of the community must rely heavily on their own vehicle, and those who do not have access

to a car can struggle. Public transit systems in small towns like Happy Valley-Goose Bay are a sustainable way to commute: they increase commuters' mobility opportunities, offer mobility services to the carless population and mobility challenged persons, and importantly, reduce traffic congestion, travel time, air pollution and energy consumption. Public transit systems can also help communities enhance opportunities for businesses and facilitate economic growth.

1.5 Project Goals

The aim of this research project is to identify if a public transit system is feasible for the area.

The main objectives of this research project are as follows:

- To explore individual travel behaviour using a survey. This will shed light on the present and future need for public transit in the community of Happy Valley-Goose Bay, Newfoundland and Labrador.
- To identify best practices for public transit feasibility of similar sized communities in North America.
- To analyze transit service options and fixed route transit options for the geographic area of Happy Valley-Goose Bay.
- To identify technologies that are efficient, environmentally beneficial, and cost-effective for both the Town of Happy Valley-Goose Bay and future users of public transit.
- To engage targeted stakeholder groups to assess their interest, potential use, and support for public transit within the Town of Happy Valley-Goose Bay.
- To recommend a possible transit route for the Happy Valley-Goose Bay area after the evaluation of technical and financial feasibility.

CHAPTER 2: METHODOLOGY AND STUDY DESIGN

The following sections outline the methodology deployed for the public transit feasibility study for the Town of Happy Valley-Goose Bay. The study was conducted in three stages, outlined below:

2.1 Work Plan

2.1.1 Initial Stage: Baseline Condition

In the initial stage of this project, we performed a background review of the existing conditions of transportation infrastructure in the Town of Happy Valley-Goose Bay. This included a review of relevant research project reports, GIS data for the Town, and demographic data from Statistics Canada. A travel survey was conducted during this stage of the project. From the travel behavior survey, we captured information about existing demographic information, mobility conditions, and future needs for public transit in the area.

A public engagement session was also held in this stage of the research project, with the help of Town staff. In this session, Dr. Habib gave a presentation which included an overview of the objectives of the project, best practices from existing rural transit systems, and some preliminary survey results. The second part of the session mainly focused on direct engagement with the session attendees. Two breakout groups were conducted in the second half, entitled: “Breakout Group 1: Public Transit and Your Community” and “Breakout Group 2: Design your Transit System.”

2.1.2 Intermediate Stage: Transit Options and Evaluation

In the intermediate stage, possible route options were developed following a review of the data collected from the initial stage. Features under consideration during this stage included major destinations that would shape the potential routes, residential density, and frequency of service.

Another feature under review in this stage was the type of potential vehicle to be deployed as part of the proposed service. In terms of vehicle specifications, the priority was to incorporate technologies that are efficient, environmentally beneficial, and cost-effective. Part of this assessment was a consideration of the technical and financial feasibility for each proposed vehicle along different alternative routes. The purpose of this was to highlight the energy efficiency of different vehicles on different routes, with consideration of future transit ridership. For the financial feasibility assessment, the relevant costs were estimated and determined through review of a similar transit project in Atlantic Canada.

2.1.3 Final Stage: Recommendation and Submission

In this stage, the overall output of the research project was discussed with our partner group of Town staff. According to their suggestions, the complete final report was prepared under the supervision of Dr. Ahsan Habib. This final report presents the final recommended routes, vehicles, costing, and overall financial feasibility for a public transit system in the Town of Happy Valley-Goose Bay.



Figure 2.1: Conceptual work plan for the transit feasibility study

2.2 Review of Previously Conducted Transit Studies

Many municipalities across Canada have implemented public transportation systems, and their adaptability has established them as a viable choice for those in need of a dependable transportation system. This section gives an overview of prior studies on public transit systems in various jurisdictions and profiles comparable to the Town of Happy Valley-Goose Bay that can be used as a reference or for reviewing factors for developing a prospective transit service in the Town. When investigating relevant case studies, the following factors were considered: population density, total serviced population, employment, and proximity to a major urban area.

2.2.1 Town of Lunenburg, Nova Scotia

Lunenburg is a port town on the south shore of Nova Scotia. It has a population of 2263 people and a land area of 4.04 km². Citizens for Public Transit (CPT) was founded in 2006 to address Lunenburg County's demand for scheduled fixed-route public transportation that is accessible to all. Their main goal has been to provide a service that connects Bridgewater, Lunenburg, Mahone Bay, and the surrounding areas of the Municipality of the District of Lunenburg (MoDL). The Joint Transportation Committee (JTC) was formed by the four municipalities to investigate transportation options. As a response, Lunenburg County conducted a feasibility study on a public transportation system. The objective of that feasibility study was to assess transportation needs throughout Lunenburg County in order to determine whether or not a transit system could be implemented. Based on census statistics and thorough public and stakeholder input, it was discovered that there is substantial transit activity between the towns served by Lunenburg Transit for work, school, and discretionary (non-work) trips. Experts attempted to design a responsive experimental transportation service based on these demands and the geographically scattered towns in Lunenburg County. A service corridor was identified, connecting into the Town of Bridgewater and Mahone Bay (Bridgewater – Mahone Bay – Lunenburg).

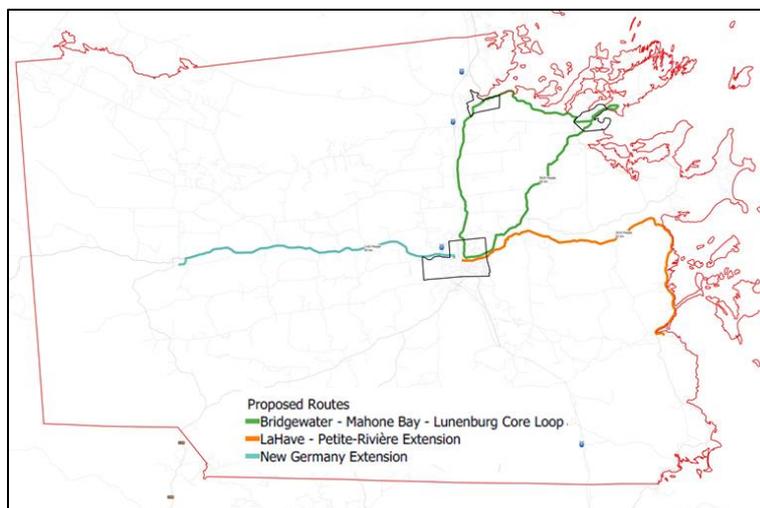


Figure 2.2: Transit Route, (Bridgewater – Mahone Bay – Lunenburg)

2.2.2 Town of Yarmouth, Nova Scotia

Yarmouth is a municipality in southwestern Nova Scotia, and it is the largest town in Yarmouth County. To provide a starting point for the Town of Happy Valley-Goose Bay public transit system, we looked at the Town of Yarmouth as a case study, as they launched a public transit system on February 1st, 2016. Both towns have similar populations and demographic trends, although the population of Yarmouth has

been decreasing, while the population of Happy Valley-Goose Bay is increasing. There are a number of key comparisons that can be made, as well as lessons learned from the Town of Yarmouth’s experience. In Yarmouth, the public transit system route follows a loop around the town centre, stopping at designated stops like the hospital and popular shopping destinations. A flag stop system is also in place where passengers wishing to travel on the bus can wave for the driver to stop anywhere along the route. Yarmouth’s transit route is a 14.10 km loop with 17 stations, with community buses running from 7 a.m. to 7 p.m. on weekdays.

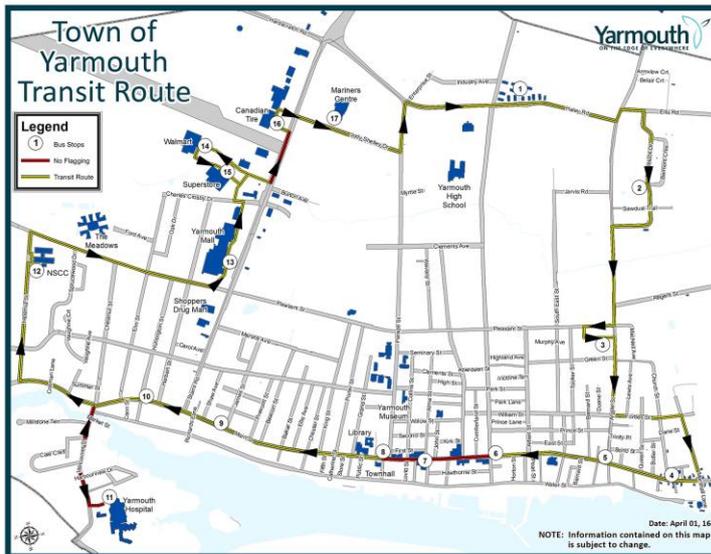


Figure 2.3: Transit Route, Yarmouth

2.2.3 Town of Bridgewater, Nova Scotia

The Town of Bridgewater is the largest town in the south shore region, and it plays a significant role in the community as a location of employment, schools, hospitals and healthcare facilities, retail, and municipal services. Since the late 1980s, the Town’s population has gradually risen, reaching 8,532 in 2016. CBCL Limited and Dr. Ahsan Habib undertook the feasibility study on behalf of the Town in 2017. By reviewing available information, and through holding public and stakeholder consultations, there was no doubt that the people living and working in the Town of Bridgewater were ready for a public transit service. As a result, the Town addressed this by creating a public transit system in the community, beginning in September 2017. The Town started out with a hybrid fixed route service focussing on all trips (including work and non-work trips). Two service routes, loop design and cross-loop design, were introduced to cover the major destinations in the community. Based on recommendations made in the feasibility study, the Town purchased a new gasoline-powered Community Bus, capable of holding up to 20 passengers.

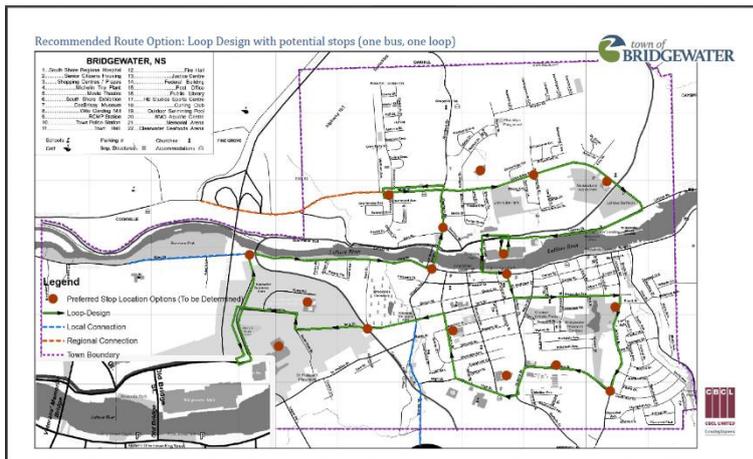


Figure 2.4: Transit Route, Bridgewater (One bus, one loop)

2.2.4 Town of Peace River, Alberta

With a population of 6,842, the Town of Peace River is a small town in northwest Alberta. The Town introduced a fixed-route public transportation system in 2005. It consisted of a single bus running a single route around the Town in a circuit. Due to excessive expenses, it was phased out in 2011. The Town instead opted to transition to subsidized taxi tickets. Individuals acquire tickets from the municipality, which may subsequently be used in ordinary taxis. One taxi pass ranges in value from \$2.50 or \$5, depending on the distance travelled under this new system. Taxi companies decide whether or not to honour the taxi passes. Only students, low-income individuals/families, elderly residents, and those living with physical or mental disabilities are eligible to purchase the passes. Users are allowed to purchase 40 tickets for \$30 every four weeks.

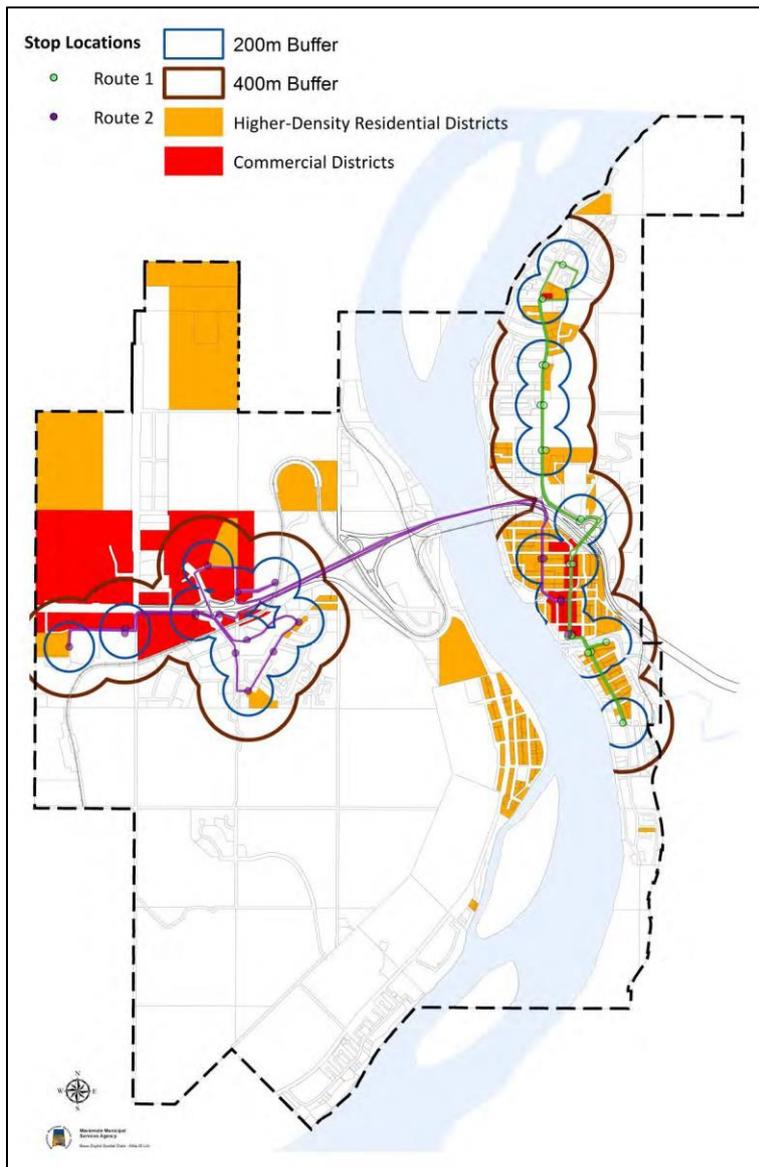


Figure 2.5: Transit Route, Town of Peace River

2.2.5 Sou’West Nova Transit Association (SWNT), Nova Scotia

SWNT is a non-profit, philanthropic organisation that has been providing point-to-point transportation to people in Shelburne County since 2012. It is not directly linked with a municipal entity, unlike the other instances presented thus far. SWNT is available to all Shelburne County residents, however it prioritises those it deems to be “particularly in need.” Subsidies are offered to individuals who meet this criteria. SWNT offers an alternative to the typical taxi-bus service. Since it is mostly a volunteer organisation, the number and type of vehicles it can deploy are limited. SWNT has one taxi-bus, which is supplemented by a dozen volunteer drivers who drive their own cars. The number of paid personnel, such as dispatchers and bus drivers, is limited due to budget restrictions. As a result, customers must book at least 24 hours ahead of time. The service is delivered right to your door. Users pay \$0.50 per km, with a one-hour free errand period included between return journeys to allow for shopping, with the option to pay for a longer duration (\$5 per 15 minutes). There is no time limit on how long you can wait to return from a medical visit.

2.2.6 Norfolk County, Ontario

Ride Norfolk provides standard fixed-route bus service to residents of Norfolk County. It is remarkable for employing a fixed-route approach in a predominantly rural environment with dispersed suburban settlements. There is no need to register or make a reservation as it is a fixed-route system. Users pay \$2.50 for journeys inside Simcoe (the primary population centre) and \$6 for journeys between communities. There are discounts for seniors, and children under the age of five are free to travel. The Norfolk system is also unique in that its timetable is very flexible. The buses serve a different group of communities each weekday, with Simcoe as the hub. Simcoe's service is available Monday through Friday. On weekends, there is no service on any route.

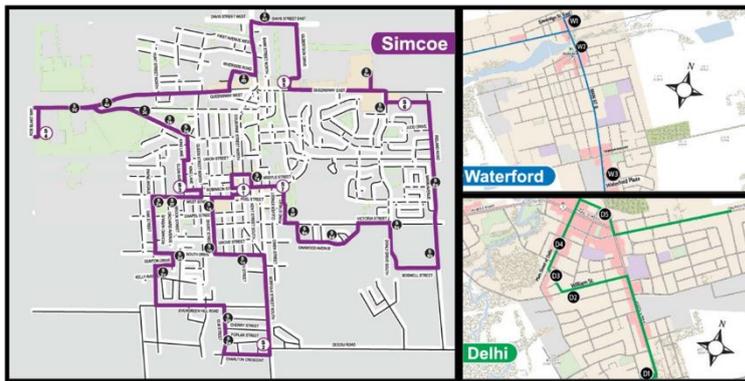


Figure 2.6: Transit Route, Norfolk

2.2.7 Hinton, Alberta

Hinton is a town in west-central Alberta with a population of 9,882. The public transit service in Hinton is a small bus that operates on a loop style route, running every hour. The bus service is reduced during July, August, Spring Break, and Statutory Holidays when demand falls and is insufficient to warrant service. In addition, no service is offered on non-school Fridays. The Town of Hinton provides a Handi-bus service in addition to the fixed route service.

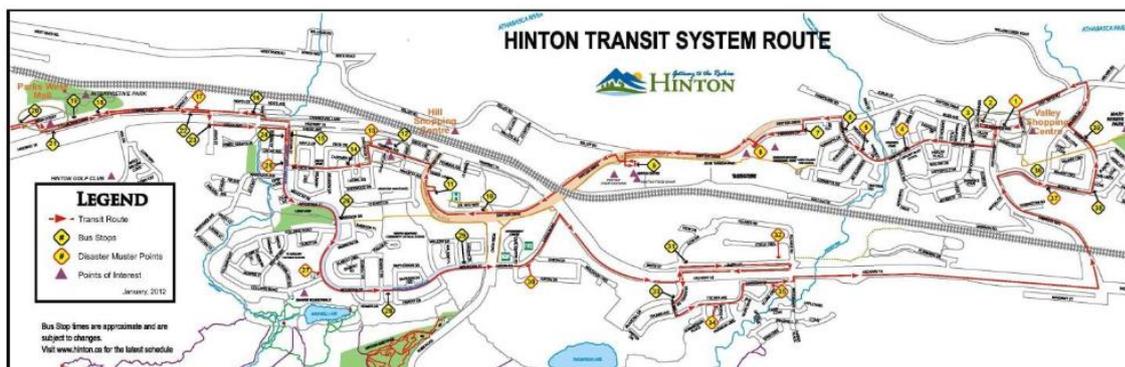


Figure 2.7: Transit Route, Hinton

2.2.8 Whitecourt, Alberta

Whitecourt is a town in central Alberta within Woodlands County. The Town has a population of 10,574 with valley topography creating two distinct areas. The Town of Whitecourt operated a Dial-A-Bus Transportation Program for seniors, and persons living with disabilities prior to the implementation of a new public transit service in September 2014. The new route provides service throughout the valley

and hilltop areas of Whitecourt and follows a 25 km loop throughout town that takes approximately one hour to complete.

The transit feasibility studies conducted for the existing services elsewhere in Canada outlined above argued that public transit systems should be accessible to people of all ages and all income levels, and they should provide reliable and efficient service that is easy to navigate. This review of best practices also demonstrates that key destinations of the municipality should be connected by the transit service. To receive the benefits of public transit, careful design and study should be undertaken, with consideration of the existing conditions of the town, such as the average traffic volume, any existing active transportation networks, and the opportunities and challenges of public transit in the specific community in question. Following on the work done in communities of comparable size that have implemented a transit system, this current report addressed each of these considerations in turn. It is expected that, as was seen elsewhere, public transit in the Happy Valley-Goose Bay area would increase mobility for residents and increase economic growth.

CHAPTER 3: SURVEY RESULTS ANALYSIS

This section summarizes the results of the Happy Valley-Goose Bay transit feasibility survey conducted in June and July of 2021. This survey was designed to capture an overview of current travel behaviour in the community in order to provide insight into the present and future need for public transit in the Town. Participation in this type of transportation-specific survey was new for the community of Happy Valley-Goose Bay. Town staff shared the survey through a public service announcement to encourage participation, and as a result of effective promotion, the survey received 384 responses. The results of this effective data collection effort are expanded upon in detail below. The recommendations made in this report for a possible transit route in the Happy Valley-Goose Bay area were profoundly shaped by this community engagement.

3.1 Demographic Characteristics

3.1.1 Household Demographics

Household demographics were divided into two sub-sections: household size and household income. A brief description of each is given below.

Household Size

The survey shows that the average household size in Happy Valley-Goose Bay is 2.7 people. Figure 3.1 shows the distribution of household sizes across the community. A plurality of households (37.28%) have two people and 14.47% of households in Happy Valley-Goose Bay have only one person. Moreover, a significant percentage (35.98%) of households have three or four members.

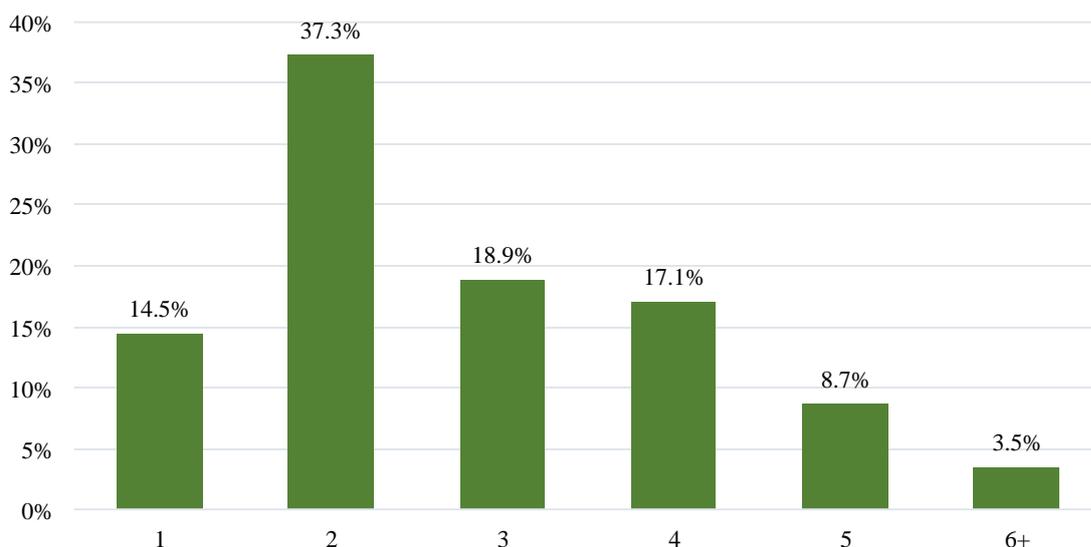


Figure 3.1: Household size (# people) distribution

Household Income

Figure 3.2 shows the distribution of household income across the community of Happy Valley-Goose Bay. The highest proportion of household income (17.90%) lies within the income range of \$50,000-\$74,999 and the lowest percentage (6.11%) is in the income range of above \$200,000.

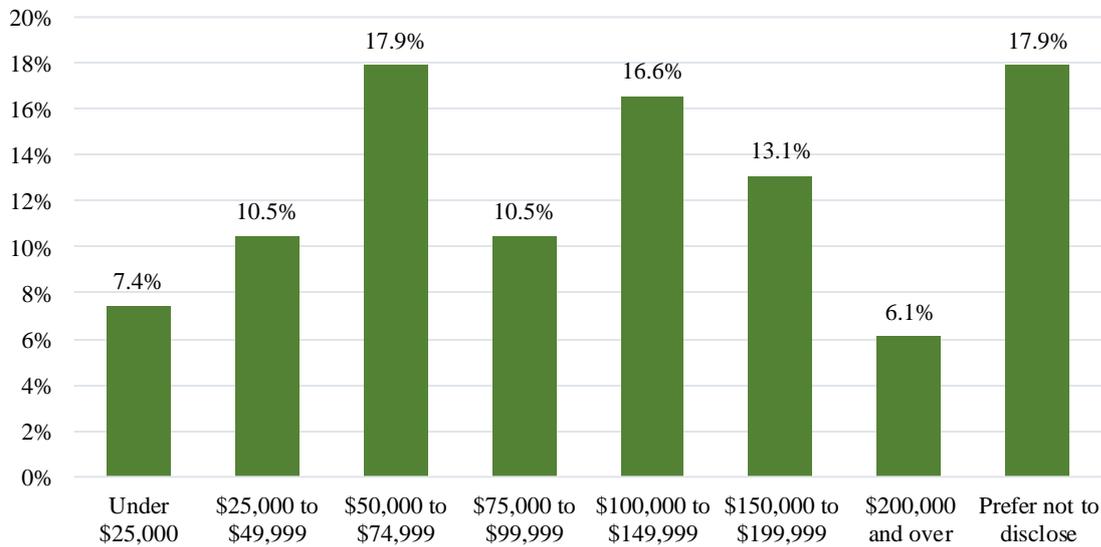


Figure 3.2: Household income distribution

3.1.2 Individual Demographics

This section collected data on three aspects of each individual survey participants’ personal information: employment status, age, and gender.

Employment Status

The level of employment of Happy Valley-Goose Bay residents is shown in Figure 3.3. Among the respondents, 76.86% are full-time employees whereas only 4.80% are working as part-time employees.

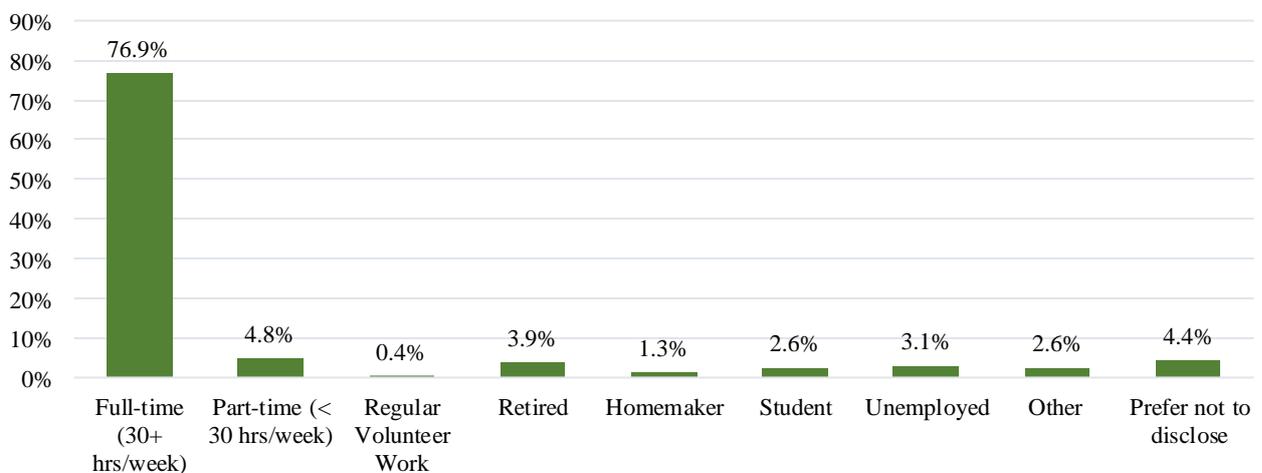


Figure 3.3: Respondents’ employment type

Age

Most respondents are between the ages of 25 and 54 (Figure 3.4). This is the most common age for the working population. As there were limited persons who identified as a student, it is not surprising to see a low percentage (8.30%) of people 24 and younger.

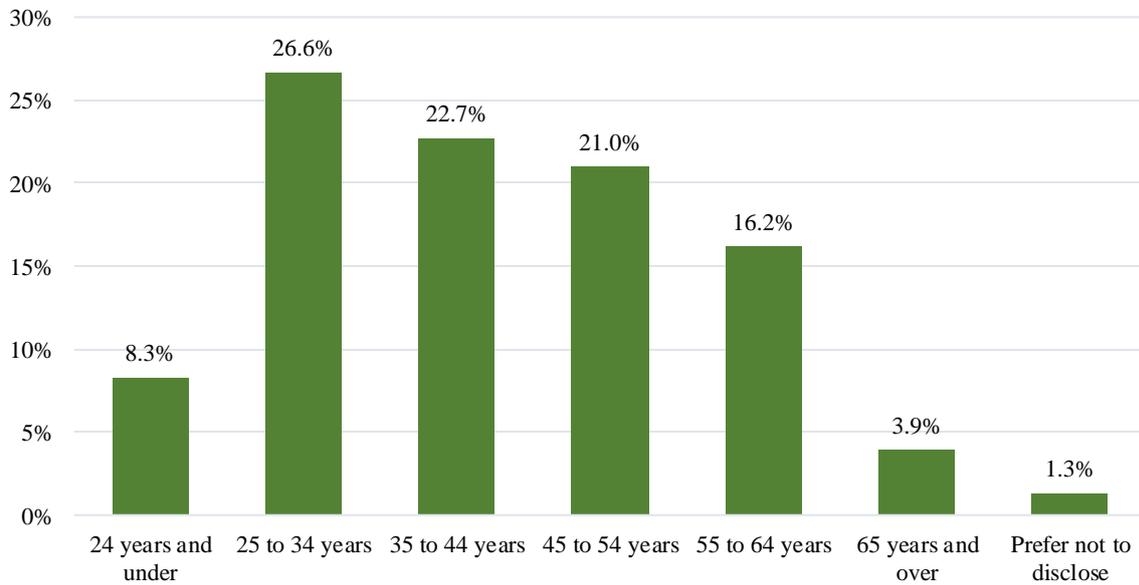


Figure 3.4: Respondent's age distribution

Gender

Women made up roughly two-thirds of the total respondents and almost 35% more than male respondents (Figure 3.5).

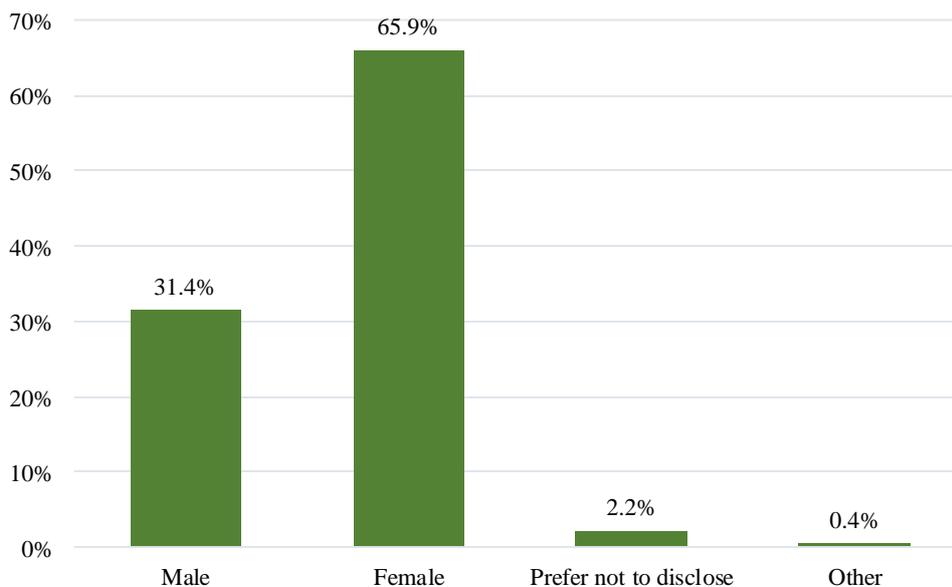


Figure 3.5: Respondent's gender distribution

3.2 Mobility Tool Ownership

3.2.1 Vehicle Access

Nearly 85% of survey respondents own a vehicle and about 11% can access a vehicle either through a car share membership or by borrowing one (Figure 3.6).

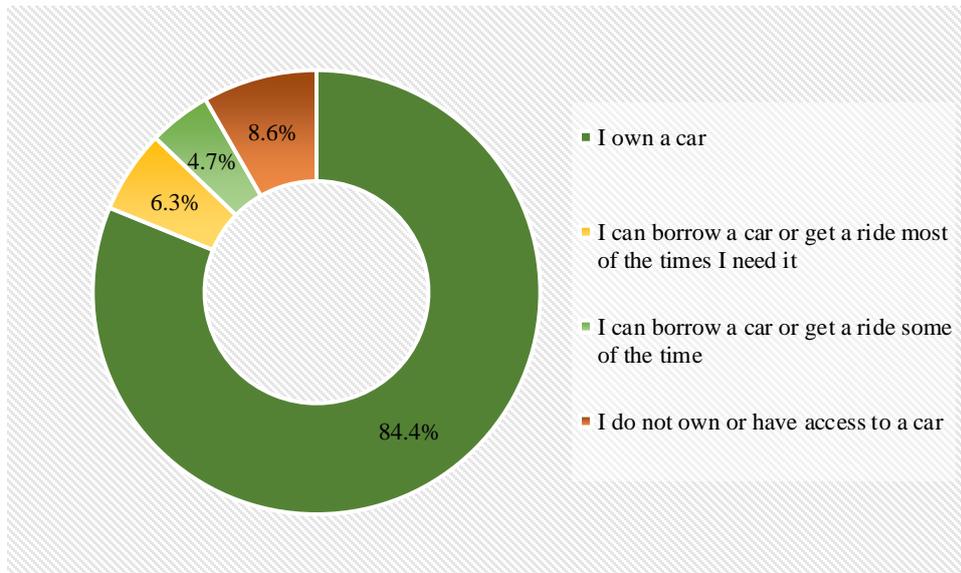


Figure 3.6: Vehicle access distribution

3.2.2 Vehicle Ownership

Nearly 10% of survey respondents stated that they do not own a vehicle (Figure 3.7). Most respondents own one vehicle (49%) but about 30% stated that they own two. A few respondents (11%) own three or more vehicles.

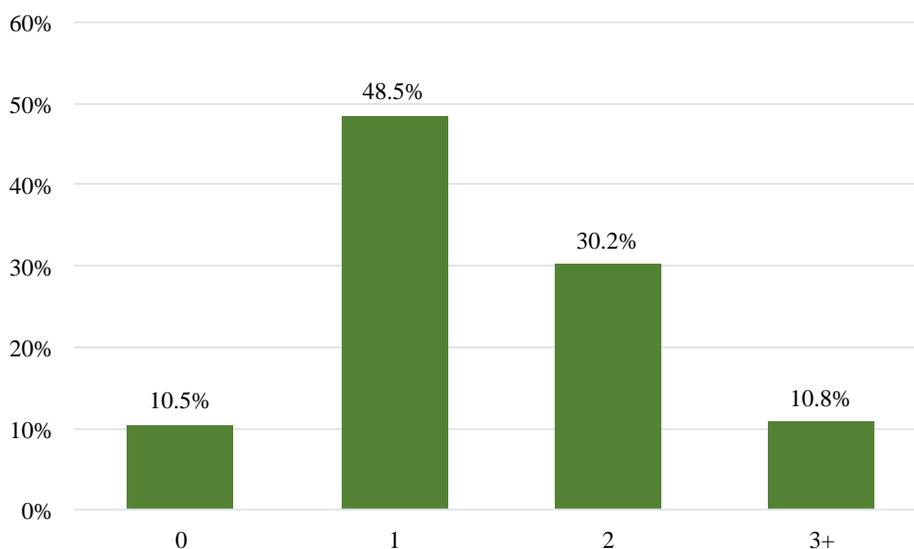


Figure 3.7: Vehicle ownership distribution

3.2.3 Bicycle Access

Figure 3.8 illustrates the distribution of bicycle access in the community of Happy Valley-Goose Bay. Nearly 60% of respondents either have their own bicycle or have the opportunity to borrow a bicycle when needed.

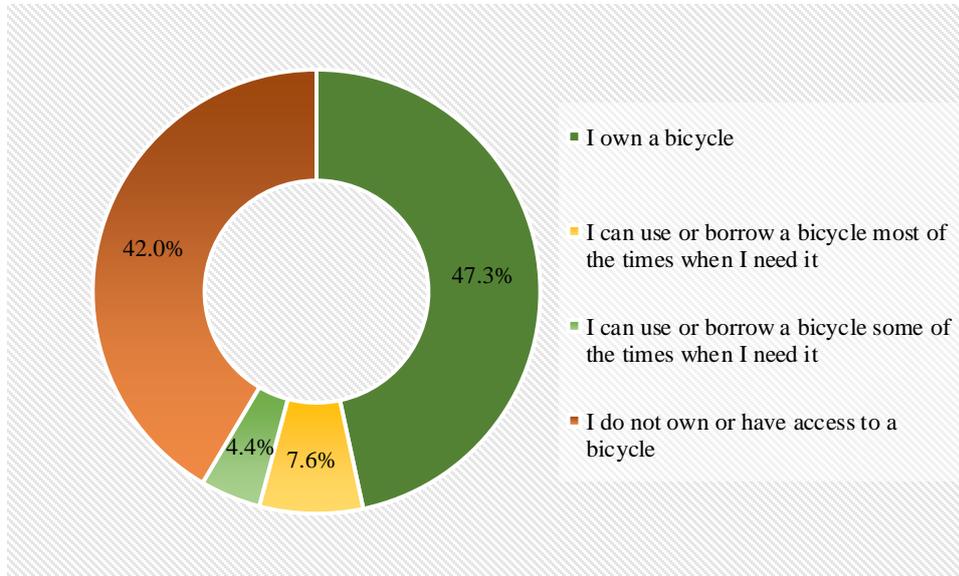


Figure 3.8: Bicycle access distribution

3.3 Travel Behaviour

3.3.1 Primary Mode

A primary mode of transportation is classified as a mode that is used by the residents of Happy Valley-Goose Bay 70% of the time or more. Almost 90% of survey respondents commute using an automobile, either alone or as a passenger (Figure 3.9). A very small proportion of respondents use a bicycle as their primary mode of transportation for commuting, and 5.63% of respondents prefer walking. Furthermore, it is interesting to note that about 78% of Happy Valley-Goose Bay commuters drive alone when commuting.

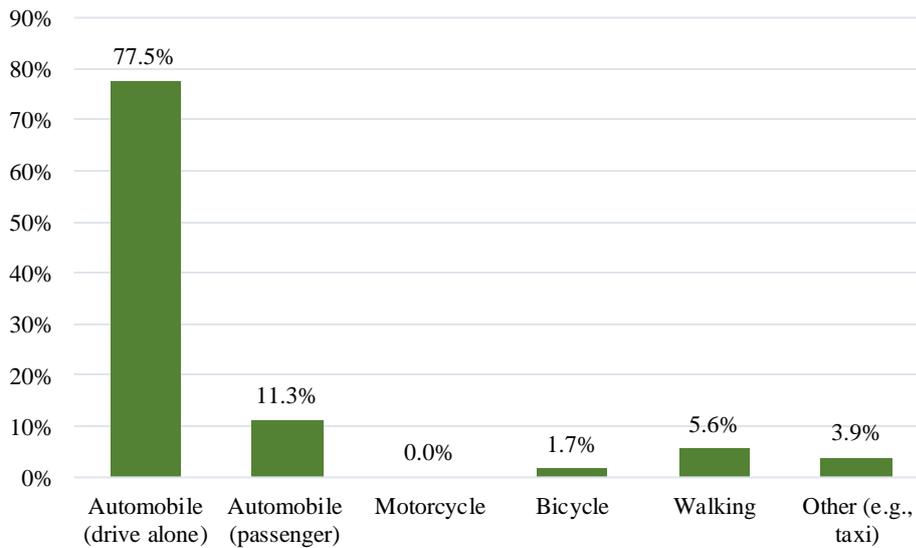


Figure 3.9: Distribution of primary commute mode

3.3.2 Secondary Mode

A secondary mode of transportation is classified as a method of transport that is used less than 30% of the time. Most respondents stated that they always use their primary mode (Figure 3.10). This is comparable to other transportation surveys conducted in communities similar to Happy Valley-Goose Bay. For those who did indicate a secondary mode of transportation, an automobile usage still led the results, with more respondents indicating they commute as a passenger than in the primary mode results above. Interestingly, the proportion of respondents who walk for their commute increased by about 20%. This indicates that there are a fair number of respondents who would be willing and are able to walk for their commute trips.

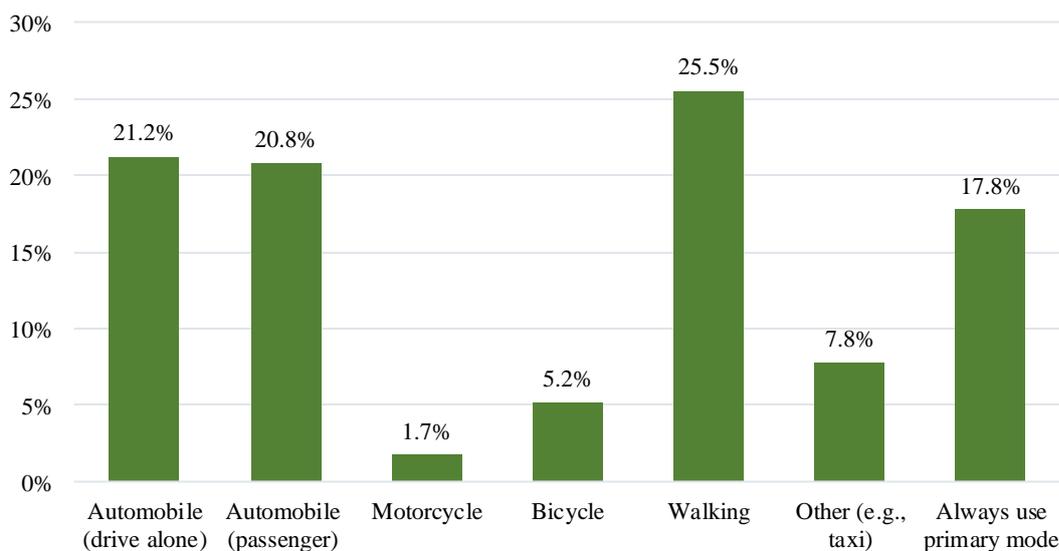


Figure 3.10: Distribution of secondary commute mode

3.3.3 Commute Distance

Respondents were asked to report the distance of their typical weekday commute in kilometers. Figure 3.11 shows that about 54% of respondents' commute distances are 10 km or less, which is conducive to public transit usage. In contrast, almost 25% of respondents commute 30 km or more and this therefore increased the average commute distance to 34.04 kms.

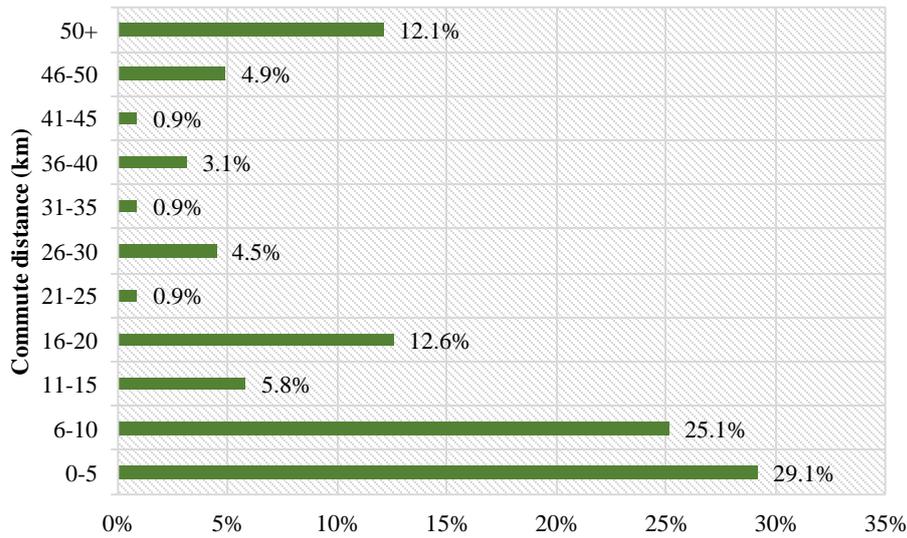


Figure 3.11: Distribution of commute distances

3.3.4 Commute Frequency

Figure 3.12 illustrates the commute frequency for residents of Happy Valley-Goose Bay. The purpose of trips is categorized as follows: 1) work and work activities; 2) school and school activities; 3) shopping; 4) health care; 5) personal business; 6) recreation; and 7) other. The results indicate that most trips (39.2%) are related to personal business, followed by 22.5% work/work activities.

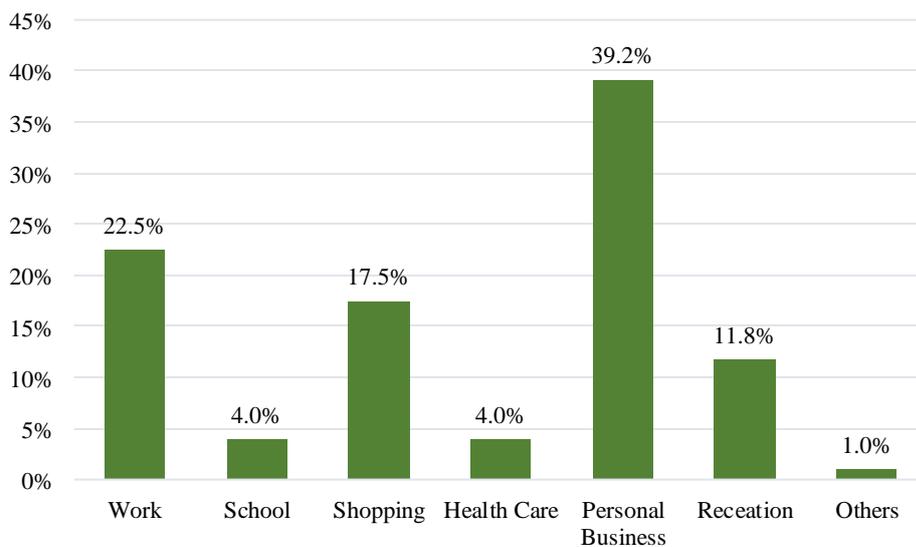


Figure 3.12: Distribution of commute frequency

3.3.4 Travel Accompaniment

Figure 3.13 shows the distribution of who respondents’ travel with when commuting. Most trips are made with either two members of the same immediate family, such as partners, or alone. The breakdown is as follows: almost 42% commute alone; 30% commute with their spouse/partner; and 4% report commuting with friends or co-workers.

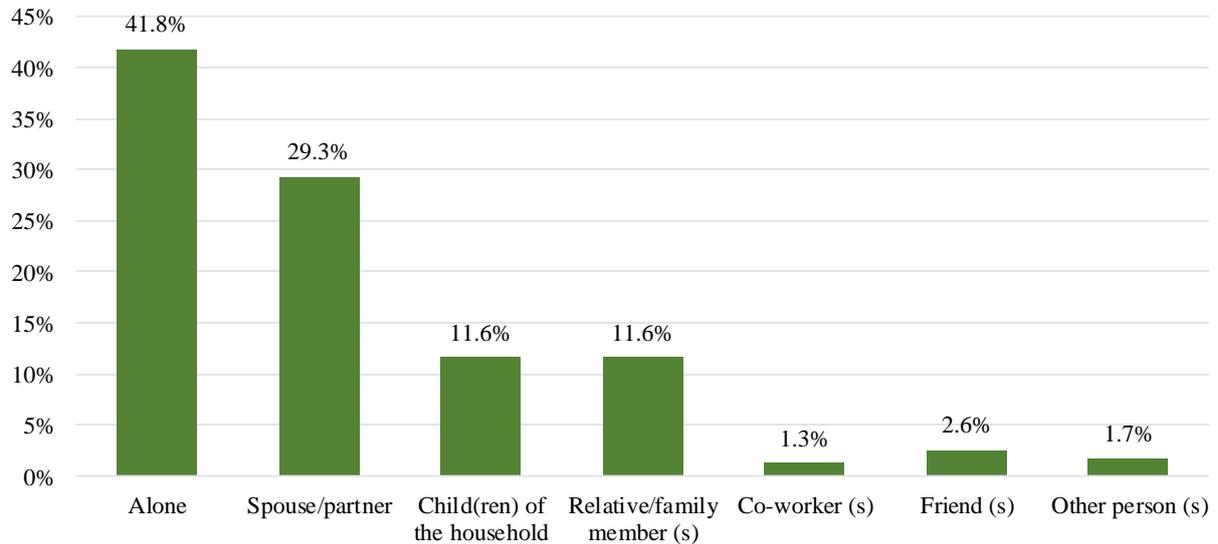


Figure 3.13: Distribution of travel companion

3.4 COVID-19 and Travel

3.4.1 Travel Behaviour

Respondents were asked if their commuting habits have changed as a result of the COVID-19 pandemic. Just 44% of respondents reported that the pandemic has changed their commuting habits, whereas 53% of respondents answered that they did not experience any change in their commuting habits during the pandemic (Figure 3.14).

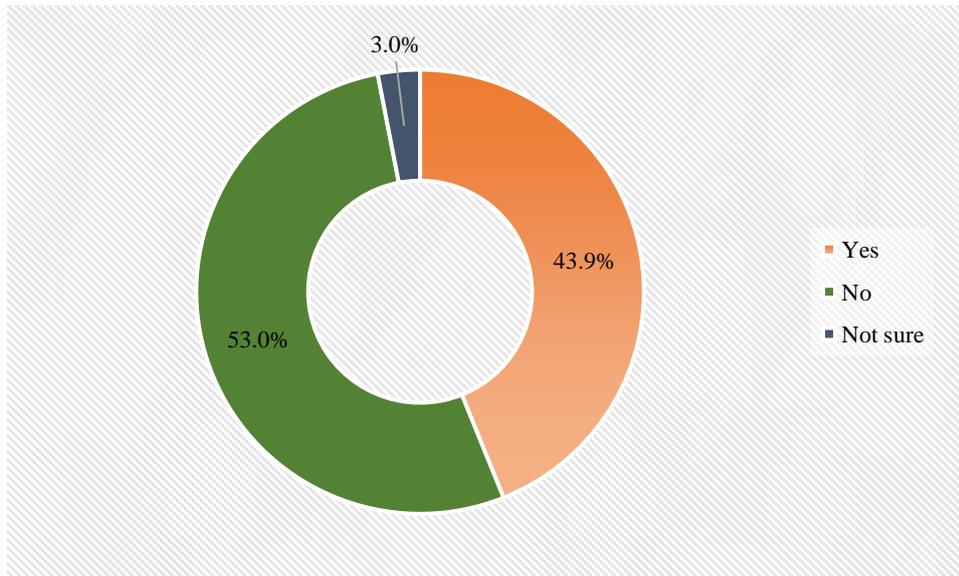


Figure 3.14: Changes in respondents' commute

Respondents were asked the types of changes that they saw in their travel behaviour as a result of the COVID-19 pandemic (Figure 3.15). More than 35% survey respondents reported that the biggest change was that they are either fully or partially working from home. Very few respondents moved closer to their workplace as a result of the pandemic.

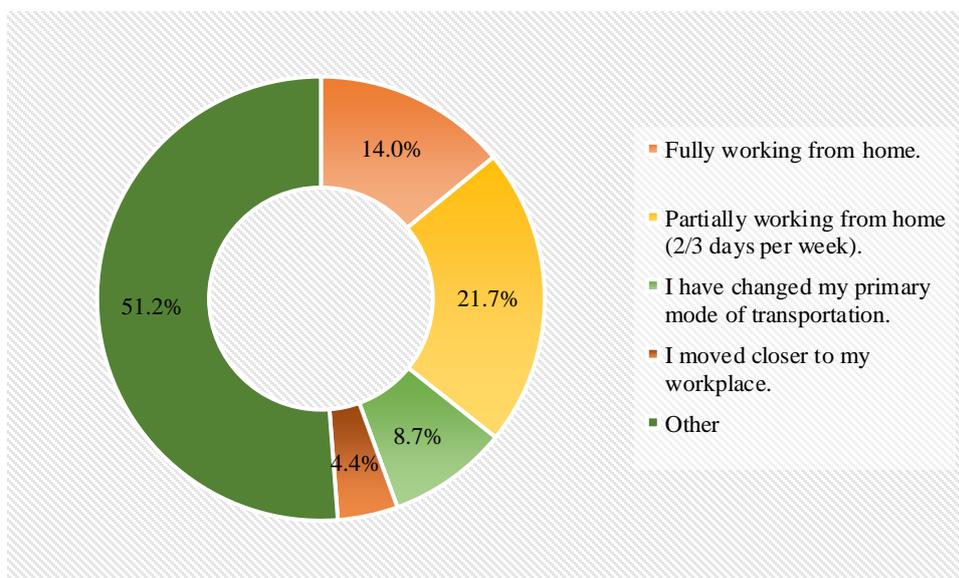


Figure 3.15: Types of changes to respondents' commutes

3.4.2 Primary Mode of Commute since COVID-19 Pandemic

Although travel needs changed for many respondents over the course of the COVID-19 pandemic, most indicated that their primary mode of transportation for commuting has not changed from prior to the onset of the pandemic. However, two minor changes worth noting are that walking has increased by about 3%, while driving alone has increased by about 2% (Figure 3.16).

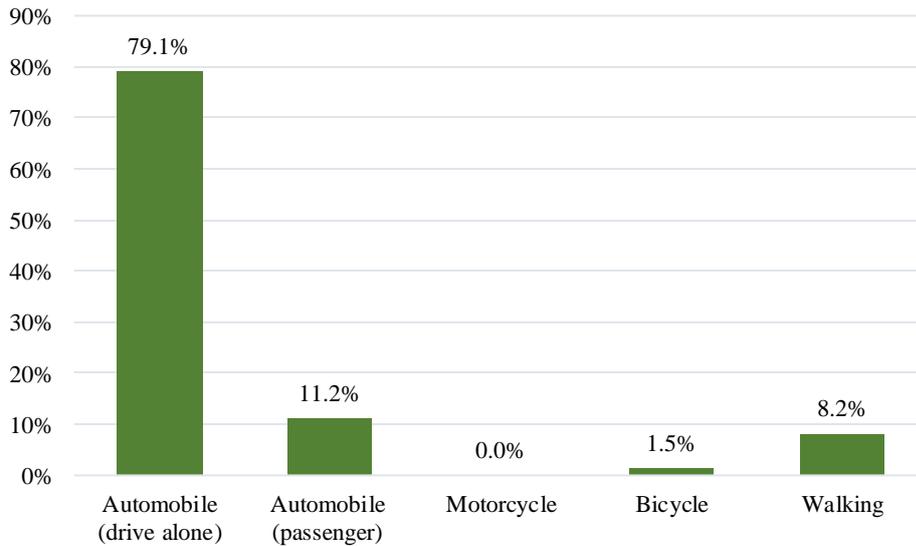


Figure 3.16: Primary mode of commute during the COVID-19 pandemic

3.4.3 Commute Frequency during Pandemic

Figure 3.17 shows the change in commute frequency of survey respondents during the COVID-19 pandemic. As most respondents indicate below, COVID-19 has not had any impact on their travel frequency. The largest share of respondents’ commute daily (55.26%), while 20.18% of respondents commute 3-4 times a week.

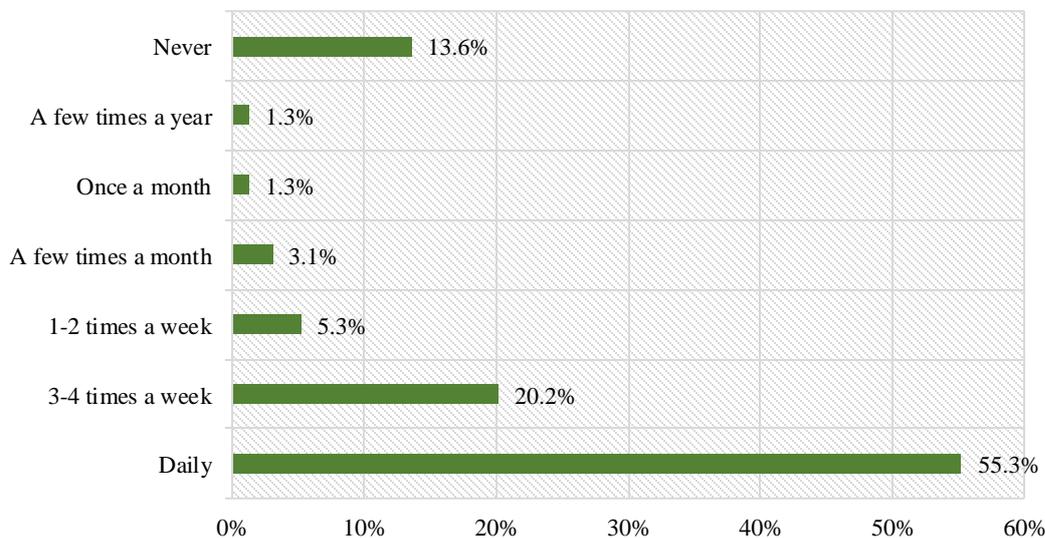


Figure 3.17: Distribution of commute frequency since lockdown

3.5 Findings for Future Public Transit:

3.5.1 Awareness of Transit Systems

A public transit system is not currently available in the Town of Happy Valley-Goose Bay. Survey respondents were asked if they are aware of any existing operational transit systems elsewhere in

Canada. The majority of respondents do not know or are unsure about any existing Canadian transit systems (Figure 3.18).

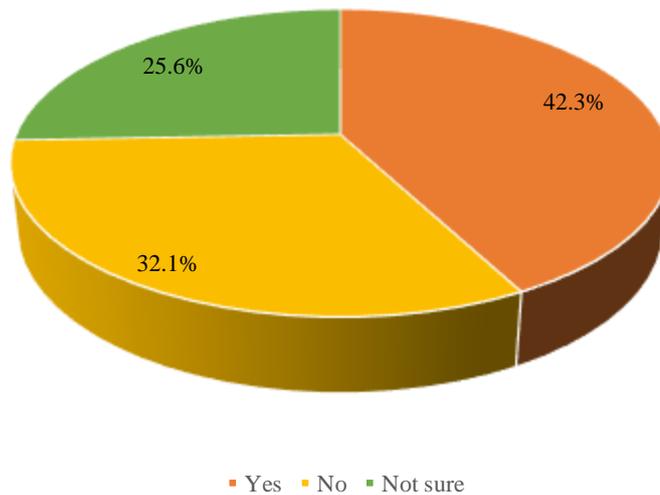


Figure 3.18: Awareness of transit systems

3.5.2 Benefits of Public Transit

Respondents were asked to list what their top three reasons for using a potential public transit system would be. Figure 3.19 shows a ranking of the top ten benefits of a potential public transit system, according to survey respondents. The top three benefits are that public transit is “Accessible,” “Safe,” and “Affordable.”

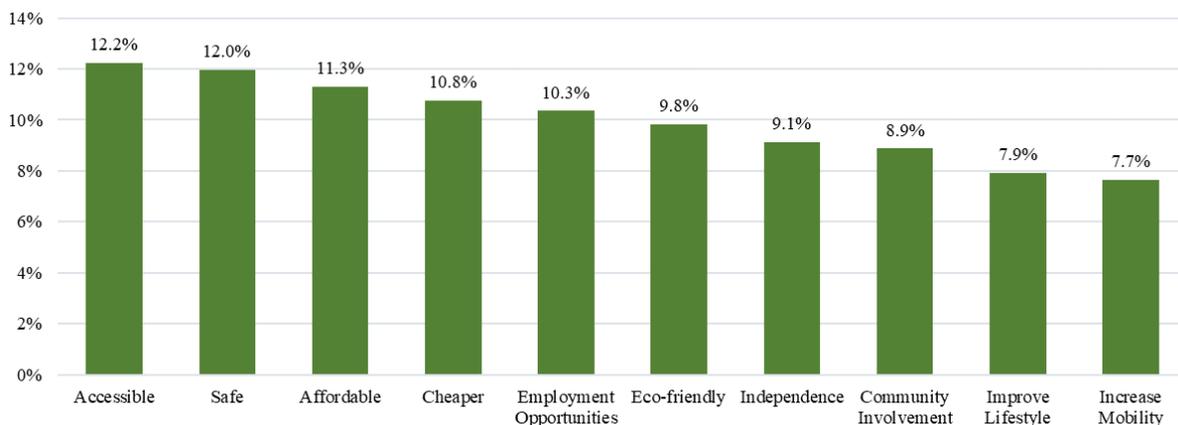


Figure 3.19: Most frequent words in selected benefits

3.5.3 Barriers to Implementing Public Transit

Survey respondents were also asked about barriers to the implementation of public transit in the community of Happy Valley-Goose Bay. The top ten barriers identified are ranked below in Figure 3.20.

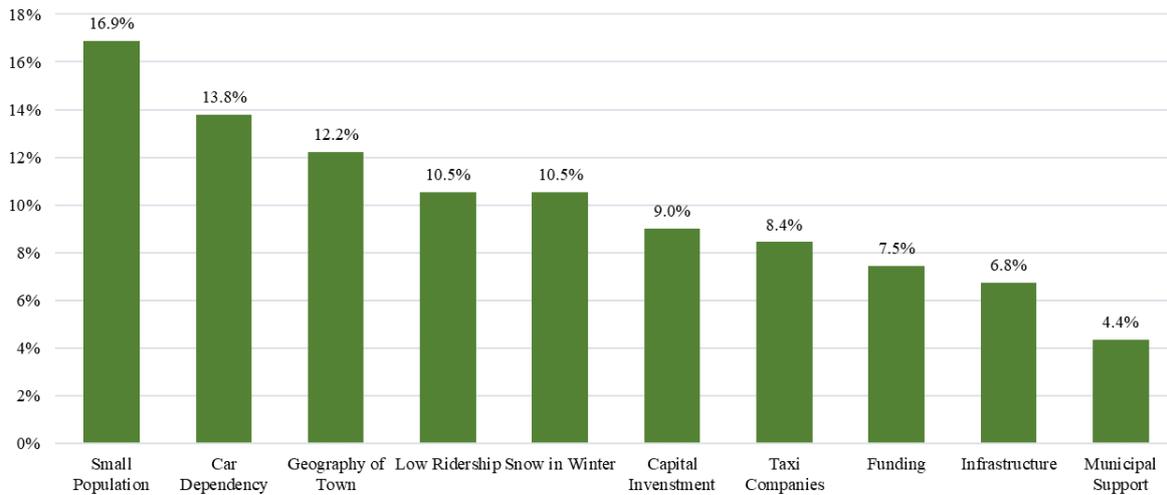


Figure 3.20: Most frequently selected barriers to implementation of public transit

3.5.4 Relationship with Strategic Plan of Happy Valley-Goose Bay

The Town of Happy Valley-Goose Bay has a strategic plan for the years of 2017-2022, which acts as a roadmap to inform decision-making, public spending, and policy directives. It also aids in the articulation of a common vision for all members of the community. This strategic plan consists of five different strategic directions for the community of Happy Valley-Goose Bay: 1) economic vibrancy, 2) quality of life and inclusivity, 3) infrastructure renewal, 4) municipal leadership, and 5) environmental stewardship. Survey respondents were asked how each of these five strategic directions are related to the potential public transit system under consideration. 28% of respondents indicated that a public transit system will enhance the quality of life in Town and make the community more inclusive. 19% of survey respondents indicated that the implementation of a public transit system would positively contribute to the economic vibrancy of the community (Figure 3.21).

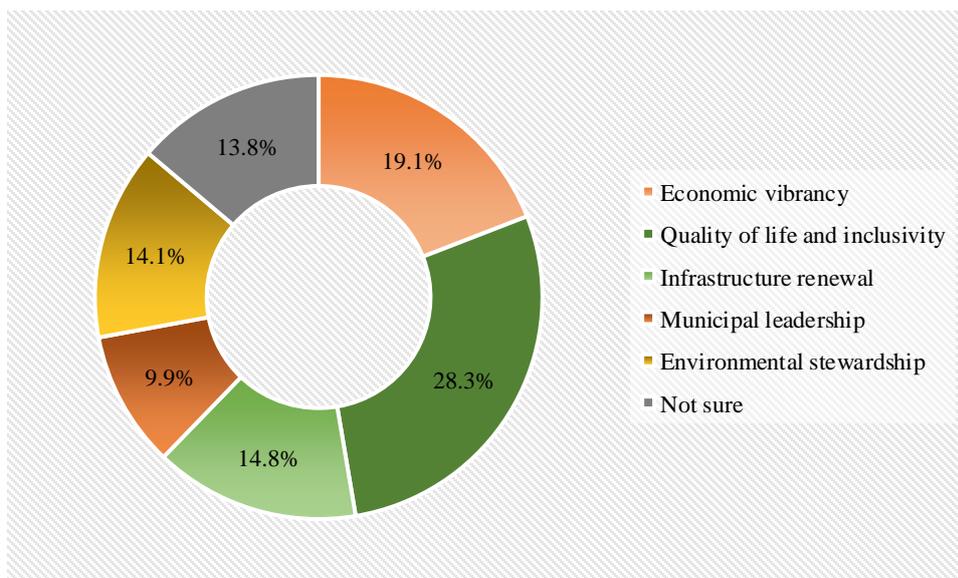


Figure 3.21: Correlation with the strategic plan of Happy Valley-Goose Bay

3.5.5 Willingness to Ride in Public Transit

Figure 3.22 illustrates how nearly 50% of survey respondents are either likely or very likely to ride a potential public transit system in Happy Valley-Goose Bay, with 11% indicating that they do not have any interest in riding public transit.

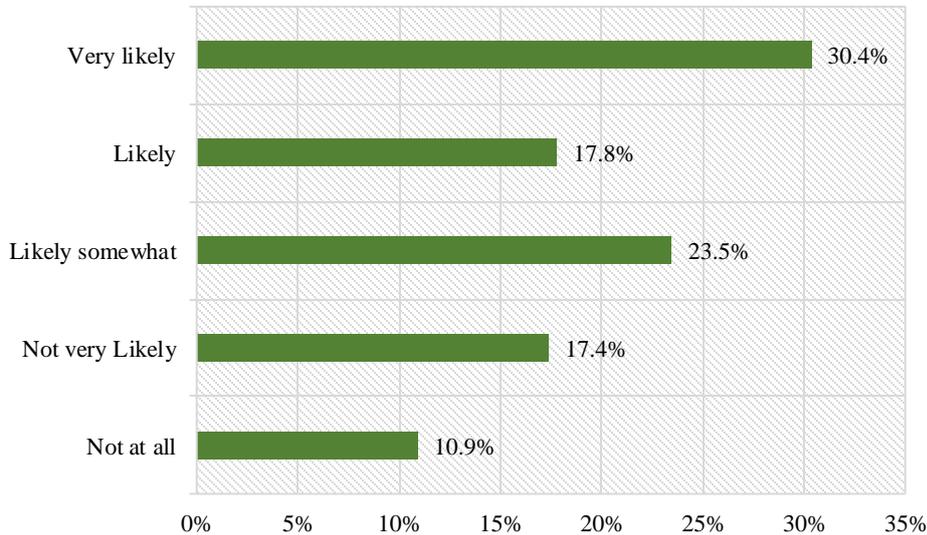


Figure 3.22: Willingness to ride public transit

3.5.6 Willingness to Pay for Public Transit

Respondents were asked how much they would be willing to pay per trip on a potential public transit service in Happy Valley-Goose Bay. More than 60% are willing to pay between \$2 to \$4 (Figure 3.23). This price range is reasonable in comparison to other public transit systems in small communities studied in this report, such as the Town of Yarmouth.

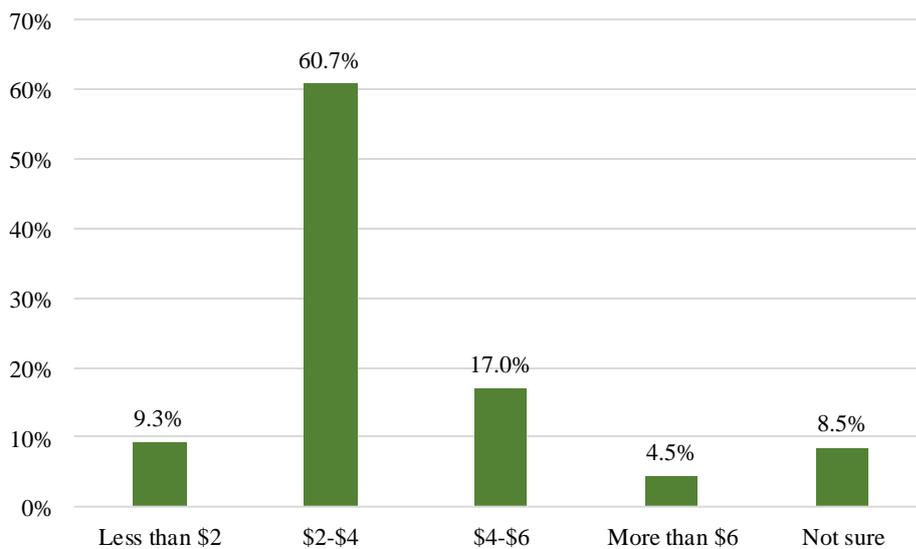


Figure 3.23: Willingness to pay for public transit

3.5.7 Frequency of Public Transit

Figure 3.24 illustrates that 22.67% of survey respondents expect transit to arrive every half an hour. 42.51% are happy to have a transit arrive once every hour.

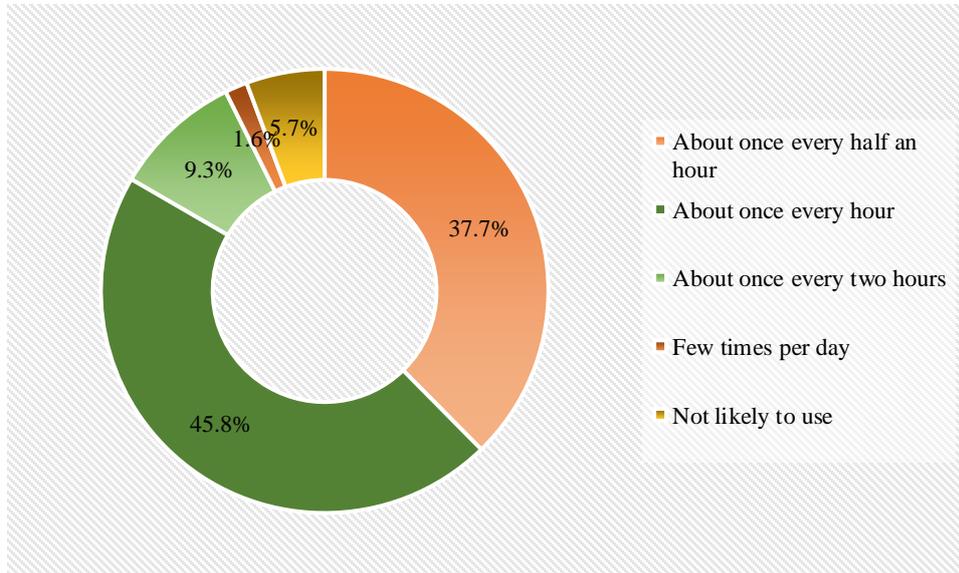


Figure 3.24: Expected frequency of public transit

3.5.8 Willingness to Walk to Bus Stop

Figure 3.25 illustrates the willingness of respondents to walk to the nearest bus stop, and the length of time they would be willing to walk. Almost 84% of survey respondents are willing to walk 10 minutes or less to the nearest bus stop.

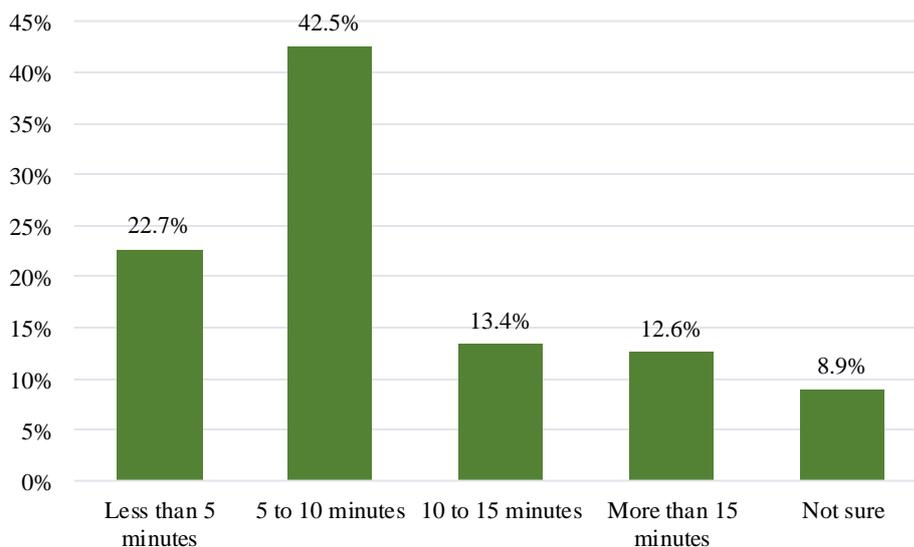


Figure 3.25: Willingness to walk to nearest bus stop

3.5.9 Expected Route Service Option

Generally, transit services can be operated in two ways: 1) on a fixed route, and 2) on a flexible route. Fixed route transit service means buses travel to permanent bus stops according to a permanent schedule. A flexible transit service does not include a permanent route for buses but is rather responsive to the demand for service on any given day. Survey respondents were asked to indicate their preferences for which style of service delivery they would like to see in the community of Happy Valley -Goose Bay and 53.44% preferred a fixed route transit service (Figure 3.26).

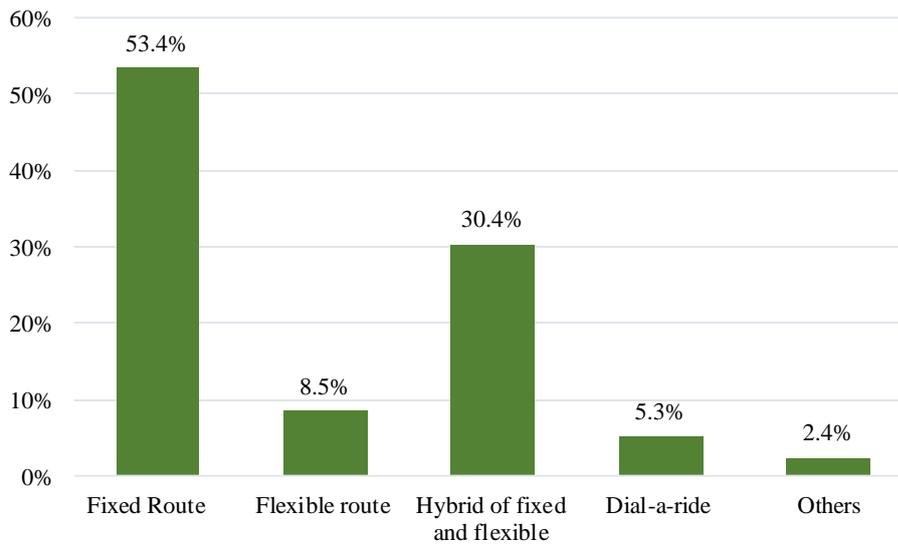


Figure 3.26: Expected route options for transit service

3.5.10 Expected Vehicle Option

Multiple vehicle options are compatible with public transit service delivery, such as large vans, community busses, small busses, and conventional busses. According to the survey responses, almost 75% of respondents prefer either a community bus with capacity for 10 to 20 passengers, or a small bus with capacity for 16 to 28 passengers (Figure 3.27).

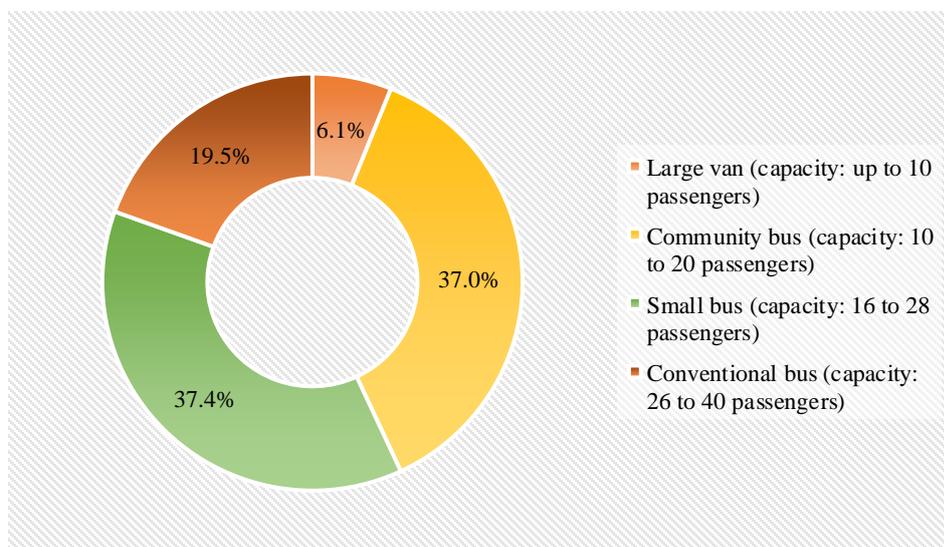


Figure 3.27: Expected vehicle options for transit service

3.5.11 Key Destinations

Figure 3.28 illustrates the priority destinations for potential public transit stops in the community of Happy Valley-Goose Bay, according to survey respondents. They were asked to locate five places that they would consider as essential for regular transit access.

The word cloud on the left depicts the words used most often as the first priority destination for public transit service. Similarly, the word cloud in the middle depicts the second most common priority destination, and the word cloud on the right depicts the third most frequently preferred key destination. The hospital, airport, and grocery stores are in all three clouds as the top three priority destinations for a potential public transit stop.

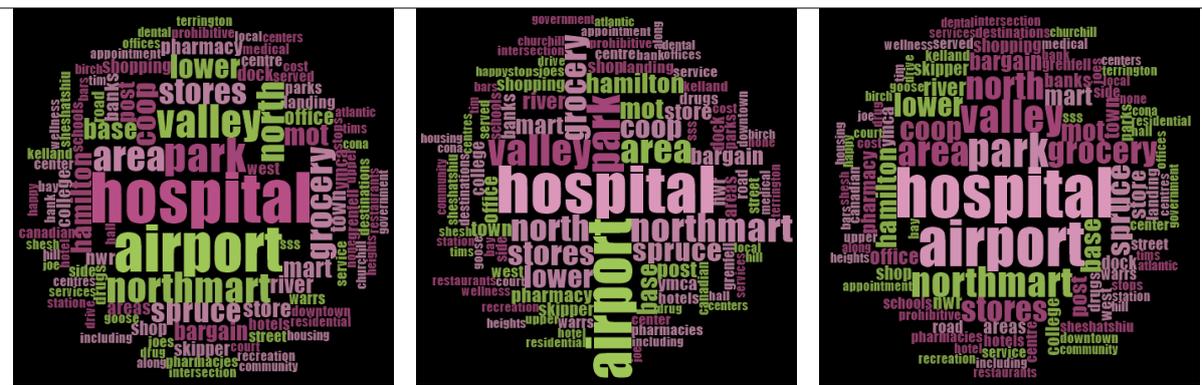


Figure 3.28: Priority destinations for survey respondents

3.5.12 Distance between Bus Stops

Placement of bus stops plays an important role in making any transit system effective, accessible, and user friendly. Figure 3.29 shows that nearly 70% of respondents want the distance between two bus stops to be 1 km or less.

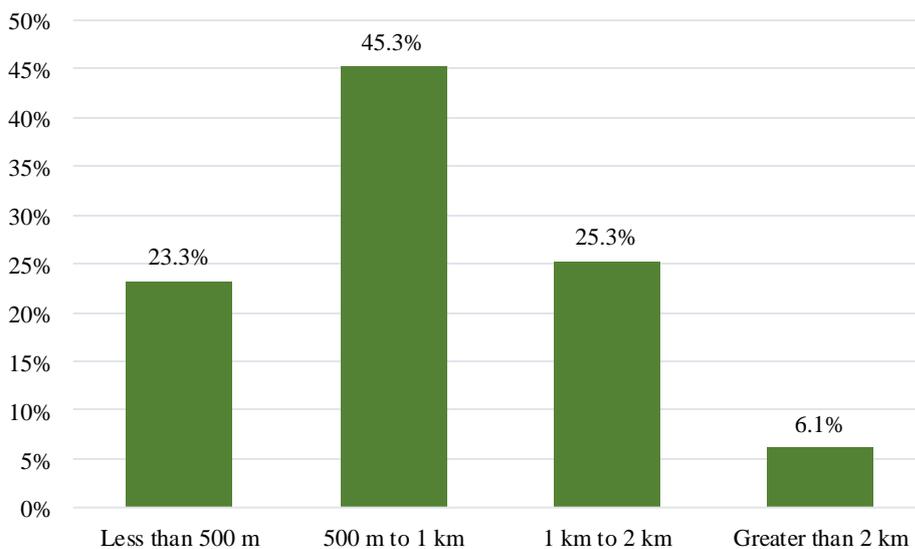


Figure 3.29: Expected distance between bus stops

3.5.13 Operational Model of Transit Service

Respondents were asked about the type of entity they would like to see operating a potential transit service in Happy Valley-Goose Bay. A majority (52.24%) preferred a publicly operated transit system, whereas a combined total of 40% chose either public-private ownership or non-profit organizations (Figure 3.30).

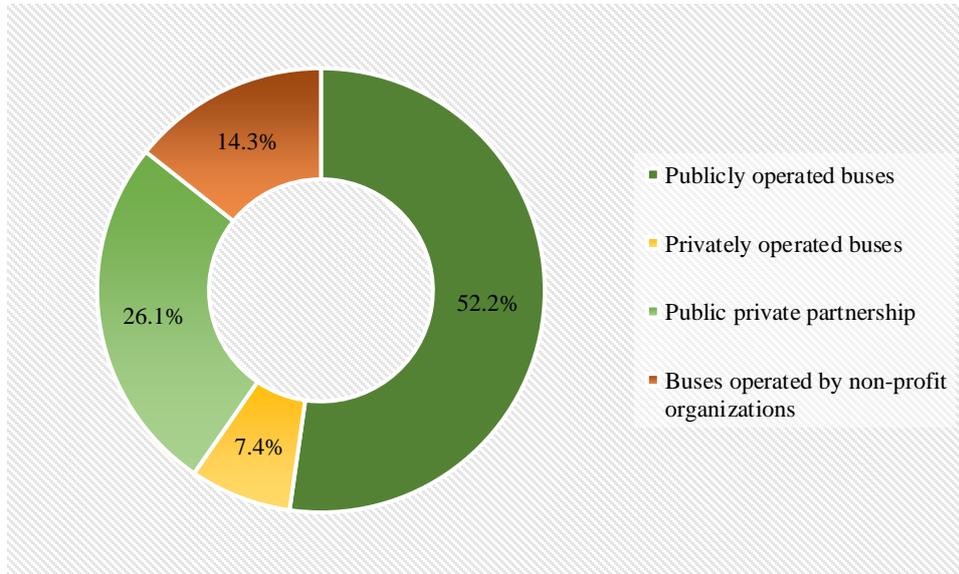


Figure 3.30: Expected operational model of transit service

3.5.14 Expected Fare Collection System

In terms of a fare collection system, the community of Happy Valley-Goose Bay showed interest in all possible options, such as cash, tickets, and smart cards (Figure 3.31).

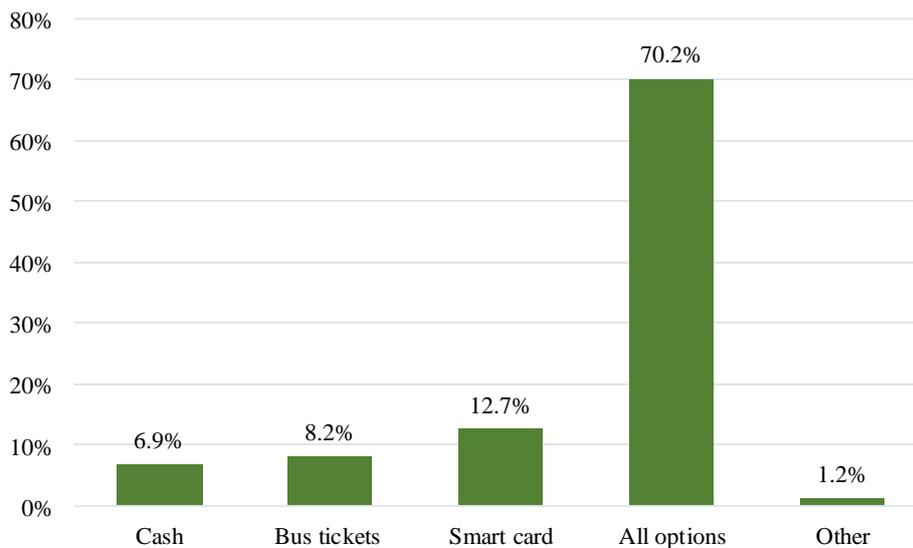


Figure 3.31: Expected fare collection system

3.5.15 Development of Tourism Sector

66.53% of survey respondents indicated that the implementation of a public transit system would support the tourism sector in Happy Valley-Goose Bay (Figure 3.32).

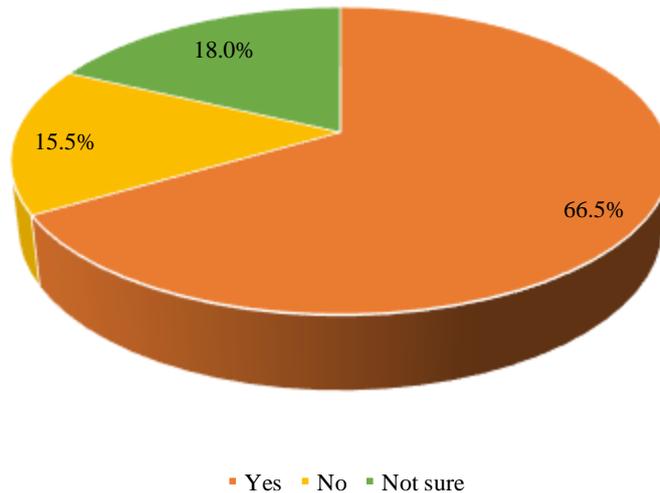


Figure 3.32: Correlation with tourism sector development

3.5.16 Development of Regional Transit Connectivity

The Town of Happy Valley-Goose Bay is located approximately 30 kms from two neighbouring communities, Sheshatshiu Innu First Nation, and the Town of North West River. The development of regional transit connectivity was a major feature under consideration in the design of this potential transit route. When asked, 20.49% of survey respondents indicated that they want a route within the municipal boundary of Happy Valley-Goose Bay only, while 69.67% of respondents preferred both a local option and a regional service option (Figure 3.33). We therefore recommend the sequential, phased implementation of both options, beginning with a municipal route and building to a regional route. Detailed descriptions of both recommended routes are provided in the next chapter of this report.

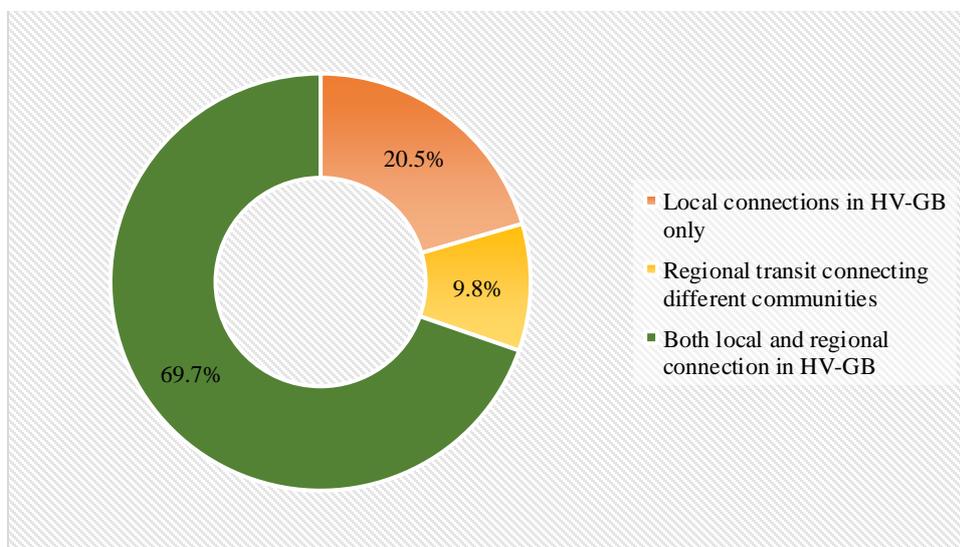


Figure 3.33: Expected transit connectivity

CHAPTER 4: FOCUS GROUP DISCUSSION

The next stage of the data collection process was a public engagement session with residents of the Town of Happy Valley-Goose Bay in order to better understand the level of community interest in a public transit service. As Happy Valley-Goose Bay does not currently have public transit, session participants were asked about the advantages they anticipated for themselves, their families, and their community at large should a system be implemented. The goal of the session was to develop the guiding principles for a local transit system in Happy Valley-Goose Bay. The second portion of this consultation stage was the distribution of an online map tool for residents to draw their own ideal transit route. This was distributed to the public by Town staff following the focus group discussion.

4.1 Overview

On August 5, 2021, a virtual community focus group entitled “Town of Happy Valley-Goose Bay's Public Consultation Session on Potential Transit Service” was held using Zoom, the video communication tool. A total of 14 people in the community, including the host and interns, participated in the focus group discussion and mapping activities (see **APPENDIX B: Focus Group Discussion materials**). The focus group discussion was divided into two halves: the first explored the community's views regarding public transportation being implemented in the Town of Happy Valley-Goose Bay, while the second allowed participants to design their own ideal transit service on a map.

4.2 Goals

Dr. Ahsan Habib delivered a short presentation at the start of the focus group session that included an overview of this feasibility study, the partnership with the Town, as well as the specific aims and objectives of the session itself. The goals of the focus group discussion were to facilitate interactive and lively discussions about whether a transit system is suited and needed for the Town of Happy Valley-Goose Bay, to gather community feedback on what the guiding principles, design, and technological features in any new system should be, and identify possible route options.

4.3 Process

During the first half of the session, the focus group participants individually identified existing issues with transportation in the Town of Happy Valley-Goose Bay. They then discussed as a group how public transit could benefit themselves, their families, and the community at large, and what guiding principles they would like to see implemented in the potential transit service. In the second half of the session, the participants were asked to draw transit routes and stops throughout Town and discuss what design features they would like to see within a public transit service in Happy Valley-Goose Bay. Figure 4.1 is the agenda for this community focus group session.

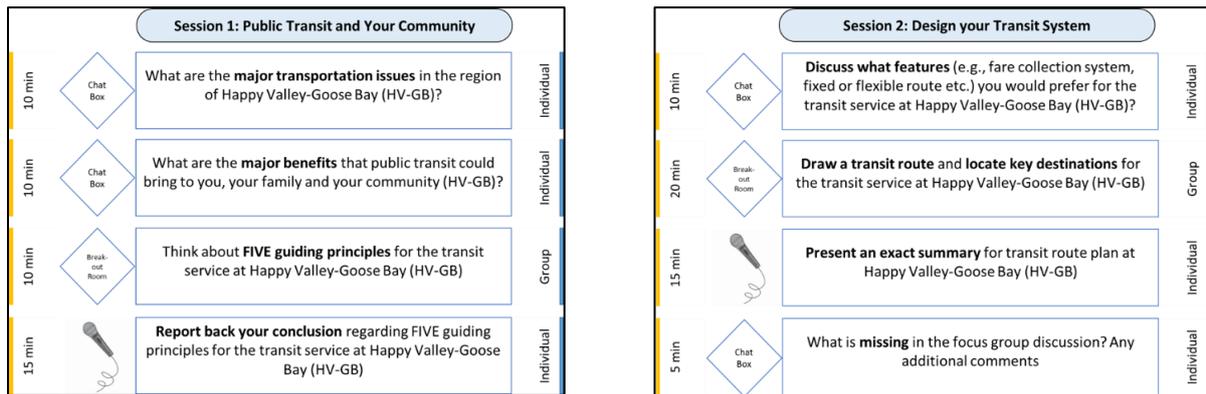


Figure 4.1: Study design of focus group discussion

4.4 Major Findings

A consensus emerged from the focus group participants that a public transit service in the Town of Happy Valley-Goose Bay would be desirable and beneficial for the community. An analysis of all the responses to the discussion questions in Figure 4.1 are summarized below.

4.4.1 Transportation Issues

The participants were asked to discuss: “What are the major transportation issues in the region of Happy Valley-Goose Bay (HV-GB)?” Four common themes emerged from this discussion. According to the participants, the major transportation issues are as follows:

1. No reliable public transit system in the Town of Happy Valley-Goose Bay
2. The only existing transportation option is a taxi, and they are very costly
3. Limited active transportation infrastructure (walking and biking)
4. Existing transportation alternative (taxi) is not accessible to seniors and children

During the focus group discussion, participants were asked to mention multiple transportation issues in the Town of Happy Valley-Goose Bay. Figure 4.2 shows their responses in three different word clouds. The word cloud on the left represents the terms most frequently used first by participants to describe existing transportation issues. The middle word cloud represents the second most commonly used terms, and the word cloud on the right represents the third most commonly used terms. All three clouds contain the terms transportation, cost, lack, and taxi.

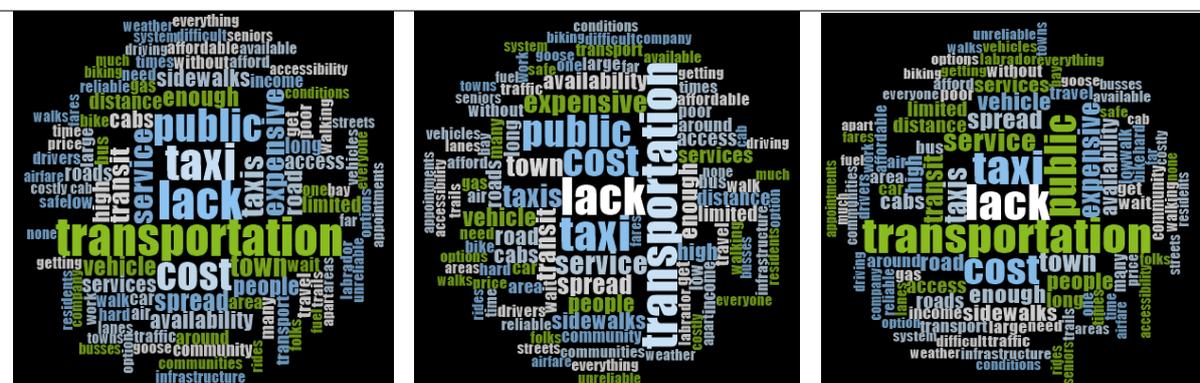


Figure 4.2: Major transportation issues

4.4.2 Benefits of Transit

Participants were asked to discuss the following: “What are the major benefits that public transit could bring to you, your family, and your community (HV-GB)?” The discussion produced six common themes. The participants indicated that public transit for Happy Valley-Goose Bay will:

1. Provide a safe and reliable transit option
2. Create opportunities for elderly residents and residents who live with disabilities
3. Provide access to services (groceries, pharmacy, financial services, airport)
4. Create employment opportunities
5. Enhance the tourism industry
6. Be less expensive for users than other alternative (i.e., taxi)

Participants’ detailed responses are listed below in Table 4.1.

Table 4.1: Comments on benefits of public transit

Question: What are the major benefits that public transit could bring to you, your family, and your community (HV-GB)?

<i>Response:</i>
It will be safer to travel around town.
Good for environment (everyone).
Autonomy, independence, and choice (community).
Allow more access to community services.
Safe alternatives (Everyone).
Environmentally friendly.
Cost of gas is extremely high.
Public transportation would give me peace of mind that my friends, family, and community have independence and safe, reliable transportation.
Advantage for those looking for work and no personal access to transport.
Provides access to employment for people without car.
Lack of transportation creates a barrier to healthcare, employment, education, cultural supports, etc.
Allow retention and recruitment of health care staff, etc. and others that come to the Town of Happy Valley-Goose Bay to work.
Transportation will promote equity.
Parents with children in care are particularly impacted by lack of transportation. This option will allow them to get the supports they need, or their children need.
Increase in tourism which allows tourists to explore our town easier
Gives people option of where they would like to live.
It allows a form of freedom for lower income people without cars to go to appointments etc.
Access to churches and services, such as, Post office, Beauty salons, Airport, YMCA and movie theatre.

4.4.3 Guiding Principles

Participants were asked to identify five guiding principles for the potential public transit system in the Town of Happy Valley-Goose Bay. Some common themes emerged from the group discussion and brainstorming session, which informed the development of the guiding principles recommended in this

report. The following principles, as they emerged from the focus group, will be used to direct the quality and type of transit service the Town implements during service initiation and beyond:

1. Accessible, safe, and reliable for all ages and abilities
2. Affordable transit for all
3. Should be frequent and linked with key destinations
4. Operational during all seasons, including in the Winter
5. Easy to navigate and efficient

Participants’ detailed responses are listed below in Table 4.2.

Table 4.2: Comments on guiding principles of public transit

Question: Think about FIVE guiding principles for the transit service at Happy Valley-Goose Bay (HV-GB)

<i>Response:</i>	Reliability of Schedule.
	Taxis/Cabs are not dependable, could be waiting an hour or more sometimes.
	Taxis are not always safe.
	Lack of accessible transportation
	Our town is vast. It is expensive to get from one end to the other, particularly people on a low or fixed income.
	College has transportation issues especially for students moving from the north.
	Easy to navigate (routes, maps, connected to social media)
	Affordable
	Economical
	Reliable
	Available
	Accessible to all
	Reliable transportation would also take the stress off worrying about missing job interviews, shifts, health appointments, etc.
	Safety is a big one for me, too, making sure that no matter why people are out, they can get home safely.
	The ability to gain that independence and not be restricted would be amazing.
	Taking away transport, limiting it, really takes away dignity.
	Safety
	Inclusivity

4.4.4 Service Route Concepts

Service route concepts were derived from the focus group consultation. Each member of the group was asked to draw the ideal transit route(s) for their community. This link was also circulated to the public following the public consultation session, to ensure those who were unable to attend could still provide input. Interestingly, most of the responses collected focus almost exclusively on the downtown core of the Town of Happy Valley-Goose Bay despite the survey results indicating a majority were interested in regional routes. Many also wanted to see a connection to the Goose Bay Airport (YYR). Responses can be summarized by three representative samples, illustrated below (Figure 4.3 - Figure 4.5). All individual responses from both the focus group and broader community engagement are found in **APPENDIX B**.



Figure 4.3: Proposed transit route focusing on downtown core of Happy Valley-Goose Bay

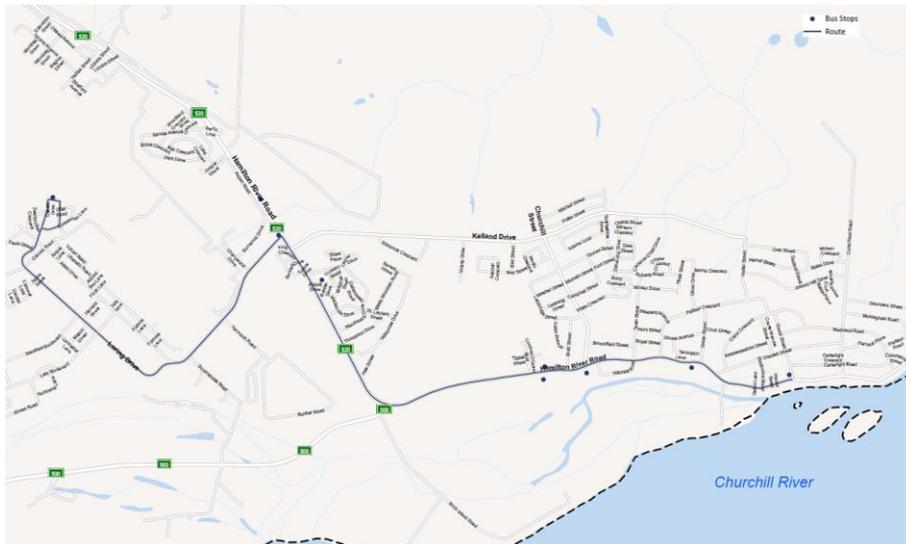


Figure 4.4: Proposed transit route connecting the airport to downtown Happy Valley-Goose Bay



Figure 4.5: Proposed transit route connecting Sheshatshiu and Happy Valley-Goose Bay

4.4.5 Key Destinations

Much like the survey, focus group participants were asked to list five key destinations essential for any transit service in Happy Valley-Goose Bay. The following word cloud provides a visualization of the major destinations listed:



Figure 4.5: Key destinations listed by participants of focus group discussion

A list of all key destinations collected during the focus group discussion is below:

Table 4.3: List of key destinations

Question	List of key destination (based on focus group discussion and focus group survey)			
Responses	Destination	Frequency	Destination	Frequency
	Hospital	22	CAN_Parking_Lot	1

Airport	19	Canadian_Side	1
Co-op	18	Canex	1
NorthMart	16	CNA Parking Lot	1
College	15	Commercial Areas	1
Spruce_Park	11	Community Centre	1
Post_Office	9	Dock	1
Hamilton_Drugs	5	Dollar_Store	1
Lower_Valley	5	Friendship_Centre	1
YMCA	5	Gas_Station	1
Banks	4	Government_Services	1
Grocery_Store	4	Gyms	1
Bargain_Shop	2	Mall	1
Hotels	2	North_Atlantic_Terrington	1
Libra_House	2	North_West_River/Sheshershiu	1
MOT	2	Police_Station	1
Pumpkin_House	2	Salvation_Army	1
Adam's_Loop_Area	1	School	1
Townhall	1	Tim_Hortons	1

4.4.6 Service Features

The focus group participants also identified their ideal service features for a potential transit system in Happy Valley-Goose Bay, such as fare rates, technology, and physical infrastructure. Participants proposed a \$2-\$4 per-ride fare, with a monthly/yearly pass option. This is consistent with the results obtained from the survey. Focus group participants expressed interest in family pricing, as well as discounts for elders, students, and children. A conventional (low-tech) fare collection system was preferred by focus group participants, as the consensus was many Happy Valley-Goose Bay residents may not be familiar with new technologies of fare collection, such as smart cards. Participants were interested in Wi-Fi and GPS tracking being widely available in buses, as well as the prospect of a bus time display at important stations or on a mobile app. All buses should be accessible, ideally with ample room for strollers and wheelchairs, according to the focus group participants. In terms of frequency, participants thought there should be no more than a 30-minute delay between buses at any given stop. Participants were very concerned about the challenges posed by winter weather and suggested the inclusion of various features specific to safety during the winter season. Participants' exact responses on preferred service features are listed below:

Table 4.4: Comments on recommended features for public transit in Happy Valley-Goose Bay

Question: Discuss what features (e.g., fare collection system, fixed or flexible route etc.) you would prefer for the transit service at Happy Valley – Goose Bay (HV-GB)?

<i>Response:</i>	Multi-lingual information and signage.
	An app would be great but should also be able to take cash.
	Multiple ways of paying, such as cash, credit card, buying tickets at local retailers, public transit cards (like OPUS in Montreal).
	We think a fixed route would allow people to have more confidence in the system, knowing where and when the stops would take place.
	Mixed fare collection system.

- Bus should be accessible and also be well well-maintained.
- Bus shelters.
- Bus shelters for sure. Even the little glass ones for the wind in winter.
- Heating option for extreme winter.
- We should have physical signs for schedules and make an app.
- An app for the schedule and routes.
- It'd be nice to have a bus with some storage space.
- Bike racks on the bus like airport shuttles.
- Education for drivers regarding bus etiquette and safety.
- Wider lanes around town.
- Cultural sensitivity training for drivers/staff.

4.5 Contribution of Women in Motion Advocacy Group

Lastly, there was one unscheduled form of public feedback that warrants inclusion in this feasibility study. On October 19th, 2021, a local advocacy group called “Women in Motion” met with Town staff, and participants raised a few serious concerns about the lack of transit that currently exists in the community of Happy Valley-Goose Bay. The group launched a letter writing campaign to draw attention to their struggles accessing reliable, safe, and affordable transportation in Happy Valley-Goose Bay. One participant from the meeting is the co-ordinator of a program run by Women in Resource Development. The other four women were low-income residents and participants in the program. All those present were Indigenous women. The co-ordinator and the members shared their struggles, both in terms of attempting to run a program for low-income women without transportation, and as individuals without access to transportation. Most of the concerns and suggestions the group raised are closely related to those that emerged from the focus group discussion. Some of the major take-aways of this conversation about how the lack of public transit impacts the lives of group members were as follows:

- Access to Employment
- Maintaining Employment
- Cost of Cabs as prohibitive
- Infrequent Cabs
- Safety in Cabs
- Accessing Childcare
- Access to schooling (participation in program itself threatened by lack of transit)
- The impact of extreme weather and general safety when walking

CHAPTER 5: TECHNICAL FEASIBILITY ASSESSMENT

5.1 Service Concepts

The design criteria for the route options were derived from the guiding principles developed through the focus group discussion and the public transit feasibility survey responses. Table 5.1 explains the benefits and constraints of the four service concepts considered for a public transit system in the Town. It is recommended that the Town of Happy Valley-Goose Bay provide the community a fixed-route public transit service which focuses on all types of trips (work and non-work).

Table 5.1: Merits and demerits of different service route concepts

Concepts	Merits	Demerits
Fixed Route Conventional Transit	<ul style="list-style-type: none"> a) Ensures highest capacity b) Maximization of service c) Fully accessible and reliable 	<ul style="list-style-type: none"> a) Higher financial cost b) Low utilization during off peak hours.
Fixed Route Community Bus	<ul style="list-style-type: none"> a) Provides service for focused trips with set origin and destination b) Accessible and available 	<ul style="list-style-type: none"> a) All people do not get benefit, e.g., not suitable for commute trips
Fixed Route Shared-Ride Taxis	<ul style="list-style-type: none"> a) Suitable for remote areas b) Sometimes provide door-to-door service 	<ul style="list-style-type: none"> a) Minimum capacity b) Sometimes unsafe
Dial-a-Ride	<ul style="list-style-type: none"> a) Good for remote areas b) Provide door-to-door service 	<ul style="list-style-type: none"> a) Frequency is low b) Not reliable

5.2 Route Determination

Based on the focus group discussion, online map survey, and general survey responses, it is recommended that the Town of Happy Valley-Goose Bay implement a fixed route service using a community bus. It is further recommended that the Town of Happy Valley-Goose Bay implement two routes in the proposed system: one within the downtown core of the Town, with service to the airport, and the other a regional route with service to Sheshatshiu Innu First Nation and the Town of North West River. It is recommended the two routes be implemented using a phased approach, beginning with a pilot project on the municipal-level route (Phase 1), and progressing to regional connectivity shortly thereafter (Phase 2). Detailed descriptions of both phases are as follows:

5.2.1 Phase 1

Figure 5.1 illustrates the proposed route of Phase 1 for the recommended public transit system in the Town of Happy Valley-Goose Bay. This route connects the downtown core of the Town with the airport and the community of Spruce Park. The total length of this proposed route is 28kms (See **APPENDIX C** for details). The majority of focus group participants and those that filled out the online mapping survey released to the public proposed a transit route focusing on the downtown core with access to the

airport. Interestingly, the airport received the most mentions as an essential bus stop after the hospital. Considering the feedback obtained by the public, the following visual rendering is the recommended route for Phase 1 of public transit implementation in Happy Valley-Goose Bay.



Figure 5.1: Proposed transit route for Phase 1

5.2.2 Phase 2

The proposed route for Phase 2 is derived from the demand expressed by community members during the various stages of public consultation for a connection between the Town of Happy Valley-Goose Bay and the neighbouring communities of the Town of North West River and Sheshatshiu Innu First Nation. The total length of this loop is 92 kms and it is therefore recommended that this route be an express transit service (See **APPENDIX C** for details).

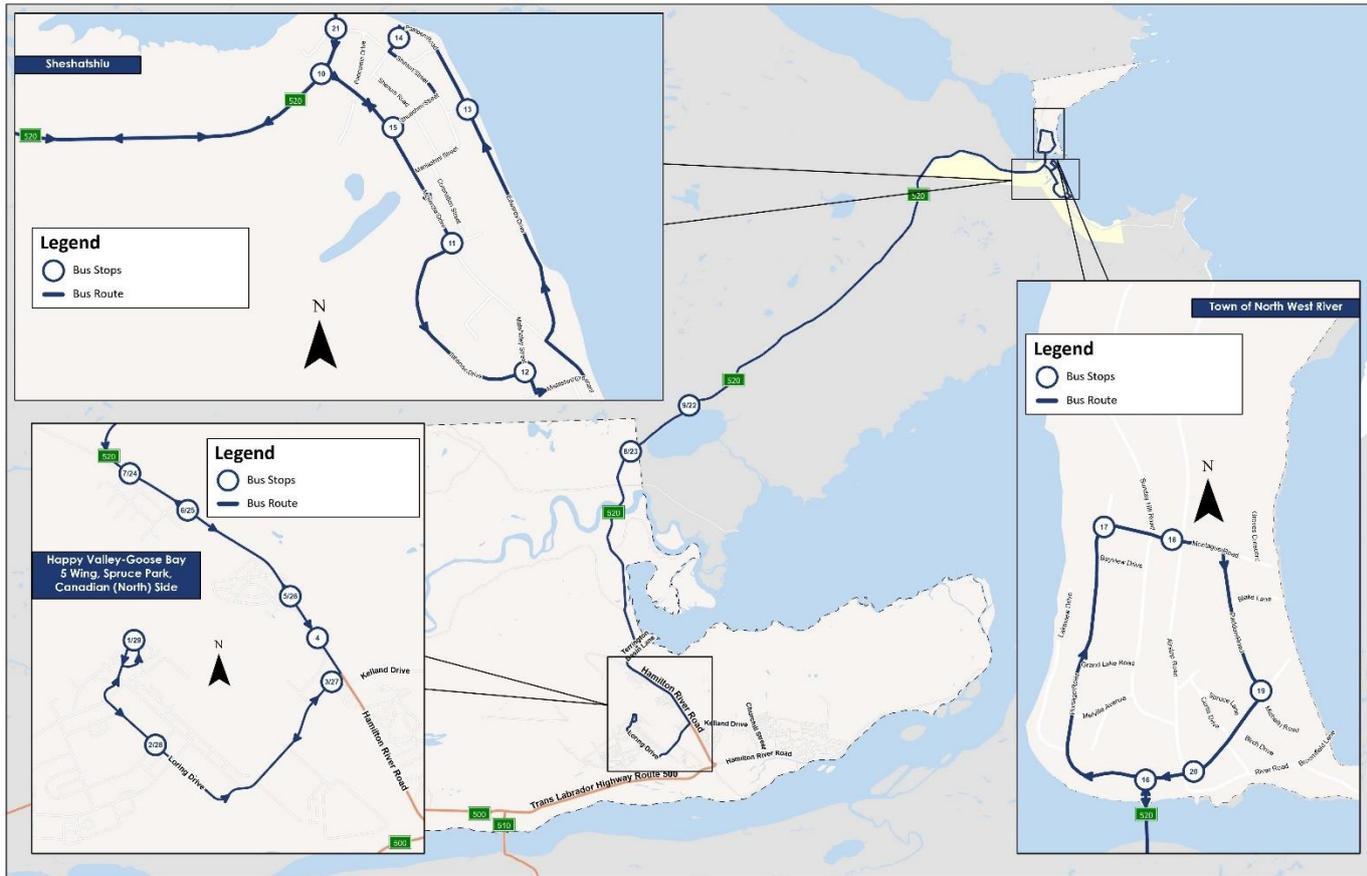


Figure 5.2 Proposed transit route for Phase 2

5.3 Vehicle Options

There were four vehicle options considered for the Town of Happy Valley-Goose Bay public transit service, and the following section contains a detailed description of each. According to survey responses and the focus group discussion, it is recommended that the Town of Happy Valley-Goose Bay purchase a new gasoline-powered community bus with capacity for up to 20 passengers. If demand grows in the future, the Town could purchase a small bus that allows for up to 8 additional passengers.

5.3.1 Conventional Bus

Conventional buses can be useful to serve areas with a high demand for public transit. In general, its length is in between 9.3m and 12.2m, with a capacity for 26 to 42 passengers. Kings County and the Halifax Regional Municipality (HRM) in Nova Scotia utilize this kind of bus. More than \$500,000.00 is required to purchase a new conventional bus, with used options available to purchase for as low as \$50,000.00. Most conventional buses are accessible for persons living with a physical disability. Some common issues with this type of bus are that it requires more space on the road while turning, it demands highly qualified drivers, carries higher maintenance costs, and needs a bus depot for storage.



Figure 5.3: Conventional bus

5.3.2 Small Bus

A small bus typically has a length of 8.8m to 9.2m, with capacity for 16 to 28 passengers. A small bus carries lower up-front costs, with a new model typically retailing for around \$200,000.00. A small bus is safe and can be designed to be fully accessible for persons living with a physical disability. A driver can operate a small bus with a regular license. The main disadvantage of a small bus is the low passenger capacity and the short operating life cycle (7 to 10 years). Halifax Metro X uses small buses for providing their service.



Figure 5.4: Small bus

5.3.3 Community Bus

The length of a typical community bus varies between 5.9m to 6.7m, and it has capacity for up to 20 passengers. The Town of Yarmouth uses a community bus for their senior citizen service. Community buses are useful for regions with lower demand for public transit and they can typically be operated and maintained locally, with a regular license and commonly available service parts.



Figure 5.5: Community bus

5.3.4 Large Van

A large van is mainly utilized for dial-a-ride service and its standard length is 5.9m. A large van can carry up to 10 passengers at a time. It can be operated and maintained locally, and operation costs are lower than the other options discussed above. Transport de Clare utilizes a large van for their transit service.



Figure 5.6: Large van

5.4 Fare Technology Options

The three most popular fare collection technology options that were mentioned in both the focus group and the survey were cash, bus tickets, and smart cards (Figure 5.7). Ideally, a combination of two or more of these technologies would best suit community preferences. It is therefore recommended that the Town of Happy Valley-Goose Bay begin with low-technology options, cash and a ticket service, with the potential to upgrade to a smart card service if demand and additional funding becomes available. Coin and cash-based systems are among the most basic and readily accessible methods for collecting and verifying fares. Both cash and tickets are highly dependable and cost-effective to operate. If riders are able to pay with cash or pre-purchased paper tickets, the system will be more accessible to low-income residents and those without access to credit. Preprinted paper tickets would be available for purchase at local shops, the Town Hall, and perhaps through major employers. The passenger would present the prepaid ticket in lieu of cash payment of the fare when boarding the bus. Smart cards operate using the same technology as a credit card and could be tapped upon entry to the bus. There are costs associated with setting up and operating a smart card system that potential outside funding could be sought to cover down the road.

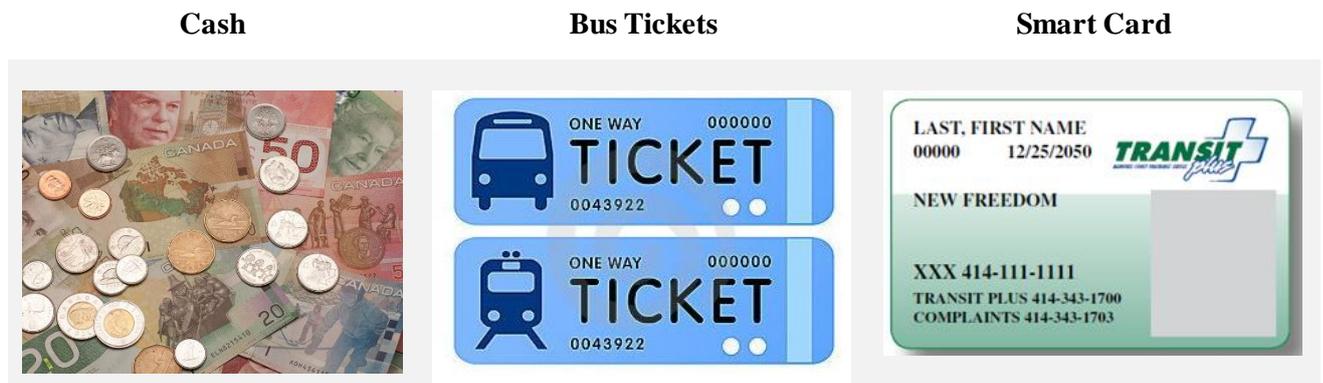


Figure 5.7: Different fare collection options

5.5 Bus Stop Locations

Following on the above recommendation for a fixed route public transit system in the community of Happy Valley-Goose Bay, it is recommended that permanent bus stops be established along the fixed route. The locations of bus stops were developed using community input through the survey, focus group discussion, and the online route mapping survey. The community indicated that the priority destinations for bus stops should include the Goose Bay Airport (YYR), the Labrador Health Centre, NorthMart, and Canada Post outlets amongst others. It is recommended that, for at least the first year of service, a flag stop service should be considered to supplement the permanent stops. A flag stop service allows people to signal the bus down at any spot along the approved route for pickup. This will allow for a refinement of the route over the year, to determine whether any stops may need to be added permanently or existing stops be moved.

List of potential bus stops for Route 1 (Municipal Level Route)

1. *Hamilton River Road after Grand Street (NorthMart Terminal)*
2. *Hamilton River Road before Pump House Road (entrance to Birch Island)*
3. *Hamilton River Road after Palliser Crescent*
4. *Hamilton River Road after Hillcrest Road*

-
5. *Hamilton River Road at Labrador Health Centre*
 6. *Hamilton River Road before Valleyview Drive*
 7. *Hamilton River Road before St Laurent Street*
 8. *Hamilton River Road after Macdonald Drive*
 9. *Hamilton River Road at Canada Post, Station C*
 10. *Hamilton River Road after Juniper Street*
 11. *Spruce Avenue before Woodland Crescent*
 12. *Park Drive before Lake Crescent*
 13. *Hamilton River Road before Burnwood Drive*
 14. *Loring Drive after Hamilton River Road*
 15. *Loring Drive after Cherrywood Drive*
 16. *Kittyhawk Drive before Banshee Blvd*
 17. *Goose Bay Airport (YYR) Terminal*
 18. *Kittyhawk Drive before Banshee Blvd*
 19. *Loring Drive Opposite Labrador Speciality Services*
 20. *Hamilton River Road after Loring Drive*
 21. *Kelland Drive before Edmunds Crescent*
 22. *Kelland Drive after Edmunds Crescent*
 23. *Kelland Drive at Provincial Court Building*
 24. *Kelland Drive before Tooktashina Drive*
 25. *Hefler St before Hamel St*
 26. *Johnny Hill Dr before Blake Dr*
 27. *Courte Real Rd before Saunders St*
 28. *Saunders Street before Hamilton River Road*
 29. *Hamilton River Road before Courte Real Road*
 30. *Hamilton River Road after Grand Street (NorthMart Terminal)*

List of potential bus stops for Route 2 (Regional Connectivity)

1. *Goose Bay Airport (YYR) Terminal*
2. *Kittyhawk Rd. before Banshee Blvd*
3. *Loring Drive Opposite Labrador Speciality Services*
4. *Hamilton River Road after Canada Post, Station C*
5. *Hamilton River Road after Juniper Street*
6. *Hamilton River Road after London Street*
7. *Hamilton River Road before Edmonton Street*
8. *Hamilton River Road after Spruce Meadow Farms*
9. *Hamilton River Road at Birch Brook Nordic Ski Club*
10. *North West River Road before Mackenzie Drive*
11. *Mackenzie Drive before Tshenish Drive*
12. *Tshenish Drive before Mackenzie Drive*
13. *Edwards Drive before Kashkam Street*
14. *Posteen Road at Roman Catholic Church*
15. *Shuashia Street before Mackenzie Drive*
16. *North West River Road before Portage Road*
17. *Portage Road before Montague Road*
18. *Forestry Centre Terminal*

19. Paddon Road Before Portage Road
20. Portage Road at North West River Community Center
21. North West River Road before Shimun Street
22. Hamilton River Road at Birch Brook Nordic Ski Club
23. Hamilton River Road before Spruce Meadow Farms
24. Hamilton River Road before Edmonton Street
25. Hamilton River Road after London Street
26. Hamilton River Road after Juniper Street
27. Loring Drive Opposite Labrador Speciality Services
28. Kittyhawk Rd. before Banshee Blvd
29. Goose Bay Airport (YYR) Terminal

5.6 Service Options

In terms of scheduling, the majority of participants from the focus group preferred buses be scheduled to run between 7am-8pm on weekdays with reduced hours on weekends. Various offices, institutions, and stores are open to the public between 8am to 9am on weekdays in the Town of Happy Valley-Goose Bay. The Wellness Centre opens at 6am and does not close until 9pm on weekdays. In order to allow access to all services and facilitate commuting before and after the workday, it is suggested that the Town bus service begin running at 6am and stop at 9pm on weekdays (shown in Table 5.2). It is recommended that the Town also provide bus service on the weekends at reduced hours of service, from 9am to 6pm on Saturdays and Sundays. Hours of service and weekend service can be adjusted according to demand. Buses should run frequently during peak morning hours, 6am-9am, and peak evening hours, 4pm-6pm. Should demand not be sufficient to justify operating as frequently during off-peak hours, the Town can adjust the schedule to reflect decreased demand. The Town could apply for funding to build a depot to hold buses overnight, but in the interim, there should be a designated parking space allocated in the Town limits for overnight bus parking, either in a large parking lot or near the Goose Bay airport (YYR). All buses must be wheelchair accessible and be able to accommodate passengers with strollers or larger items. Additionally, all buses should include bikes racks on the front of the vehicle.

Table 5.2: Service options for the Town of Happy Valley-Goose Bay

Bus Service	Town of Bridgewater	Kings Transit	Options for Town of Happy Valley – Goose Bay
Hours of Operation Weekdays	6am – 9pm	7am – 9pm	6am - 9pm
Saturday	8am – 7pm	9am – 7pm (select routes)	9am – 6pm
Sunday	9am – 5pm	No Service	9am – 6pm

Table 5.3: Transit Schedule for the Town of Happy Valley-Goose Bay

PHASE-1			
Terminal	Start Time	Terminal	Start Time
NorthMart Terminal to Airport Terminal	6:01 AM	Airport Terminal to NorthMart Terminal	6:35 AM
	7:01 AM		7:35 AM
	8:01 AM		8:35 AM
	9:01 AM		9:35 AM
	10:01 AM		10:35 AM
	11:01 AM		11:35 AM
	12:01 PM		12:35 PM
	1:01 PM		1:35 PM
	2:01 PM		2:35 PM
	3:01 PM		3:35 PM
	4:01 PM		4:35 PM
	5:01 PM		5:35 PM
	6:01 PM		6:35 PM
	7:01 PM		7:35 PM
	8:01 PM		8:35 PM

PHASE-2			
Terminal	Start Time	Terminal	Start Time
Airport Terminal to Forestry Centre Terminal	6:01 AM	Forestry Centre Terminal to Airport Terminal	7:35 AM
	9:01 AM		10:35 AM
	12:01 PM		1:35 PM
	3:01 PM		4:35 PM
	6:01 PM		7:35 PM

10 minute break at Airport Terminal

30 minute break at each Terminal

5.7 Additional Features

Several promising emerging technologies offer potentially simplified fare collection processes or increased passenger safety features. These features are explored below. None of these features should be considered mandatory, however, if the Town of Happy Valley-Goose Bay has any interest, they can implement any combination of the features discussed below to expand upon service delivery.

5.7.1 RFID Trackers

Radio Frequency Identification Device (RFID) trackers provide real-time bus tracking information to the Bus Rapid Transit (BRT) control room. If any of the buses need emergency support, this device automatically sends a notification to the control room.

5.7.2 Passenger Behaviour Tracking System

The passenger behaviour tracking system usually takes the form of a web communication tool that can help in identifying, analysing, responding to, and resolving incidents related to passenger misconduct.

5.7.3 Wi-Fi

Transit vehicles can be set up to offer Wi-Fi. Passengers can utilize the complimentary Wi-Fi during their journey.

5.7.4 Spouts Detector

This technology is helpful in places that experience harsh winters. The spouts located in front of the bus tires can drop sand onto the icy roads. Also, this technology allows the buses to automatically put chains on its' tires during the winter months.

5.7.5 Computerised Diagnostics

Computerised diagnostics is a useful technology that helps to identify any issues in a vehicle easily and determines the need for repairs. The problems that can be identified are RPM (Revolution Per Minute) levels of the vehicle engine, damage to indicator lights or fuel injectors, improper functioning of the oil tanks, issues with the transmission or gas tank, etc.

5.7.6 Automatic Door Entry System

Most modern buses have automatic doors with push buttons, which can be used by drivers to open and close the bus doors. With the automatic door system, drivers can avoid fatigue, shoulder pain, etc.

5.7.7 Mirror Grid Systems

Mirror grid systems are a valuable technology as they can provide drivers with a better view of the area around the bus. The mirrors are heated by electric grids that prevent snow and rain build-up and ensure visibility during storms.

CHAPTER SIX: FINANCIAL FEASIBILITY

This section explores the financial viability of implementing public transit in Happy Valley-Goose Bay. Factors that will impact the costing of the service are as follows:

- Transit routes
- Service hours
- Fare collection options
- Vehicles Options

The residents of the Town of Happy Valley-Goose Bay have expressed their preferences for the above throughout the data collection process. The community has indicated that would like to see a fixed route transit service, with weekday hours of operation from 6am-9pm and weekend hours from 9am-6pm. It is recommended that the system accept fare payment in both cash and tickets, with the potential for later implementation of a card operated fare collection system. It is recommended that the Town use a community bus with capacity for 10 to 20 passengers, as various Towns of comparable size and density have used successfully

6.1 Types of Operational Entities

The question of what type of operational entity should run the transit service in Happy Valley -Goose Bay was posed to survey and focus group participants. The options presented were a public service, a public-private partnership, a private service, or a service run by a non-governmental organization. In a public transit system, all aspects of the transit service are a public responsibility, including maintenance and operations. In a public-private partnership, the municipality is responsible for subsidizing all operating losses, and governance is often the responsibility of the municipal council, or a publicly appointed board. If the transit service is operated privately, the management, maintenance, and operation of the service is delegated to a third-party service provider. More than 50% of survey and focus group participants would prefer a publicly operated transit service, with ownership and operations performed by the municipality. A further 26% chose a shared partnership of public and private entities.

6.2 Costing

There are three key financial components to consider in calculating the total costs of the proposed system:

- Capital budget (Start-up Costs)
- Operating budget
- Anticipated revenue

Capital expenditures include the acquisition of the bus or transit vehicle, as well as any required infrastructure, such as bus stops and fare boxes. Advertising and marketing can be considered as a capital expenditure as well, as raising awareness of the new system will be vital. These expenditures are commonly known as start-up costs. The operating budget, however, consists of all costs incurred to offer the service once all the necessary equipment is in place. This budget considers the number of operating hours, distances travelled, driver salaries, fuel, maintenance costs, licences, vehicle registration and fees, etc. The expected revenue from the service is determined by the number of riders

and the fare amount, as well as any additional sources of revenue like paid advertising on buses, charter rentals, etc. The operating budget can be calculated by looking at all costs net of revenues. The calculation of the estimated costing for the proposed service in the Town of Happy Valley-Goose Bay is broken down below. Some assumptions on costs were derived from the Town of Bridgewater’s recently established public transit system of a similar scale. All expenses are shown in Tables 6.1–6.3 below.

6.2.1 Cost Estimation Methodology

- Cost to Purchase Vehicle= \$160,000 per Bus (based on the Town of Bridgewater)
- Fare Box Cost= \$5,000 for each Fare Box (based on the Town of Bridgewater)
- Bus Stops and Signage Costs= \$500 Per Bus Stop (based on the Town of Bridgewater) X Total Number of Stops
- First Aid Training Cost= \$300 per Driver (based on the Town of Bridgewater)
- Cost of Bus Driver Wages and Benefits= Total Service Hour per Year X \$21.86 per hour (based on the average salary of a bus driver in Nova Scotia)
- Fuel Cost= Total VKT per Year X Fuel Consumption Rate(1/km) X Fuel Cost per Litre

Note that 7 mile/gallon (33.6 liter/100km) is used as a fuel consumption rate for gasoline and 105 cent is used as a fuel cost per litre.

- Bus Maintenance Cost= \$5,000 per Bus (based on the Town of Bridgewater)
- Advertising, Marketing Costs= \$15,000 (based on the Town of Bridgewater)
- Ridership per Year in Happy Valley-Goose Bay = Ridership per Year in the Town of Bridgewater X Population in Happy Valley-Goose Bay /Population in the Town of Bridgewater

$$= (34651 \times 8109)/8532 = 32933$$

Note that transit ridership for Happy Valley-Goose Bay was calculated based on the mode split ratio in the Town of Bridgewater. Transit ridership for Bridgewater was 34,651 in 2019 and it is operating successfully and effectively. According to the survey responses, people in the Town of Happy Valley-Goose Bay showed great enthusiasm for public transit. So, the Town of Happy Valley-Goose Bay can expect high transit ridership in comparison with other similarly sized communities.

- Total Revenue from Fares= Ridership per Year X Fare per Ride (\$3)

Table 6.1: Operating Cost (based on first year of Operating Costs)

	Phase 1	Phase 2
Loop Length	28km	92km
Operating Hours		
Weekdays	6am to 9pm	6am to 9pm

Weekend: Saturday	9am to 6pm	9am to 6pm
Weekend: Sunday	9am to 6pm	9am to 6pm
Headway (time)	1hr	3hr
Frequency	1 loop per hr	1 loop per 3hr
Total Service Hours per year	4836	4836
Total Operating Hours per Year (Includes 1.5 Hour Break per Day)	4288	4288
Number of Bus Drivers Required	2	2
Total Vehicle Kilometers Travelled (VKT) per Year	\$139,277	\$148,304
Bus Driver Wages and Benefits per Year	\$105,715	\$105,715
Fuel (Gasoline) Cost per Year	\$49,136	\$52,321
Bus Maintenance Cost per Year	\$5,000	\$5,000
Bus Inspection and Insurance Cost per Year	\$15,000	\$15,000
Advertising and Marketing Costs	\$15,000	\$15,000
First Aid Training Costs	\$300	\$300
Total Operating Cost per Year	\$329,428	\$341,640

Table 6.2: Capital Cost (Start-Up Costs)

	Phase 1	Phase 2
Number of Buses Required	1	1
Number of Stops	30	29
Vehicle Purchase Cost	\$160,000	\$160,000
Bus Stops and Signage Costs	\$15,000	\$14,500
Fare Box Cost	\$5,000	\$5,000
Total Start-Up Cost	\$180,000	\$179,500

Table 6.3: Anticipated Revenue Per Year

	Phase 1	Phase 2
Ridership per Year	32933	32933
Total Revenue from fare (\$2/Ride) per Year	65,866	65,866
Total Revenue from fare (\$3/Ride) per Year	98,799	98,799
Total Revenue from fare (\$4/Ride) per Year	131,732	131,732

6.3 Branding and Marketing

Creating a recognizable brand identity is a crucial step in the implementation of a successful public transit system. Branding a service helps to create an easily identifiable product with a common through theme that extends across the service. A well-branded and identifiable transit system can deliver increased customer loyalty, improved employee satisfaction and retention, increased brand value, and a potential for attracting new land development activity. The proposed brand name for the transit service in the Town of Happy Valley-Goose Bay is “Happy-Ride.” The proposed colour scheme is green, blue, and white, drawn from the Labrador Flag and the Town logo. This colour scheme evokes the natural resources of the land and will draw associations to the environment. This is appropriate as the service

will offer a sustainable mode of transportation. Figure 6.1 shows the proposed logo for the “Happy-Ride” transit system.



Figure 6.1: Proposed logo for the Happy Valley-Goose Bay transit system

6.3.1 Incentives

As a part of marketing, and in an effort to engage new customers and increase ridership, it is suggested that the “Happy-Ride” transit service offer a variety of incentives. Incentives can include:

- Reduced rates for senior citizens (65+ yrs)
- Children under 5 years of age ride for free with a guardian
- Reduced rate passes for employees of companies who register their business with the “Happy-Ride” Smart Commute Program
- Pre-loaded/discounted passes for new immigrants and refugees--Allowing for up to a month of free transit
- Partnerships with local hotels and tourism boards to provide reduced daily rates or weekly passes to tourists
- Reduced rate passes for students attending local universities/colleges/high schools (included in tuition costs)

6.3.2 Promotional Activities

It is recommended the Town pursue various promotional activities, e.g., a public education campaign on the benefits of public transit, social media ads, the circulation of leaflets throughout the Town, promotion of the new service at major events, give-aways of promotional items like buttons or mugs, etc.



Figure 6.2: Social Media Targeted Ads



Figure 6.3: Examples of Possible Promotional Items

6.4 Funding Opportunities

As the Government of Canada moves toward economic recovery from the COVID-19 pandemic and a goal of net-zero emissions, sustainable transportation infrastructure, especially public transit, is becoming increasingly important. As such, the federal government has recently announced several unprecedented investments in public transportation across the country. Over \$13 billion has been invested in more than 1,300 public transit projects across Canada as part of the “Investing in Canada Plan;” however, unfortunately for the Town of Happy Valley-Goose Bay, they will not be eligible for these funds. The bilateral agreement signed with the province of Newfoundland and Labrador only allows for the Public Transit dollars in this agreement to go to existing systems at the time of signing, i.e. The City of St. John’s and the City of Corner Brook. New systems will not be eligible. The Town should follow updates to this bilateral agreement in case there are any amendments. Otherwise, the Town could consider applying under a different stream of the fund, i.e., the Rural and Northern Communities stream, to see if funds can be accessed this way. There is a new federal program, however, that the Town will be eligible for: the recently announced Rural Transit Solutions Fund, Capital Stream.

This fund will allow for funding support for the capital expenditures outlined above (the purchase of vehicles, fare boxes, etc.). This fund is part of \$5.9 billion for public transit to be spent over the next five years (2021-2026). The federal government has announced intentions to fund \$3 billion annually beginning in 2026-2027 specifically for public transit. The Federation of Canadian Municipalities makes federal funding available for municipalities to implement green infrastructure projects. There are grants available at all levels of the process, from planning grants to pilot project support, to capital funds. This is worth exploring. Lastly, on the federal level, the Town could consider allocating their allotment of the Canada Community-Building Fund (formally the Gas Tax Fund) to developing a transit system. On the provincial level, the Town is a Multi-Year Capital Works recipient, and could consider making public transit infrastructure a part of their funding agreement. There is potential for funds under the Department of Children, Seniors, and Social Development under the Newfoundland and Labrador Community Transportation Program, or possibly under the Poverty Reduction Strategy. There are several transit advocacy organizations, specifically Transport Action Atlantic and the Canadian Urban Transit Association, who could prove to be useful resources by way of advocacy or networking to further opportunities. Lastly, on a local level, the Town could look to local funding partners, local non-profits, large employers, etc. for potential contributions.



Figure 6.4: Potential funding sources

6.5 Final Overview and Summary of all Key Recommendations

The following section is a high-level review of all major recommendations made throughout this report, by way of conclusion and simplicity for the reader. Following a thorough review of best practices and existing systems in communities of a similar geographic and demographic make-up, and extensive community consultation with residents of the Town of Happy Valley-Goose Bay, it is recommended:

- That the Town implement a public transit system, using a phased approach. It is recommended that the Town begin with a pilot program for a year or less using Phase 1, the municipal level route, and progress to Phase 2, the regional level route, following the results of the initial pilot program
- The system should be owned and operated publicly
- The system should be on a fixed route with permanent bus stops. The system should run according to the clock, with a clear and widely accessible schedule for service
- Weekday service should operate from 6am-9pm, with weekend service from 9am-6pm. This service schedule can be amended as the pilots get underway according to demand
- The system should consist of a gas-powered community bus with capacity for 20 passengers. Each route will require one community bus operated by two drivers. The bus should be fully accessible for persons living with physical disabilities. The bus should include storage for large personal items, such as strollers, and should come equipped with bike racks.
- The system should begin with cash and paper ticket fare collection options, as well as monthly passes. There is the possibility to expand to a tap card system down the road should there be demand
- The fare per trip should be \$3. There should be options in place for discounts for seniors, students, children, and low-income residents.
- There should be a strong emphasis on partnerships in the community through the Smart Commute Program, where employers or institutions can purchase passes in bulk at a discount
- Funding opportunities, particularly under new announcements made by the federal government on rural transit, should be explored and applied to
- Additional revenue sources can be explored as the system is underway, like allowing for advertisements on the bus or creating a charter rental program for event rentals

APPENDIX A (SUMMARY OF SURVEY DATA)

Survey Questions

- Q1 In which community do you live in?
- Q2 Do you own or have access to a car?
- Q3 If you own a car, how many vehicles do you own?
- Q4 Do you own or have access to a bicycle?
- Q5 In your opinion, what are the three major transportation issues in the region of Central Labrador?
- Q6 Are you aware of any operational rural transit system in other communities of Canada?
- Q7 In your opinion, what are the three major benefits public transit could bring to your community?
- Q8 What are the three major barriers to the implementation of public transit in your community?
- Q9 In your opinion, which strategic directions of the Town of HV-GB (as outlined in Strategic Plan 2017-2022, Town of Happy Valley Goose Bay, 2017) relate to the implementation of a public transit system?
- Q10 How likely are you to ride public transit, if available, in HV-GB?
- Q11 How much are you willing to pay per trip for public transit?
- Q12 How often would you expect a bus to come by?
- Q13 How long are you willing to walk to reach a bus stop?
- Q14 Generally, transit services can be operated in two ways, 1) on a fixed route, and 2) on a flexible route. Fixed route transit service means fixed route for buses with permanent bus stops and a permanent schedule. A flexible transit service does not include a fixed route for buses. For example, you may request bus rides according to your own schedule and your request will be served if there is sufficient demand in that area. In your opinion, what kind of transit service option would you prefer for HV-GB?
- Q15 What type of vehicle option would you prefer for HV-GB transit services?
- Q16 What are the five key destinations the bus route should serve?
- Q17 How far apart bus stops should be located in residential areas?
- Q18 In your opinion, what kind of transit service would you prefer in the region of Central Labrador?
- Q19 What type of fare collection system would you prefer?
- Q20 Do you think that public transit will enhance the tourism sector of HVGB?
- Q21 Which kind of transit connectivity would you prefer?
- Q22 Do you have any additional comments regarding HV-GB public transit?
- Q23 What was your primary mode of transportation (70% of the time or more) for your daily commute throughout the year of 2019?
- Q24 What was your secondary mode of transportation (less than 30% of the time) for your daily commute throughout the year of 2019?
- Q25 With whom did you travel most often?
- Q26 How many kilometers was your commute in a typical weekday using your primary mode of transportation? (Enter whole number)
- Q27 How many times per week did you travel for the following purposes?
- Q28 In a given year how often do you travel to and from the airport on an average?
- Q29 How much on average (in Canadian dollars) did you spend out-of-pocket monthly for transportation purposes (gas, parking, etc.)? Costs of ownership or vehicle maintenance should NOT be included.
- Q30 Have your commuting habits changed due to the COVID-19 pandemic?

- Q31 What best describes the changes that you have encountered?
- Q32 What is your primary mode of transportation (70% of the time or more) for commute in the last year?
- Q33 How frequently did you commute for work in the last year?
- Q34 What is the postal code of your local residence? Please provide it in six-digit UPPERCASE format without space (i.e., B342K6)
- Q35 In which age group do you belong?
- Q36 How do you describe yourself?
- Q37 What is your current employment status?
- Q38 In which category would your household fit into for annual gross household income (before tax)?
- Q39 How many persons live in your household, including yourself?

Summary of Travel Survey

**Total
Responses=384**

Q1 In which community do you live in?	
Happy Valley-Goose Bay	358
Sheshatshiu Innu First Nation	4
Northwest River	8
Mud Lake	2
Other	9
Total	381
Not Answered	3

Q2 Do you own or have access to a car?	
I own a car	324
I can borrow a car or get a ride most of the times I need it	24
I can borrow a car or get a ride some of the time	18
I can borrow a car or get a ride some of the time	33
Total	384
Not Answered	0

Q3 Do you own or have access to a bicycle?	
I own a bicycle	181
I can use or borrow a bicycle most of the times when I need it	29
I can use or borrow a bicycle some of the times when I need it	17
I do not own or have access to a bicycle	161
Total	383
Not Answered	1

Q4 Are you aware of any operational rural transit system in other communities of Canada?	
Yes	104
No	79
Not sure	63
Total	246
Not Answered	138

Q5 In your opinion, which strategic directions of the Town of HV-GB (as outlined in Strategic Plan 2017-2022, Town of Happy Valley Goose Bay, 2017) relate to the implementation of a public transit system?	
Economic vibrancy	108
Quality of life and inclusivity	160
Infrastructure renewal	84
Municipal leadership	56
Environmental stewardship	80
Not sure	78

Total	247
Not Answered	137

Q6 How likely are you to ride public transit, if available, in HV-GB?	
Not at all	27
Likely	0
Not very Likely	43
Likely somewhat	58
Likely	44
Very likely	75
Total	247
Not Answered	137

Q7 How much are you willing to pay per trip for public transit?	
Less than \$2	23
\$2-\$4	150
\$4-\$6	42
More than \$6	11
Not sure	21
Total	247
Not Answered	137

Q8 How often would you expect a bus to come by?	
About once every half an hour	56
About once every hour	105
About once every two hours	33
Few times per day	31
Not likely to use	22
Total	247
Not Answered	137

Q9 How long are you willing to walk to reach a bus stop?	
Less than 5 minutes	93
5 to 10 minutes	113
10 to 15 minutes	23
More than 15 minutes	4
Not sure	14
Total	247
Not Answered	137

Q10 Generally, transit services can be operated in two ways, 1) on a fixed route, and 2) on a flexible route. Fixed route transit service means fixed route for buses with permanent bus stops and a permanent schedule. A flexible transit service does not include a fixed route for buses. For example, you may request bus rides according to your own schedule and your request will be served if there is sufficient demand in that area. In your opinion, what kind of transit service option would you prefer for HV-GB?

Fixed Route bus transit service	132
Flexible route bus transit service	21
Hybrid of fixed and flexible bus transit service	75
Dial-a-ride bus transit service	13
Other	6
Total	247
Not Answered	137

Q11 What type of vehicle option would you prefer for HV-GB transit services?

Large van (capacity: up to 10 passengers)	15
Community bus (capacity: 10 to 20 passengers)	91
Small bus (capacity: 16 to 28 passengers)	92
Conventional bus (capacity: 26 to 40 passengers)	48
Total	246
Not Answered	138

Q12 How far apart bus stops should be located in residential areas?

Less than 500 m	57
500 m to 1 km	111
1 km to 2 km	62
Greater than 2 km	15
Total	245
Not Answered	139

Q13 In your opinion, what kind of transit service would you prefer in the region of Central Labrador?

Publicly operated buses	128
Privately operated buses	18
Public private partnership	64
Buses operated by non-profit organizations	35
Total	245
Not Answered	139

Q14 What type of fare collection system would you prefer?

Cash	17
Bus tickets	20
Smart card	31
All options	172

Other	3
Other (please specify)	2
Total	245
Not Answered	139

Q15 Do you think that public transit will enhance the tourism sector of HVGB?	
Yes	163
No	38
Not sure	44
Total	245
Not Answered	139

Q16 Which kind of transit connectivity would you prefer?	
Local connections in HV-GB only	50
Regional transit connecting different communities	24
Both local and regional connection in HV-GB	170
Total	244
Not Answered	140

Q17 What was your primary mode of transportation (70% of the time or more) for your daily commute throughout the year of 2019?	
Automobile – drive alone	179
Automobile – passenger (including carpooling)	26
Motorcycle	0
Bicycle	4
Walking	13
Other (e.g., taxi)	9
Total	231
Not Answered	153

Q18 What was your secondary mode of transportation (less than 30% of the time) for your daily commute throughout the year of 2019?	
Automobile – drive alone	49
Automobile – passenger (including carpooling)	48
Motorcycle	4
Bicycle	12
Walking	59
Other (e.g., taxi)	18
Not applicable, always use primary mode	41
Total	231
Not Answered	153

Q19 With whom did you travel most often?	
Alone	97
Spouse/partner	68

Child(ren) of the household	27
Relative/family member (s)	27
Co-worker (s)	3
Friend (s)	6
Other person (s)	4
Total	232
Not Answered	152

Q20 How much on average (in Canadian dollars) did you spend out-of-pocket monthly for transportation purposes (gas, parking, etc.)? Costs of ownership or vehicle maintenance should NOT be included.

\$0 – 20	9
\$20 – 40	8
\$40 – 60	11
\$60 – 80	12
\$80 – 100	17
\$100 – 120	26
\$120 – 140	18
\$140 – 160	18
\$160 – 180	11
\$180 – 200	18
\$200 or more	72
Prefer not to disclose	11
Total	231
Not Answered	153

Q21 Have your commuting habits changed due to the COVID-19 pandemic?

Yes	101
No	122
Not sure	7
Total	230
Not Answered	154

Q22 What best describes the changes that you have encountered?

Fully working from home.	29
Partially working from home (2/3 days per week).	45
I have changed my primary mode of transportation.	18
I moved closer to my workplace.	9
Other (please specify)	106
Total	207
Not Answered	177

Q23 What is your primary mode of transportation (70% of the time or more) for commute in the last year?

Automobile – drive alone	182
--------------------------	-----

Automobile – passenger (including carpooling)	27
Motorcycle	0
Bicycle	2
Walking	19
Total	230
Not Answered	154

Q24 How frequently did you commute for work in the last year?	
Daily	126
3-4 times a week	46
1-2 times a week	12
A few times a month	7
Once a month	3
A few times a year	3
Never	31
Total	228
Not Answered	156

Q25 In which age group do you belong?	
24 years and under	19
25 to 34 years	61
35 to 44 years	52
45 to 54 years	48
55 to 64 years	37
65 years and over	9
Prefer not to disclose	3
Total	229
Not Answered	155

Q26 How do you describe yourself?	
Male	72
Female	151
Prefer not to disclose	5
Other (please specify)	1
Total	229
Not Answered	155

Q27 What is your current employment status?	
Full-time (30+ hours/week)	176
Part-time (< 30 hours/week)	11
Regular Volunteer Work	1
Retired	9
Homemaker	3
Student	6
Unemployed	7

Prefer not to disclose	10
Other (please specify)	6
Total	229
Not Answered	155

Q28 In which category would your household fit into for annual gross household income (before tax)?	
Under \$25,000	17
\$25,000 to \$49,999	24
\$50,000 to \$74,999	41
\$75,000 to \$99,999	24
\$100,000 to \$149,999	38
\$150,000 to \$199,999	30
\$200,000 and over	14
Prefer not to disclose	41
Total	229
Not Answered	155

Q29 How many persons live in your household, including yourself?	
1	33
2	85
3	43
4	39
5	20
6 or more	8
Total	228
Not Answered	156

APPENDIX B (FOCUSGROUP DISCUSSION MATERIAL)

Letter of Invitation

Public Service Announcement
Public Consultation Session
Potential Public Transit Service
Information for the Public
Release Date: July 28, 2021

The Town of Happy Valley-Goose Bay and Dalhousie University will be hosting a Public Consultation Session on the potential of a Public Transit Service, the first of a series of consultations.

On August 5, 2021, from 5-7 pm, please join our virtual session for an interactive and lively conversation about what a transit service could and should look like in your community.

The main objective of this public consultation session is to receive community feedback on major design elements and important features and principles that should be prioritized in the transit system. What can you expect from the session?

Participants will be asked to begin by working on their own to prepare a list of key sites in the Town of Happy Valley-Goose Bay where a public transit service should frequent. In a series of small break-out groups, participants will then engage in a conversation on the following topics:

- how transit could benefit themselves, their families, and the community at large
- potential obstacles to the implementation of transit
- what an ideal design and route for a transit network would look like
- key design features such as vehicle options, technology, bus stops, etc.

All participants will then come back together for a closing roundtable, where a volunteer from each group will summarize and present the findings from their small group discussion.

The interns from Dalhousie University will analyze all information collected through the public consultation session and use the ideas generated when composing the transit feasibility study for the Town of Happy Valley-Goose Bay. To ensure your voice is heard, register today!

Contact Brenna Jarrar, the Director of Community Development and Research, at cd@townhvgb.com or by phone at 709-899-0392 to register for space and receive the virtual session link. Thank you in advance for your interest and engagement.

Join us on Thursday, August 5, 2021, and have your voice heard.

Poster for Invitation

What are your Thoughts on a Transit Service for Happy Valley-Goose Bay?



**Register to join our first
public consultation
session and contribute
your ideas!**

*Place, Date & Time: Virtual Session, July 15th 2021, 4-6 pm
To register and receive the session link, please email:
cd@townhvgb.com*

Register now to have your voice heard:

Please contact

BRENNA JARRAR,

Director of Community Development and Research

The Town of Happy Valley – Goose Bay

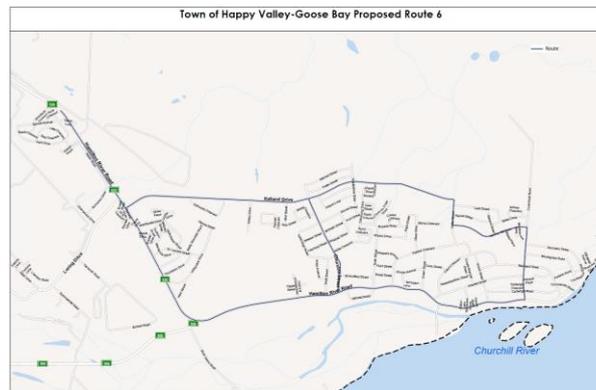
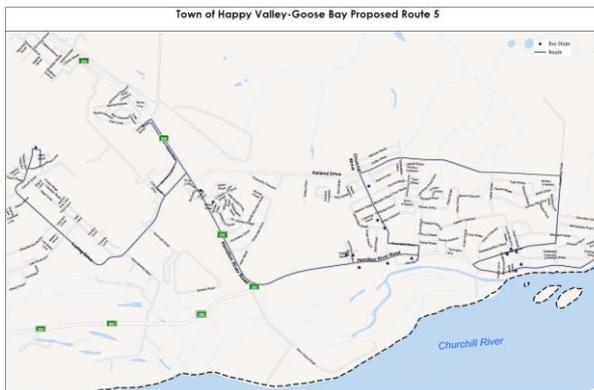
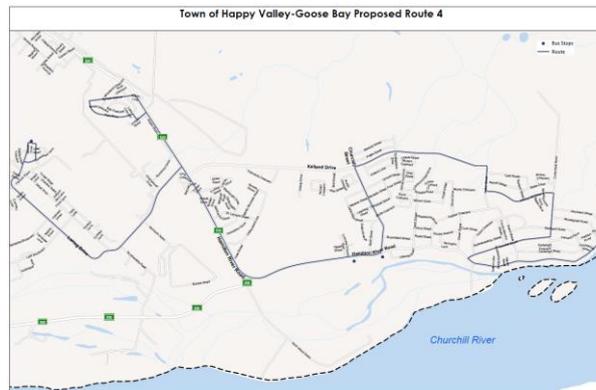
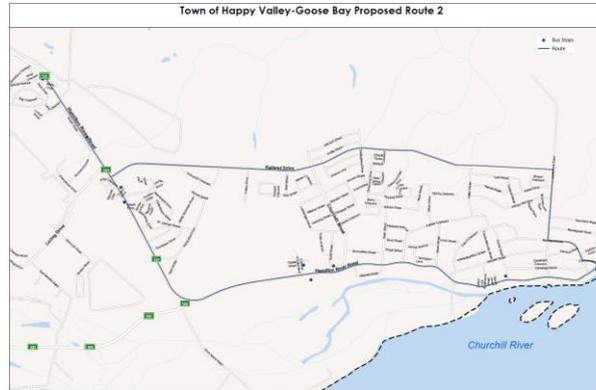
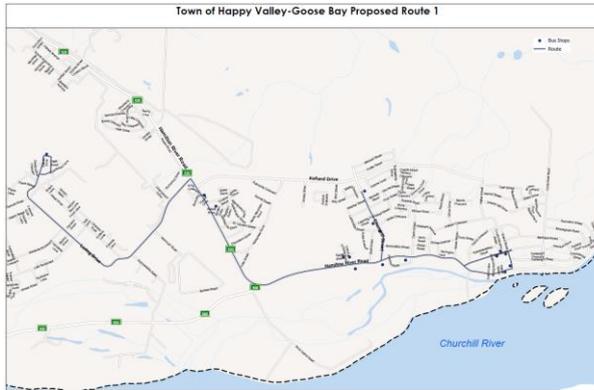
Contact No.: (o) 709-899-0392; (f) 709-896-9454

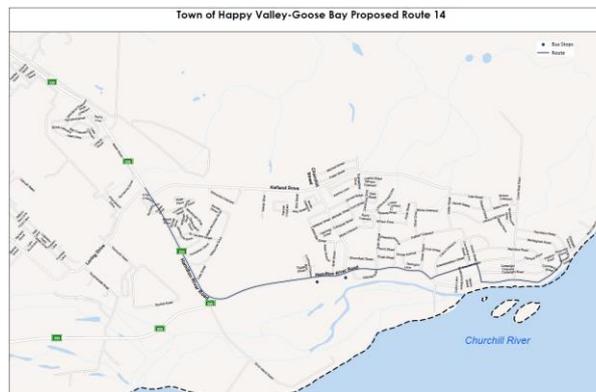
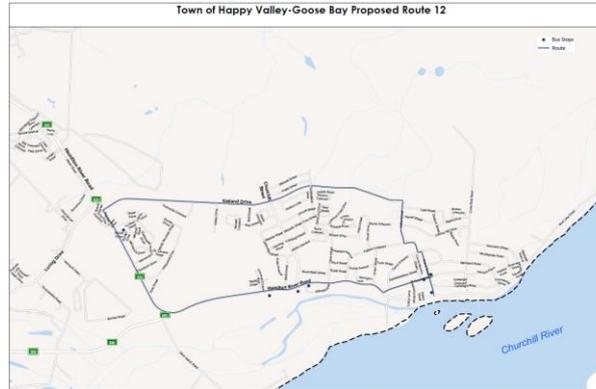
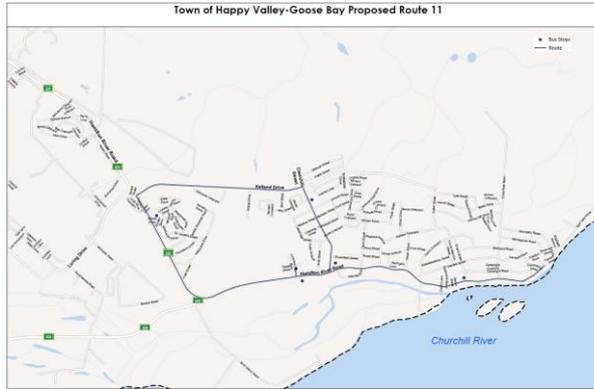
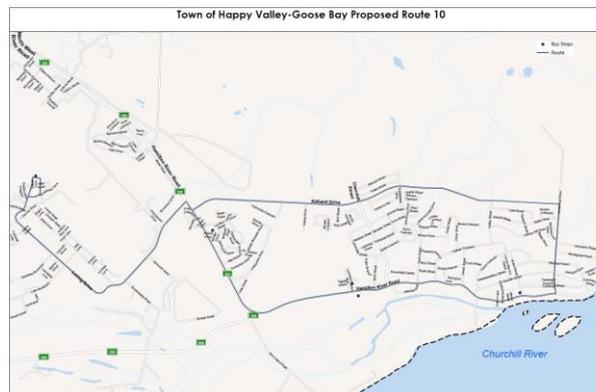
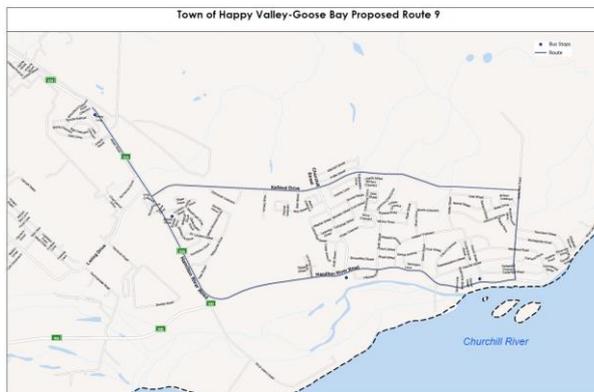
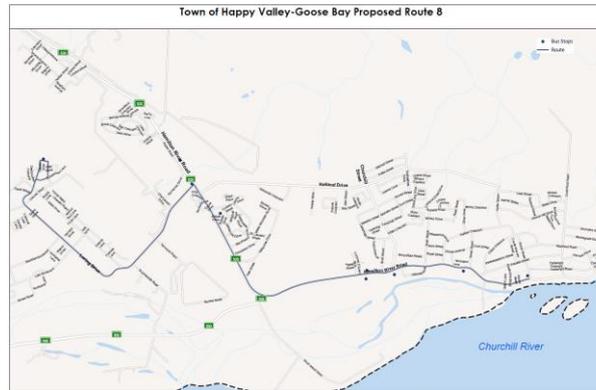
Email: cd@townhvgb.com

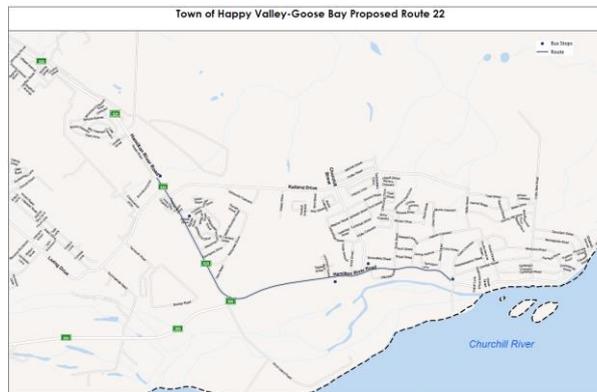
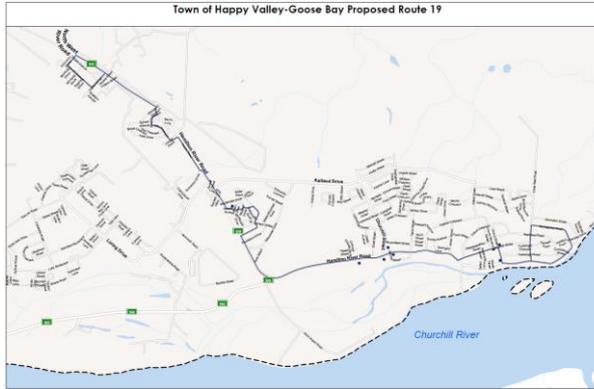
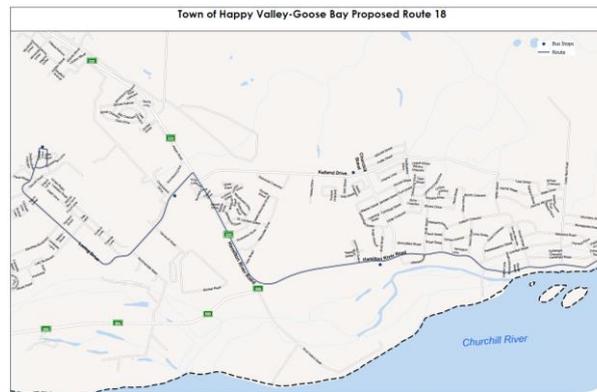
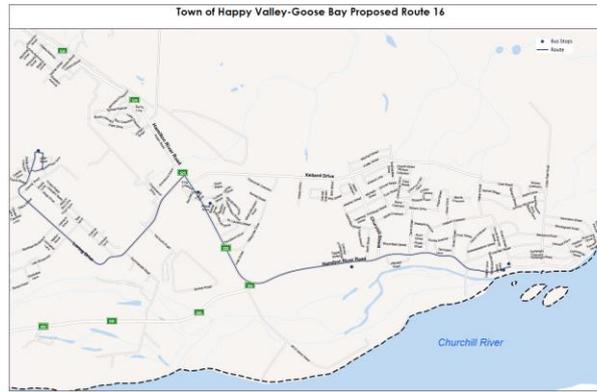
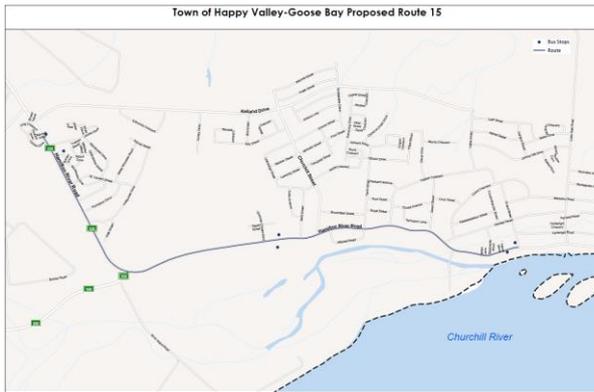
List of Activities

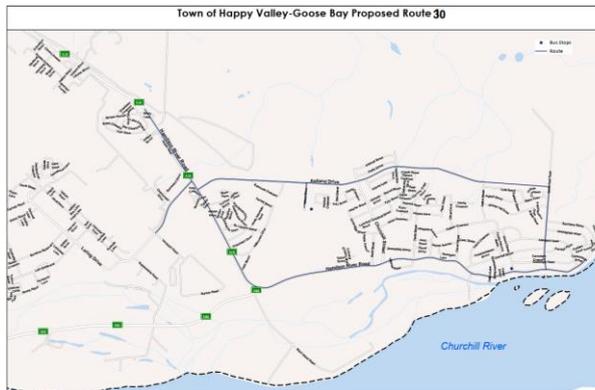
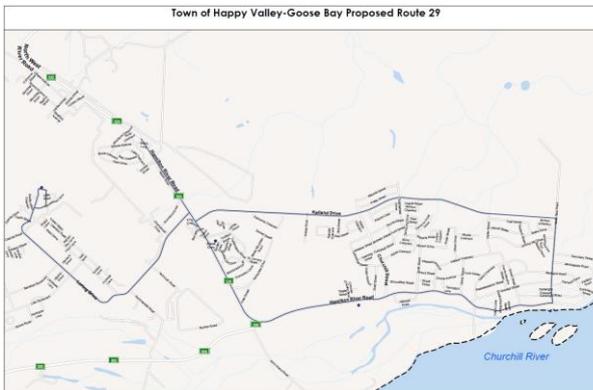
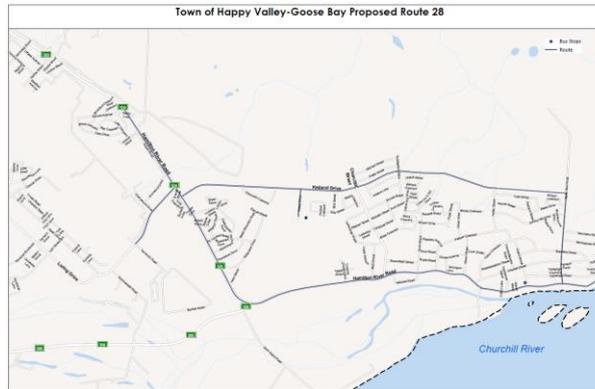
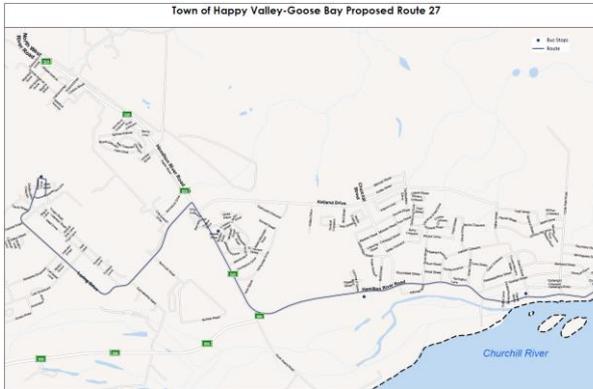
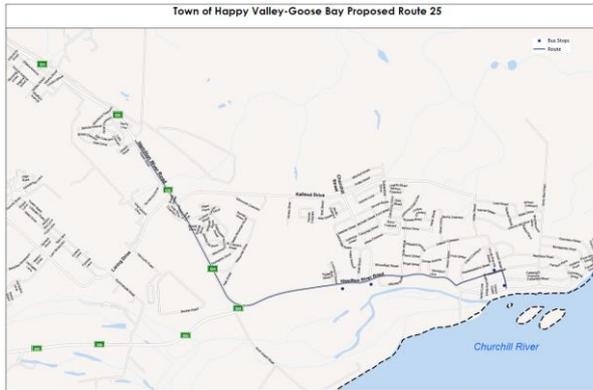
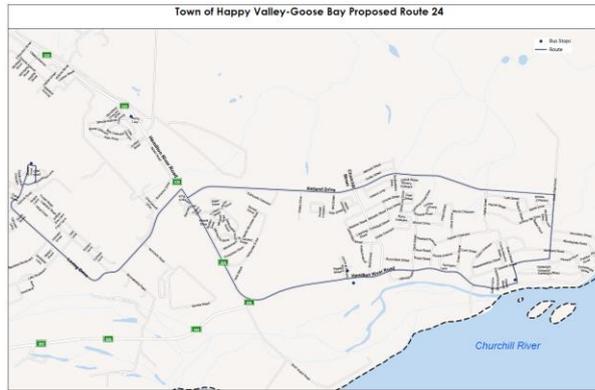
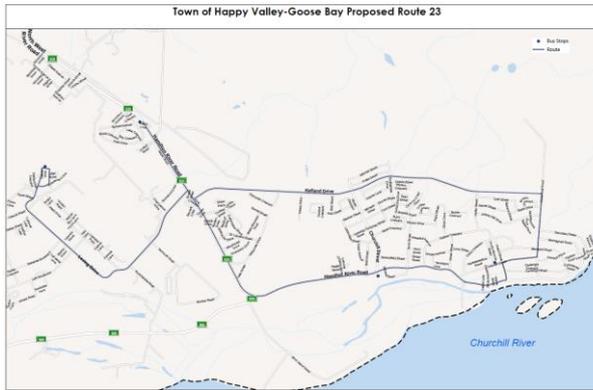
Session 1: Public Transit and Your Community			
10 min	Chat Box	What are the major transportation issues in the region of Happy Valley-Goose Bay (HV-GB)?	Individual
10 min	Chat Box	What are the major benefits that public transit could bring to you, your family and your community (HV-GB)?	Individual
10 min	Break-out Room	Think about FIVE guiding principles for the transit service at Happy Valley-Goose Bay (HV-GB)	Group
15 min		Report back your conclusion regarding FIVE guiding principles for the transit service at Happy Valley-Goose Bay (HV-GB)	Individual
Session 2: Design your Transit System			
10 min	Chat Box	Discuss what features (e.g., fare collection system, fixed or flexible route etc.) you would prefer for the transit service at Happy Valley-Goose Bay (HV-GB)?	Individual
20 min	Break-out Room	Draw a transit route and locate key destinations for the transit service at Happy Valley-Goose Bay (HV-GB)	Group
15 min		Present an exact summary for transit route plan at Happy Valley-Goose Bay (HV-GB)	Individual
5 min	Chat Box	What is missing in the focus group discussion? Any additional comments	Individual

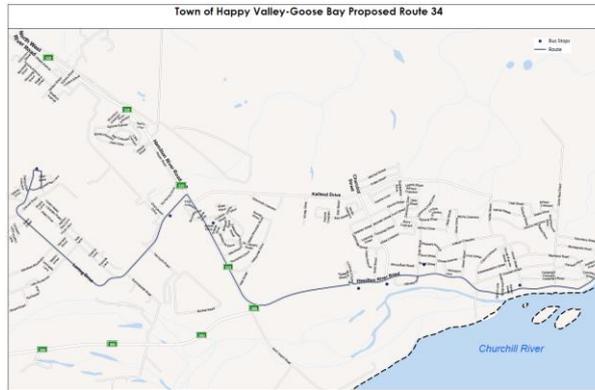
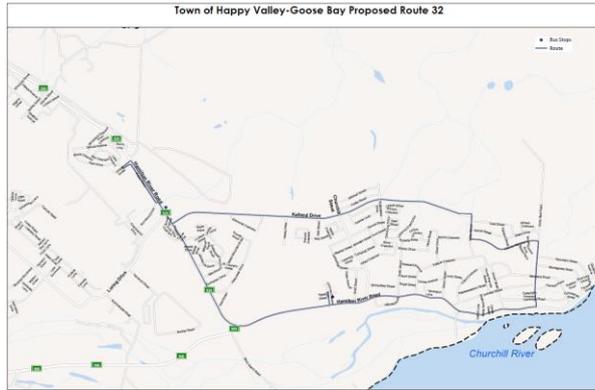
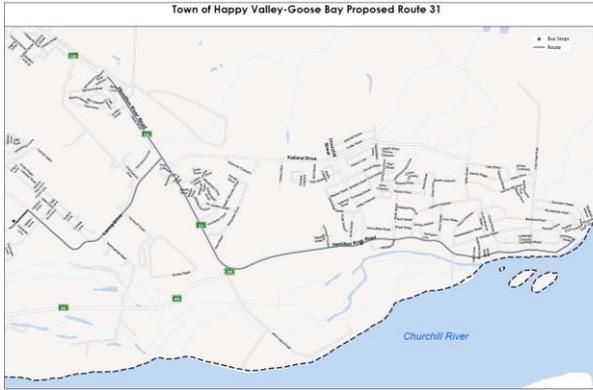
Participants' Proposed Bus Routes









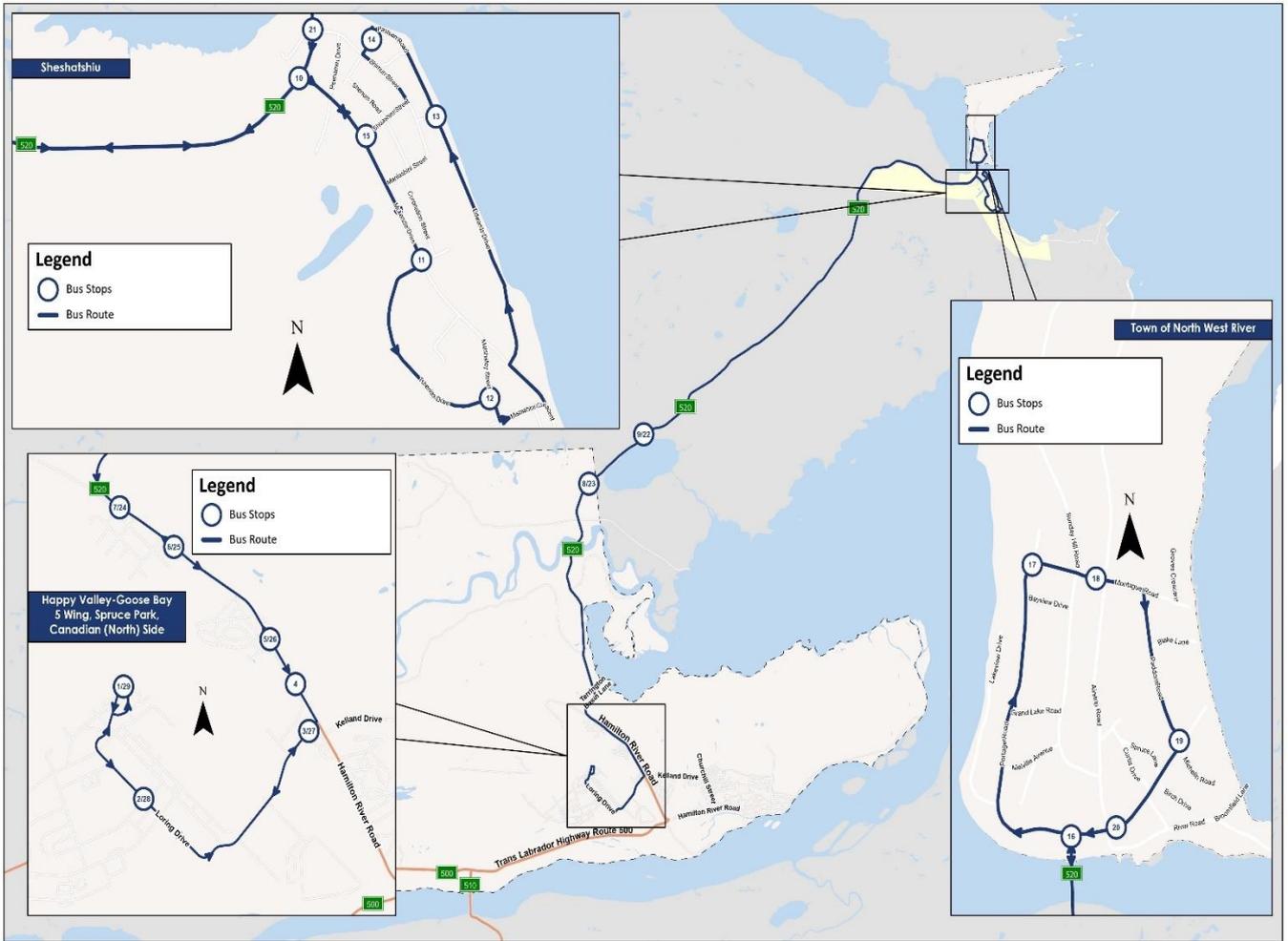


APPENDIX C (PROPOSED BUS ROUTES)

Bus Routes



Proposed Bus Route for Phase-1



Proposed Bus Route for Phase-2