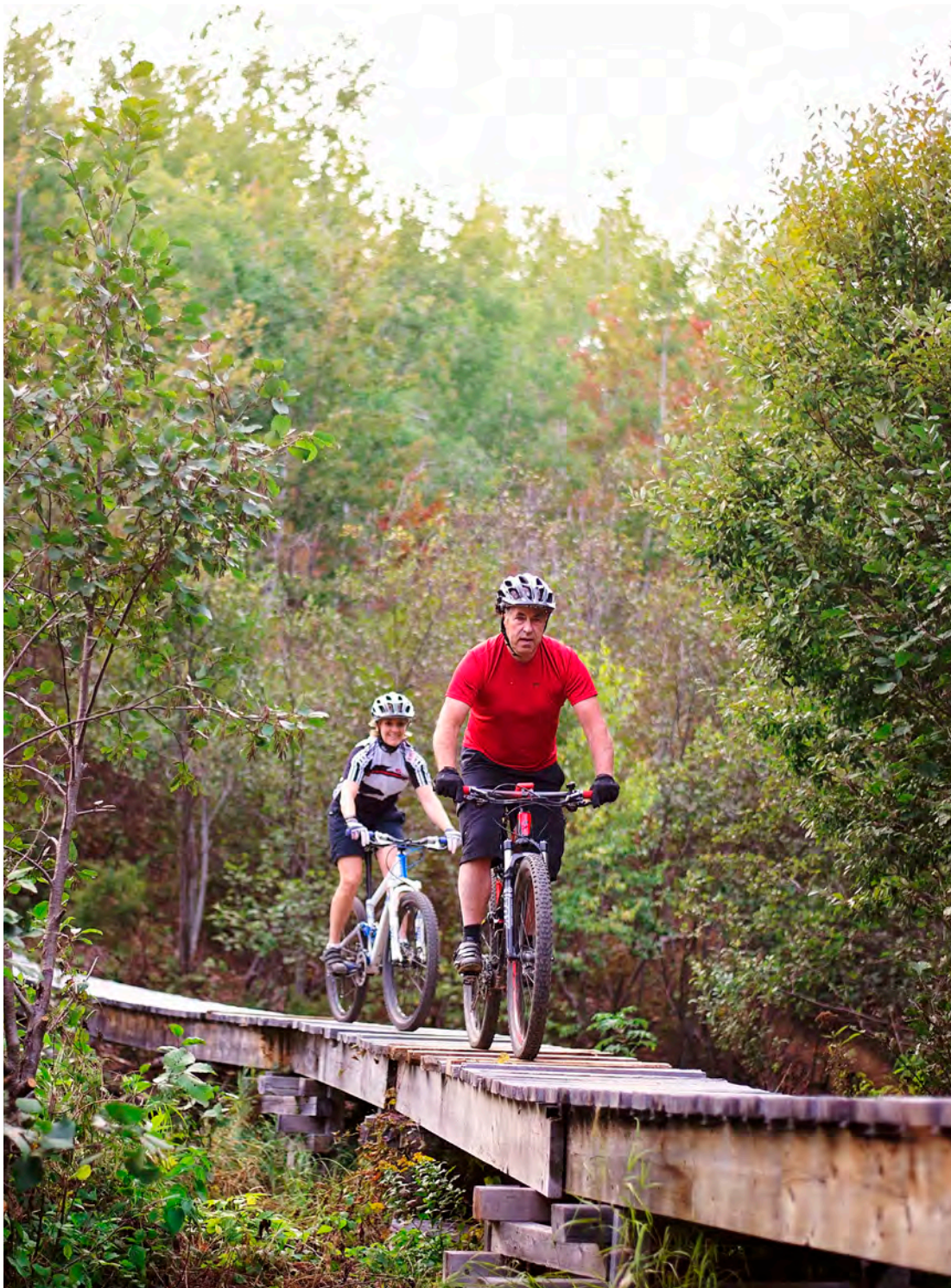


MIRAMICHI

ACTIVE TRANSPORTATION PLAN



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The City and Consultant team would like to thank the following organizations for their contribution to the report:

Greater Miramichi Regional Service Commission

Miramichi Chamber of Commerce

Newcastle Business District

Miramichi Cross Country Ski Club

Miramichi Mountain Bike Club

Miramichi Off-Road ATV Club

Miramichi Outback Trail Runners

Miramichi River Runners

Miramichi Cyclists for Active Living

Miramichi Valley Snowmobile Club

New Brunswick Federation of Snowmobile Clubs

Miramichi Regional Tourism Association (MRTA)

Miramichi Transit

Miramichi Multicultural Association

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EXECUTIVE SUMMARY

In 2010 The Glenn Group was first hired to develop an Active Transportation Plan for the city. At that time, the population of Miramichi was below the Provincial average for health and was a predominantly sedentary, vehicle-centric community. The Plan aimed to educate the community about the benefits of Active Transportation, focusing specifically on health. Since that time Active Transportation (AT) has become a cornerstone of urban design and of attractive communities. It has been fast rising on the list of desirable attributes when selecting a place to live. Since the publishing of the Plan in 2010, a number of neighbouring communities in the province have made huge strides in developing extensive Active Transportation networks which are capable of attracting tourists as well as new residents.

Presently, Miramichi has 34 km of trails throughout the City. Residents are now demanding that the city develop an Active Transportation network to make it competitive with its neighbours. The awareness and appetite for an AT Plan now exists; it is time to implement solutions that connect the city through a network of trails.

The 2010 Miramichi Active Transportation Plan did a good job of introducing the value of Active Transportation to Miramichi. It included a focus on educating about the benefits of a healthier lifestyle. Through this education and the evolution of cultural practices over the past 10 years, the awareness is now established.

"The implementation of the Miramichi Active Transportation Master Plan will create a vibrant, walkable and wheelable community along the riverfront; one that will be attractive to new residents, retain young families and reassure seniors they can age in place."

Project Objective

The goal of this study is not to reinvent the sound recommendations of the 2010 report, but to build upon it and address any issues or opportunities which have arisen since the publishing of that report.

This plan answers specific questions related to the unique situation in Miramichi which investigates how other similar lifestyle communities have integrated AT trails and motorized trails. The specific questions posed by the client are summarized below:

- How can multiple user groups share trails?
- How can the city partner with user groups for construction and maintenance?
- How can public streets be accessed by all-terrain vehicles and snowmobilers?
- Where should trails be added or enhanced?
- How should river crossing be approached?
- How can downtowns, tourism and recreation assets be connected?
- Where can bike lanes be accommodated on public streets?
- Where should paved trails be considered?

Our process included consultation of key stakeholders, as identified by the client, providing representation of community interests in these groups, who will be the primary users of the AT and motorized trail network.

Case studies of other AT plans in regions with a similar population density were examined to establish best practices.

An Active Transportation Plan provides the basis for a municipality to encourage, support, and expand the role of AT within their community. In order to be successful, an AT Plan must outline not

only the infrastructure and physical layout of the network, but also the programs and policy changes that will support the use of that network.

What is an Active Transportation Plan?

The Miramichi Active Transportation Plan is an opportunity to direct high quality and focused infrastructure development, to establish a clearly defined sustainable transportation network. The plan will respond to the demands of residents to bring the community in line with contemporary lifestyle ambitions. It will create the framework for a physically, socially, and mentally healthy community. The implementation of the Miramichi Active Transportation Plan will create a vibrant, walkable and wheelable community along the riverfront; one that will be attractive to new residents, retain young families and reassure seniors they can age in place.

The Context

A realistic AT plan for Miramichi must recognize the unique social and physical aspects of the City. The plan presented in this report recognizes:

- The low density and rural nature of some neighbourhoods.
- That the destinations are spread out.
- That the Miramichi River bisects the City.

The Process- Gathering the information

Following a detailed inventory of existing infrastructure- roads, trails, public transit route, planned infrastructure upgrades, all assets were mapped in order to identify potential connections and existing gaps.

A detailed consultation process ensued. In order to get an understanding of the work being done and the needs and wants of the various user groups throughout the city, a series of stakeholder

interviews were conducted. The following is a list of organizations that were engaged in the process:

Stakeholder Organizations:

- City of Miramichi- Community Wellness and Recreation
- City of Miramichi- Engineering
- City of Miramichi- Economic Development and Tourism
- Greater Miramichi Regional Service Commission
- Miramichi Chamber of Commerce
- Newcastle Business District
- Miramichi Cross Country Ski Club
- Miramichi Mountain Bike Club
- Miramichi Off-Road ATV Club
- Miramichi Outback Trail Runners
- Miramichi River Runners
- Miramichi Cyclists for Active Living
- Miramichi Valley Snowmobile Club
- New Brunswick Federation of Snowmobile Clubs
- Miramichi Regional Tourism Association (MRTA)
- Miramichi Transit
- Miramichi Multicultural Association

Public Engagement:

Following the stakeholder consultation, an online survey was developed using the city's new engagement tool: engagemiramichi.ca which delved further into issues that had been identified thus far in the process. The Online survey used multiple choice questions as well as providing an open forum for residents to express individual concerns.

Of the 1,452 visitors to the site, 930 were informed (browsed multiple pages) and 348 responded to the survey.

Engagement Outcomes

Key takeaways from the public engagement include:

- Miramichi is still a highly vehicle-centric city with 88% of residents commuting to work or school by car
- Trails are primarily used for walking or running (89%), 48% of users will participate in winter recreation such as; cross-country skiing or snowshoeing
- Only 5% of users use the trails to commute.
- The focus of the trail system should be to develop trails for recreational walkers and joggers first.
- Winter recreation is also highly popular among residents
- Those residents that do use street shoulders all comment on the insecurity of using such routes. Others identify the safety concern as the reason why they do not use these routes. Currently 10% of users admit they use road shoulders or travel local roads in some way, but most comment that they do not feel safe doing so 70% of users are satisfied with the condition of current trails in the city.
- The #1 priority for locals is the creation of a waterfront trail (56%) followed closely by having a paved route and better connections between trails.
- Other popular desires include:
 - Creation of bike lanes 33%
 - More sidewalks 32%
 - Improve the condition of existing trails 32%
 - Improve bridge crossing conditions for pedestrians and cyclists 27%

- Creation of groomed winter trails 27%
- There is a demand for more public boat launches, specifically for Personal Watercraft (PWC).

Goals + Objectives:

The Goals and Objectives can be summarized as follows:

Goal 1: To connect the city so people can access trails from anywhere and connect to all other areas of the city

Objectives:

- Develop a spine linking all regions of the city and to which all trails can connect
- Identify and close gaps in the network

Goal 2: To be appropriately scaled in cost of both construction and implementation

Objectives:

- Develop solutions that serve the greatest number of users
- Develop a plan that can be tackled in many phases as budgets allow
- Build off of existing AT assets
- Find cost effective solutions that work within the existing infrastructure

Goal 3: To make Active Transportation accessible to all users

Objectives:

- Design for all forms of active recreation
- Develop solutions for universal design

Goal 4: To provide a Year-Round Active Transportation network

Objectives:

- Develop solutions for a variety of winter activities
- Identify areas of trail to be groomed in winter for pedestrian traffic

Goal 5: To make Active Transportation in the City of Miramichi safe

Objectives:

- Identify any unsafe zones of activity and develop solutions to make them safe
- Develop on-road AT routes that are safe for pedestrians and cyclists
- Educate motorists and trail users about proper etiquette and safe practices
- Provide AT routes and connections to bus stops

Goal 6: To provide tourism opportunities through Active Transportation

Objectives:

- Identify a solution to the river crossing for Snowmobiles
- Identify businesses that could offer tours/ rentals along AT routes
- Connect trails to existing downtowns and commercial hubs
- Highlight the city's best natural and cultural assets

Chapter 4: Actions

This chapter takes the outcomes of the information gathered and forms the action plan to be implemented. The foundation for all design decision was to focus on the principles identified under the Goals and Objectives.

Action 1: Completing the City-Wide Active Transportation Network

The Spine

The Spine should be the foundation for future expansion. It should connect the downtowns, neighbourhoods, schools, recreation hubs and retail centres by following these principles:

- Staying as close as possible to the river or views to the river
- Using existing trail assets wherever possible
- Encompassing the entire city- bridge to bridge in a closed loop

Secondary Trails

Upon completion of the Waterfront Loop Trail (the Spine), we were able to overlay all the data including existing AT Routes, the proposed Spine, municipal planned upgrades (new sidewalks) and transit routes in order to identify the gaps. Connections to the following were reviewed:

- School Zones
- Access to Recreation
- Downtowns
- Transit

Establishing a Water- Based Route

The 2020 Economic Development and Tourism Strategy identifies Capitalizing on the Miramichi River as one of its 6 Strategic Priorities. The water route directly supports this objective- improving this connection and encouraging residents and visitors to engage with the river more. Focusing on the river creates an opportunity to create a more unified tourism destination. The water route identifies boat launches and docking space for both power boats and personal watercraft (PWC). There are countless small business opportunities associated with the network from personal watercraft rentals to waterfront patios and tour operators. The water route will establish a strong foundation and catalyst for such investments.

Boat launches include both existing and proposed locations. Presently there is a demand for more boat docking space and trailer parking within the city. Two potential locations have been identified in this report: Downtown Newcastle and the Nelson Groundwood site.

Action 2: Special Trail Types

Paved Trails

Paving of trails was identified as the second highest priority in the AT Plan by residents with 48% of residents listing it in their top 3.

The paving of trails should be an ongoing long-term plan whereby the mileage of paved trails is increased over time. The primary route to pave, the trail from downtown Chatham to Loggieville, should be tackled right away, starting with the section from Water St. to Wellington St. just before Lebreton Dr. Another opportunity for paved trails includes a partnership with the cross-country ski club.

Groomed Winter Trails

In our climate, winters are long and cold, and days are short. Recreation opportunities are important for both mental and physical wellbeing. Groomed winter trails would provide a variety of recreation opportunities within the city.

94% of respondents said they would use groomed trails throughout the winter, while 85% were willing to travel to access the groomed trails. This means residents would appreciate a destination for winter recreation and are not expecting trails to be groomed throughout the city.

A number of options are explored in the report for the development of groomed winter trails:

- French Fort Cove
- Miramichi Cross Country Ski Club (MCCSC)
- Existing ATV and Snowmobile Trails

Joint-Use Trails

There are two types of joint-use trails addressed in the AT Plan: Human Powered- ATV trails and Human Powered-Snowmobile trail.

One of the benefits of joint-use trails is that regional ATV and snowmobile clubs invest in maintaining their own trails, so the city can benefit from shared resources in maintaining the trails.

Joint- Use human-nonhuman trails are a relatively new practice. No formal guidelines for this trail type exist, although there are some precedent trails around the country.

Education is the key to achieving a successful shared-use trail network:

- Speed limits- speed limit signs should be posted within the shared trail
- Signage- in addition to posted speed limits, there should be safety signage posted on the trail such as shared use and, at major points of entry, etiquette signs
- Formal agreements should be signed between the city and the snowmobile/ ATV federations

Human Powered- ATV Joint-Use Trails

QuadNB Trail 1701 follows the old rail bed from Loggieville through Chatham where it connects with 1706 to continue south to Nelson. In fall of 2020 and again in spring 2021, access was granted west of Wellington St through England's Hollow, completing the route. This is the same rail bed which is used by walkers and cyclist and is flagged as the primary destination for the creation of paved trails. So far, the pilot project conducted the past two seasons has had little incident.

Human Powered- Snowmobile Joint-Use Trails

With the Snowmobile trails it is more a matter of "if it's there they will use it". There are not trails designed with the intent of being used by both snowmobilers and non-motorized users. However, in the winter, when a groomed trail exists, the temptation is to take advantage of these trails for walking dogs, snowshoeing or cross-country skiing. This behaviour should be anticipated and planned for.

Identified trails include:

- Local neighbourhoods that back on to a snowmobile trail (520, 521)
- Trails that are designated for pedestrians during other seasons (510, 511, 529)

River Crossing Strategy

According to The 2019 Snowmobile Economic Impact Study report the snowmobiling industry is worth \$90 million to New Brunswick's economy. Our province has the potential to grow its industry substantially. However, the primary North- South trail traveling through New Brunswick is Route 52 with the Miramichi River Crossing being the one major interruption. Two possible solutions exist:

The Morrissy Bridge

This is the preferred option as it could separate AT users from vehicular traffic, be a valuable year-round solution and would accommodate the widest range of users; including pedestrians, cyclists, snowmobiles and ATVs. The pros and cons of this option are explored in this report; however the benefits are substantial and warrant proper consideration and an updated feasibility study.

The Miramichi Bridge

The City of Miramichi paid for an engineering study performed by CBCL in 2020. The solution presented is viable for the snowmobiles although a number of pedestrian considerations would need to be made. The project would close the gap in the provincial snowmobile route and open up the province to long distance snowmobilers coming from Quebec and further. It would be a major boost to not only the municipality but, more so to the greater provincial economy.

Action 3: Wayfinding

Signage is used to assist users in identifying and planning their route, for safety, ensuring proper etiquette and to inform.

The city recently updated their signage. All AT signage (except standard snowmobile and ATV signage) would follow the strategy established by the city.

Chapter 5: Design Considerations

Trail Typologies

The standard typologies (materials, dimensions, facility elements) which should be respected for each trail type are outlined in this section.

Water Based Facilities

This section details standards that should be followed when developing personal watercraft launches to optimize access and respect environmental considerations.

Universal Design/ Accessibility

Universal Design is a foundational aspect of Active Transportation planning. It ensures all parts of the transportation network are accessible to people of all ages, mobility, and cognitive levels. It is an inclusive approach to design that considers every user. In this section a number of universal design principles are outlined which should be applied to the design and construction of the AT Routes.

Accessibility Challenges include:

- Mobility
- Vision
- Hearing
- Comprehension
- Strength
- Dexterity

Site-Specific Safety Solution

In addition to typical design standards, there are often individual locations that require site-specific solutions. This section outlines solutions for a number of individual transportation safety concerns in the city:

- King St./ Highway 11 Crossing
- Highway 8/ Water St. Roundabout
- Centennial Bridge Access
- Multi- Use Trail Highway Crossings

Chapter 6: Implementation

The AT Plan was prepared to optimize existing conditions. The Waterfront Loop Trail was developed by connecting existing transportation routes around the river. Linking existing infrastructure and maintaining pre-existing routes, help minimize costs and maximize impact. The strategy is one which can be realistically achieved in the foreseeable future.

This report describes both a long-term 20- year vision and achievable short to medium term 10-year plan for Active Transportation in Miramichi. Initiatives with a high profile and ease of implementation should be given the highest priority, especially where cost is not prohibitive. Larger and more complex projects will require time and further study to work out all the details required for implementation.

Phase I focuses on establishing the Spine, whereas closing the gaps and enhancing the services would follow in the second phase. Some proposed initiatives will be completed in an ongoing series of phases which may continue to be enhanced for the long term.

Costs

The cost section breaks the projects down by trail type and phase of construction. Costs shown are general numbers. However, for much of the work, detailed engineering studies will be required which will determine finer costs such as deviations from the typical trail dimensions, and additional considerations (culverts, relocating services, etc.) The costs included in this report should be considered a starting point, but allowance should be made to conduct engineering studies and for unknown costs.

Overall Costs:

Waterfront Loop	\$ 1,826,875.05
Secondary Trails	\$ 372,416.00
Paved Trails (not including MCCSC)	\$ 733,194
Water Trail (total)	\$ 160,022.50
Highway 8/ Water St. Roundabout Crosswalk	\$ 63,373.27
Centennial Bridge Approach (not including pedestrian trail on bridge)	\$ 139,219.58
Highway 11/ King St. Crossing	\$ 677,913.50

Unit costs for each trail type are included as well to help estimate any additional trails which may result from future development plans.

Maintenance

The development of this plan took into consideration the maintenance capacity of the city, relying on partnerships where possible. However, maintenance costs are a real financial factor when budgeting for any new infrastructure. Not only should they be considered before a new trail is constructed, but a maintenance crew should be expected to be a regular, on-going budget item if the city is going to develop a complete Active Transportation network. Partnerships will be extremely important, but they only address sections of trail that are shared with other user groups. There are ongoing costs associated

with any infrastructure. Where partnerships exist, there will be a quid pro quo and some form of cost born by the city.

In order to ensure the optimal longevity of the trails, and for public safety, routine inspections should be carried out as part of the regular maintenance schedule. Additional inspections should be conducted at the start and end of a season and after any major natural event (such as rain or snowstorms). Contact information should be posted regularly along trails and users encouraged to contact the city regarding any maintenance issues. These should be addressed promptly to maintain safety and maximize surface life cycle.

Conclusion

This report is born of the needs and wishes of resident of Miramichi. The approach is centered around providing a diversity of active transportation types for all user groups. The focus was on producing something that was appropriately scaled to the size, capacity, and finances of the city, in order to provide practical, realistic solutions.

As part of the maritime climate, the plan was viewed as a 4-season strategy to offer recreation and commuting solutions throughout the year.

Strategies to minimize cost and maximize return were founded on using existing assets and developing an array of partnerships. With an overall implementation budget of roughly \$ 4,000,000.00 this plan is not just a vision, but a realistic solution for the city.

This is only the beginning. Once the foundation has been established, greater wish items may be added and the quality of the Active Transportation offering enhanced in years to come

CHAPTER 1 - INTRODUCTION

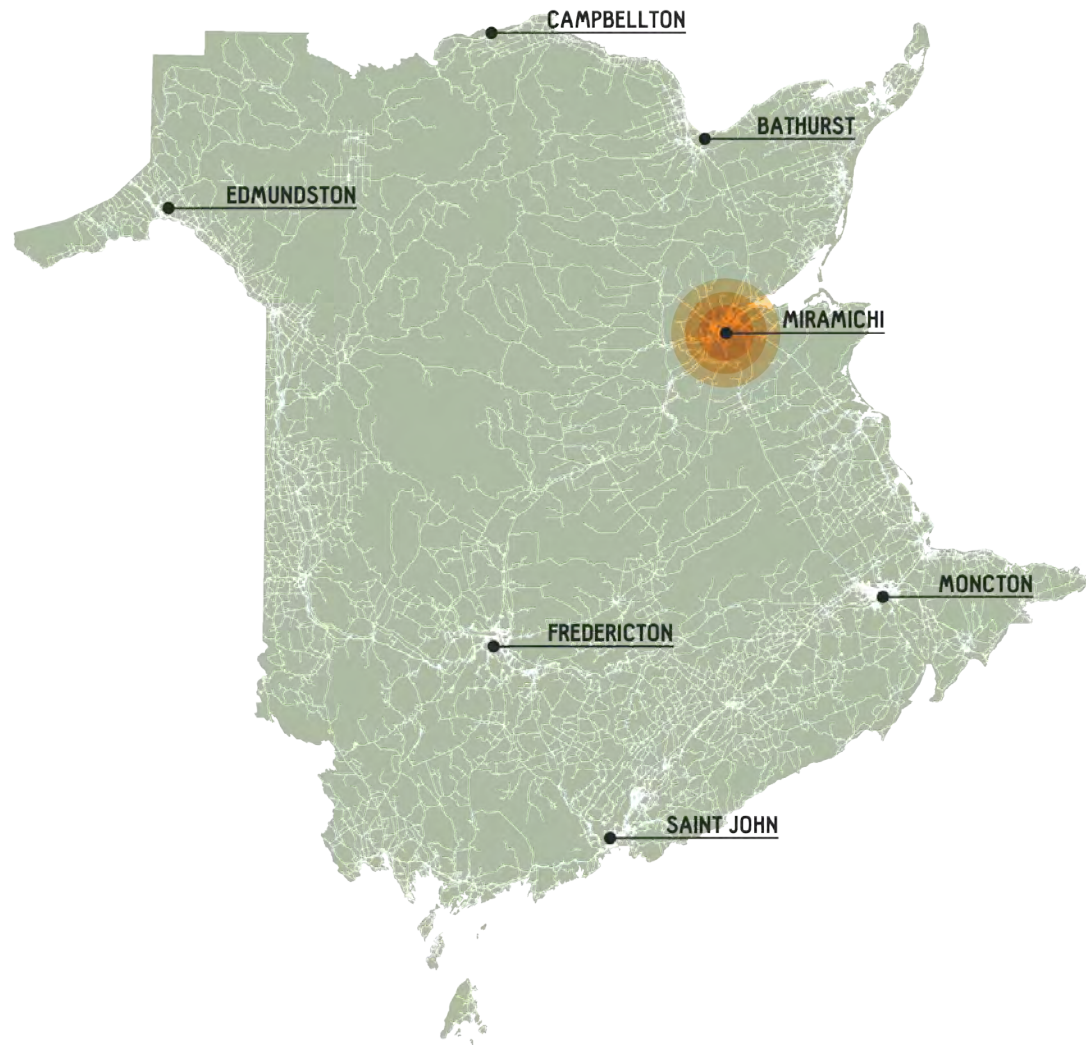
BACKGROUND

The City of Miramichi is located in Eastern New Brunswick with a population of 17,537 (2016). In 2010 The Glenn Group was first hired to develop an Active Transportation Plan for the city. At that time, the population of Miramichi was below the Provincial average for health and was a predominantly sedentary, vehicle-centric community. The Plan aimed to educate the community about the benefits of Active Transportation, focusing specifically on health.

Since that time Active Transportation (AT) has become a cornerstone of urban design and of attractive communities. It has been fast rising on the list of desirable attributes when selecting a place to live. Since the publishing of the Plan in 2010, a number of neighbouring communities in the province have made huge strides in developing extensive Active Transportation networks which are capable of attracting tourists as well as new residents. A highly successful example is the Véloroute de la Péninsule Acadienne which connects 14 municipalities along the Acadian Peninsula. It is described as *"a unifying project and driving force of sustainable economic development that emphasizes on cycling tourism while improving the health and well-being of the population and protecting the environment."*

Presently, Miramichi has 34 km of trails throughout the City. Residents are now demanding that the city develop an Active Transportation network to make it competitive with its neighbours.

The awareness and appetite for an AT Plan now exists; it is time to implement solutions that connect the city through a network of trails.





PLAN PURPOSE

The 2010 Miramichi Active Transportation Plan did a good job of introducing the value of Active Transportation to Miramichi. It included a focus on educating about the benefits of a healthier lifestyle. Through this education and the evolution of cultural practices over the past 10 years, the awareness is now established. The appetite for an Active Transportation network is there, and the individuals on Staff and Council are leading the initiative and committed to its implementation.

Much of the recommendations of the 2010 plan are still relevant, but the climate now is much more action-oriented. The goal of this study is not to reinvent the sound recommendations of the 2010 report, but to build upon it and address any issues or opportunities which have arisen since the publishing of that report.

This plan answers specific questions related to the unique situation in Miramichi which investigates how other similar lifestyle communities have integrated AT trails and motorized trails. The specific questions posed by the client are summarized below:

- How can multiple user groups share trails?
- How can the city partner with user groups for construction and maintenance?
- How can public streets be accessed by all-terrain vehicles and snowmobilers?
- Where should trails be added or enhanced?
- How should river crossing be approached?
- How can downtowns, tourism and recreation assets be connected?
- Where can bike lanes be accommodated on public streets?
- Where should paved trails be considered?



The plan was developed at a regional scale, reviewing all types of trails in all parts of the city. Consultation included a wide array of user groups across the city.

Our recommendations are aligned with the framework of relevant guiding documents developed for and by the city, including but not limited to:

- Miramichi Climate Change Adaptation Plan
- Miramichi Economic Development Strategy
- Miramichi Multiplex Needs Assessment
- Miramichi Downtowns Master Plan
- Miramichi Strategic Plan & Focus Areas Road Map
- Miramichi Municipal Plan
- City of Miramichi Age-Friendly Action Plan
- Miramichi Active Transportation Master Plan (2010)

Our process included consultation of key stakeholders, as identified by the client, providing representation of community interests in these groups, who will be the primary users of the AT and motorized trail network.

Case studies of other AT plans in regions with a similar population density were examined to establish best practices.

The Outcomes of the report are outlined in **Chapter 4: Actions:**

Action 1: Completing the City-Wide Active Transportation Network

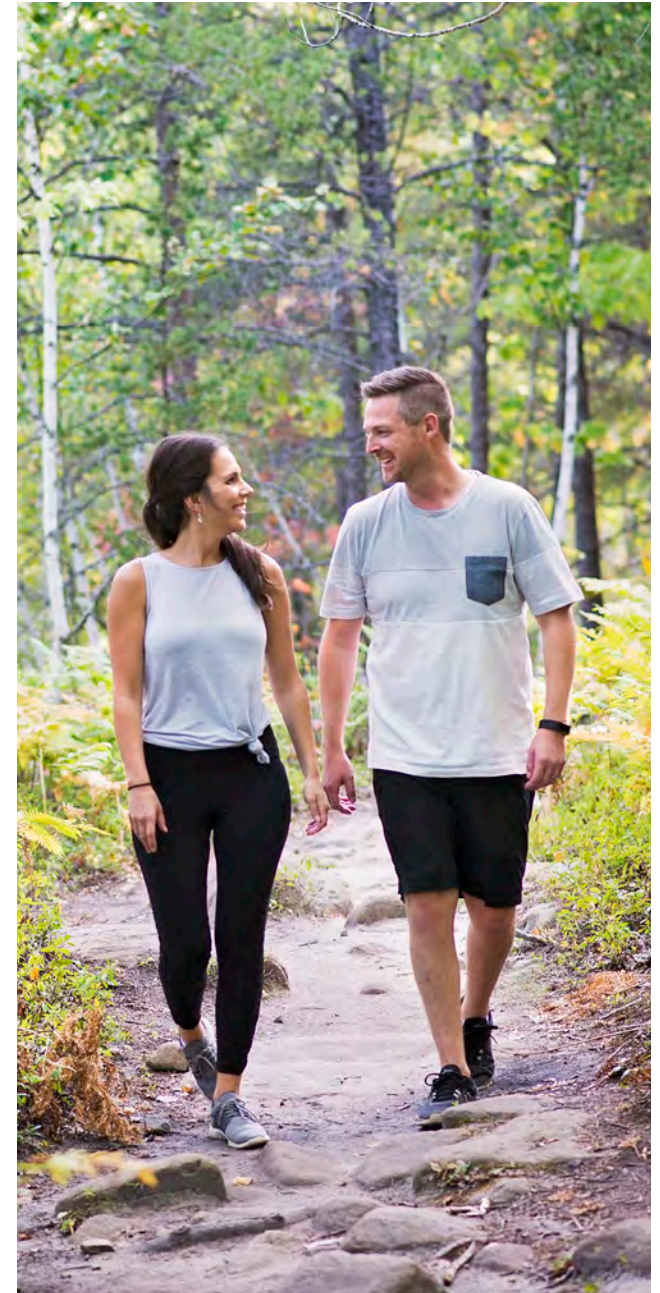
- o The Spine
- o Secondary Trails
- o Closing the Gaps
- o Establishing a Water-Based Route

Action 2: Special Trail Types

- o Paved Trails
- o Groomed Winter Trails
- o River Crossing Strategy

Action 3: Wayfinding

Design Considerations and the Implementation Strategy will ensure the execution of the plan takes a holistic approach and integrates into the city's future plans seamlessly.



WHAT IS ACTIVE TRANSPORTATION?

Active Transportation (AT) can be defined as any form of human powered transportation, such as walking, cycling, running, wheeling, skiing, or paddling. All people, to some extent, engage in active transportation daily, and there are many ways to integrate it into everyday life. Active transportation has many benefits for individuals and for the broader collective, including improvements to health, the environment, the economy, and the community.

What is an Active Transportation Plan?

An Active Transportation Plan provides the basis for a municipality to encourage, support, and expand the role of AT within their community. In order to be successful, an AT Plan must outline not only the infrastructure and physical layout of the network, but also the programs and policy changes that will support the use of that network.

The Miramichi Active Transportation Plan is an opportunity to direct high quality and focused infrastructure development, to establish a clearly defined sustainable transportation network. The plan will respond to the demands of residents to bring the community in line with contemporary lifestyle ambitions. It will create the framework for a physically, socially and mentally healthy

community. The implementation of the Miramichi Active Transportation Plan will create a vibrant, walkable and wheelable community along the riverfront; one that will be attractive to new residents, retain young families and reassure seniors they can age in place.



THE BENEFITS OF ACTIVE TRANSPORTATION

There are numerous benefits of active transportation, for individuals, the community as a whole, and the entire municipality. These benefits include: improvement to public health, greater sense of personal safety and security, increased efficiencies for transportation, mitigated environmental impacts of vehicular infrastructure, local and regional economic stimulus, and enhanced community development.

Health

Active Transportation provides an enjoyable, convenient and affordable means of exercise and recreation. Physical inactivity is a leading contributor to a number of health implications. By encouraging the participation of Miramichi residents in purpose-driven physical activity, active transportation can aid in working towards greater overall community health and well-being.

Unlike traditional motor vehicle transportation, active transportation emits none of the airborne particulates that exacerbate respiratory ailments, and with a reduction of dependence on automobiles, it will help to decrease related respiratory problems. Having a healthier community will also help with reduced health care costs.

Having a trail network that allows people to stay active and connected to nature is vital to our mental health, as are opportunities to remain social.

Age-Friendly Design

Another increasingly prevalent priority is Age-Friendly Communities- designed to be “inclusive and accessible urban environments that promote active aging.” The Active Transportation Plan responds to the city’s Age-Friendly Action Plan with regard to 4 of the WHO’s eight domains that influence the health of older people.

1. Outdoor spaces and building
2. Transportation
3. Social Participation
4. Respect and social inclusion

An accessible, connected Active Transportation network supports Miramichi’s Age-Friendly Action Plan mandate:

“...identifying ways the City may improve upon services and offerings to the senior population to make their lives more safe, health and involved/participatory....”

The AT Plan will provide much of the infrastructure required for the city’s aging population to remain active and healthy. According to the data gathered by the Miramichi Age-Friendly Community Steering Committee:





- 24% of the population is +65 years old,
- 38% report being physically active
- The top 5 physical activities reported include walking (1) and Jogging/running (4)

As they age, many seniors become dependent on other means of transportation besides the vehicle to shop, get to appointments and socialize. Closing the gaps in Miramichi's AT network, ensuring seniors can use a trail network to fulfill their daily needs is important to the livability of the City for seniors.

Safety

Increasingly, people choose to drive rather than actively commute or recreate, because of their fear of traffic, unfamiliar surroundings, distance, and crime. Well designed AT routes and roads actually improve public safety through the incorporation of CPTED principles, (Crime Prevention Through Environmental Design), the safety of users (both perceived and real) can be increased, resulting in a higher use of the network.

CPTED Principles

Natural Surveillance: Areas that maximize the visibility of users are less likely to be targets of crime.

Territorial Reinforcement: Physical design can help define the limit of public and private spaces.

Natural Access Control: Reduces the opportunity for crime by denying access to potential targets and creating a sense of risk in potential offenders.

Maintenance: Facilities that are properly maintained are more inviting to users than those that are run down.

Transportation

Active transportation is a means of transportation that is efficient, affordable and accessible. It is the most energy efficient mode of transportation and generates no pollution. The transportation benefits of active transportation include reduced road congestion and maintenance costs, less costly infrastructure, increased road safety and decreased user costs.

As more people relocate to Atlantic Canada from larger urban centres, there is a demand and expectation to be able to live and commute vehicle-free.

Roadway funding requirements include maintenance costs, safety and enhancement costs plus the addition of roadway capacity through lane widening or additions. An emphasis on walking, cycling and other active transportation modes can result in

a reduction in these roadways costs. For example, bicycles are lightweight vehicles that take up little space and cause little wear and tear on a road surface.

Another benefit of reduced vehicle use is a decrease in the amount of parking spaces required. Parking is a significant added cost of operating a vehicle. Encouraging more people to walk and cycle to work could lead to a reduction in the number of parking spaces required at a place of employment.

Environmental

Active transportation is an energy efficient, non-polluting mode of travel. It can help to alleviate traffic congestion, air pollution, noise and the need for vehicle infrastructure such as increased numbers of roads and parking structures. Automobile exhaust contributes a whole host of harmful substances into the atmosphere, including greenhouse gas emissions, which are responsible for global warming. Airborne toxins and particulates reduce the quality of the air we breathe, which is one reason why forms of active transportation are encouraged.

Short distance, motor vehicle trips are the least fuel-efficient and generate the most pollution per kilometer. These trips have the greatest potential of being replaced by walking or cycling trips and integrated walking-transit and cycling-transit trips.

Shifting to these modes can mitigate global climate change, local air pollution, photochemical smog, acid rain, water pollution and hydrologic disruptions, land use and noise pollution.

Reducing the amount of vehicles on the road reduces the number of pollutants that are emitted into the atmosphere. Climate change is another problem that can be mitigated by encouraging drivers to use other modes, or to travel outside rush hours.

- 45% of transportation-related greenhouse gas emissions in Canada originate from light cars and trucks (Transport Canada).
- 22 million liters of fuel could be saved each year if 50% of Canadian workers who live within walking distance of their workplaces left their vehicles at home (SOURCE).

Economic

Active transportation is the most energy efficient and least costly mode of transportation. Shifting to active modes of transportation results in huge savings in personal and family transportation costs. Active transportation also allows for a reduction in road construction, repair and maintenance costs, costs due to air pollutants, health care costs, safety costs and external costs due to traffic congestion.

This will also allow for increase land values in areas adjacent to active transportation infrastructure. By providing infrastructure for active transportation it will be meeting the needs of those who don't have the option to drive, due to affordability, aging population or youth.

- Trails are less expensive than conventional roadway systems (\$1,300,000 / km two lane road expansion, \$50,000 - \$100,00 / km paved shoulder, versus \$25,000/km paved pathway).
- Trails can increase property values and improve home sales. Trails are increasingly becoming a top priority for residents when selecting a city, neighbourhood or home to purchase.
- Trails act as tourism destinations. By example, the San Antonio Riverwalk contributes an estimated \$1.2 billion annually to the local economy.
- A 10% increase in physical activity could save over \$100 million annually on the treatment of ischemic heart disease (The Conference Board of Canada).

Social

There are countless small business spin-offs which could be generated in conjunction with the network.

Active Transportation provides a setting for people to leave their homes and meet and socialize with other local residents. Interacting with neighbours can help people to feel more connected and involved with their community. This is especially true for seniors.

PLANNING CONTEXT

Several background studies informed the result of the Miramichi Active Transportation Strategy. The topical issues relevant to this study are summarized below.

Municipal Development Plan (2020)

The Miramichi Municipal Development Plan is the overarching, guiding document that provides guidance and direction to Council for the growth management of the amalgamated City of Miramichi. The intent of the plan is to facilitate long term development within the City, and has been prepared in accordance with the Community Planning Act of New Brunswick.

It is the vision of the Municipal Plan to “strengthen (its) sense of community, foster and encourage economic development, respect the natural environment and endorse the principles of sustainability.”

Active Transportation is identified as one of the 5 Key Themes Guiding Development to 2030. It is reorganized that Miramichi is positioned behind other New Brunswick cities in terms of having a well-developed active transportation network.

The Plan recognizes the influence of land use planning and community design on health determinants.

“The potential for year-round activities for those of all ages and abilities is present through trail infrastructure, both formal and informal, and they allow for linkages between neighbourhoods and various land uses throughout the City.”¹

City of Miramichi Municipal Plan SECTION 5: Health and Community Design

(C) GATHERING PLACES & TRAIL LINAGES

Policies

1. It is a policy of Council to maintain and encourage further development of a public trail network in the City.

Proposals

It is a proposal of Council:

1. To undertake a comprehensive trail network study to identify opportunities to create a city-wide trail network that connects community amenities, recreational facilities, parks, residential neighbourhoods, and commercial areas. Developing a trail network along the River should be a main consideration.
2. To encourage use of linear or ribbon open spaces, utility corridors, municipal services easements and rights-of-way, buffer zones, abandoned right-of-ways, and conservation areas to link the component parts of the greenspace–recreation facilities system.
3. Encourage public and private development of sidewalks, trails, and pedestrian paths to enhance the safety of pedestrians and non-motorized transportation (e.g. bicycles, strollers, scooters) to schools and shopping and to expand access to recreation and exploration of the City.

4. To preserve and secure public access to land required for municipal parks and trails (greenways) system and location of major recreation facilities through land ownership and alternative methods such as community stewardship, leasing, cooperative partnerships with the private sector, non-profit organizations, and local, regional, and provincial recreation user groups.
5. To address the interface between public and private property in a manner that maximizes access, visibility, recreational potential, and environmental objectives.
6. To encourage and promote, through its own resources or that of volunteers, service clubs and private landowners, the establishment, expansion, and stewardship of trails.
7. To support an update of the Active Transportation Master Plan for the City.
8. To support co-ordination of the development and best use of community resources through the establishment of appropriate mechanisms that stimulate joint planning, information exchange, and program evaluation among all community providers of recreation services and facilities.
9. To explore alternative transportation solutions for program/facility users who do not have independent travel means.
10. To facilitate and support community-based management and delivery of recreation programs and facilities and recreational greenspace assets.²

Further, the active transportation plan responds to other priorities outlined in the Municipal Plan, including Tourism and (F) Quality of Life and (H) Mobility and Connectivity.

The Plan identifies 3 Policies and 12 Proposals of council towards the development of Active Transportation within the City of Miramichi:

Policies

It shall be a policy of Council to:

1. Encourage urban design that promotes AT while ensuring good accessibility and connectivity between residential areas and commercial development through sidewalks, bike paths, and the recreational trails system.
2. Collaborate with private property owners and proponents to ensure connectivity of the active transportation network between the various residential and commercial areas, parks, and other major facilities and land uses.
3. Use the Pedestrian Crossing Control Manual published by the Transportation Association of Canada as the guide for establishing the location, signing, and type of crosswalk control on public roads.

Proposals

It shall be a proposal of Council to:

1. Encourage the Government of New Brunswick to provide safe paths for pedestrians and cyclists who cross provincial highways.
80 Transportation CITY OF MIRAMICHI MUNICIPAL PLAN
2. Create safe, convenient traffic and passage conditions for pedestrians and cyclists based on the corridors identified and set out in the Active Transportation Master Plan and Downtowns Revitalization Master Plan.
3. As part of the implementation of a pavement management system for Miramichi, to complete the data collection and analysis regarding the extent and condition of existing pedestrian facilities.
4. To use and maintain, through regular inspections, the pedestrian facility management system to establish improvement priorities and to provide "priority" sidewalks as funding permits and opportunities arise (such as the constructing of water and sewer systems or the upgrading of roads).
5. That the City give special consideration in locating new and upgrading existing pedestrian facilities in downtown areas, other business areas and in the vicinity of community facilities such as schools, educational facilities, churches, and recreation areas where the demand is greatest.

6. To encourage and support the provision and expansion of the trail/walkway system within subdivisions as well as between various parts of the City.
7. When subdivision applications are submitted for review or other opportunities arise in new development or redevelopment, to encourage provision of: a. Sidewalks along collector roads through subdivisions; and, b. Pedestrian pathways along rear lots and side lots that connect to sidewalks and adjacent trail systems.
8. That the City give attention to provision of pavement markings and signage to warn motorists of the presence of pedestrian crossings.
9. That, when upgrading roads including the placement and style of utility access hole and catch basin covers, the City consider cyclists and other non-motorized users.
10. That the City consider enhancing the safety of pedestrians and non-motorized users at the French Fort Cove causeway portion of King George Highway and at the Morrison Cove causeway portion of Water Street.
11. To give priority to locating pedestrian crosswalks at major intersections in proximity to community gathering places such as schools, recreation facilities, and shopping areas.
12. To review and consider the provision of crossing guards at strategic locations in the vicinity of the schools.³

City of Miramichi Zoning Bylaw

The City of Miramichi's Zoning Bylaw outlines permitted forms and uses for development within the Municipality. For the purposes of the zoning bylaw, the City is divided into a variety of different zones, all with various regulations and standards. Presently, the zoning bylaw does not specifically outline any requirements for sidewalks, trails, or other active transportation facilities.

THE PROVINCIAL CONTEXT

The following legislation provides the structural foundation for the development of active transportation plans and facilities within the Province of New Brunswick:

Local Governance Act (2017)

The Local Governance Act outlines the roles and responsibilities of the Province's municipalities. With respect to active transportation, the Local Governance Act, states that a road, street, or highway vested in a local government under provision of the Highway Act, is a public thoroughfare for the enjoyment and use of the public.

Motor Vehicle Act (MVA), M-17.

The Motor Vehicle Act of New Brunswick designates cyclists as having all the rights and responsibilities of the operator of a motor vehicle, except where they cannot be applied. Cyclists must legally use a multi-use trail instead of the road, if one has been provided, and are not able to cycle along controlled access highways. The MVA also requires the use of helmets for all cyclists.

The MVA also governs the actions of pedestrians, specifically at traffic control signals, where they are required to comply. Also, pedestrians are prohibited from traveling along a roadway if a sidewalk has been provided. If a sidewalk is not provided, pedestrians shall travel towards oncoming traffic, on the shoulder, or as far left as possible.

Off-Road Vehicle Act (ORVA), 0-1.5., 2003, c.7, s.1.

The New Brunswick Off-Road Vehicle Act oversees all terrain and other motorized vehicles that travel off road. The Act restricts the use of all terrain vehicles (ATVs) within 7.5 metres of the active travel zone of a highway. However, Municipalities are given the power to determine if ATV use is permitted along specific sections of highway. The ORVA also requires written permission for the grooming and use of ATV and snowmobile trails on Municipal Lands, Crown Lands, and within 25m of private residential property.

GUIDING PRINCIPLES

The principles outlined in the 2010 Miramichi Active Transportation Master Plan still hold true today.

The existing network of trails in Miramichi consists primarily of isolated trails that served the former individual communities before amalgamation, and several stretches of discontinuous section of paved road shoulders or concrete sidewalks. A realistic AT plan for Miramichi must recognize the unique social and physical aspects of the City. The following assumptions have been made in the establishment of a network strategy for the AT plan:

The plan recognizes the low density and rural nature of some neighbourhoods.

- Rural quality road conditions often provide minimal right-of-way access for AT trails.
- Long connections in rural areas will be costly; the priority will be in making a single connection on one side of a street first, rather than on both sides.

The Plan recognizes that the destinations are spread out.

- Gaps in the network need to be closed.
- Destinations like schools, parks, and shopping areas need to have efficient connections.
- There is currently only one east-west continuous road access through the northside of the river, which does not have a continuous pedestrian or cycling route within the right-of-way.

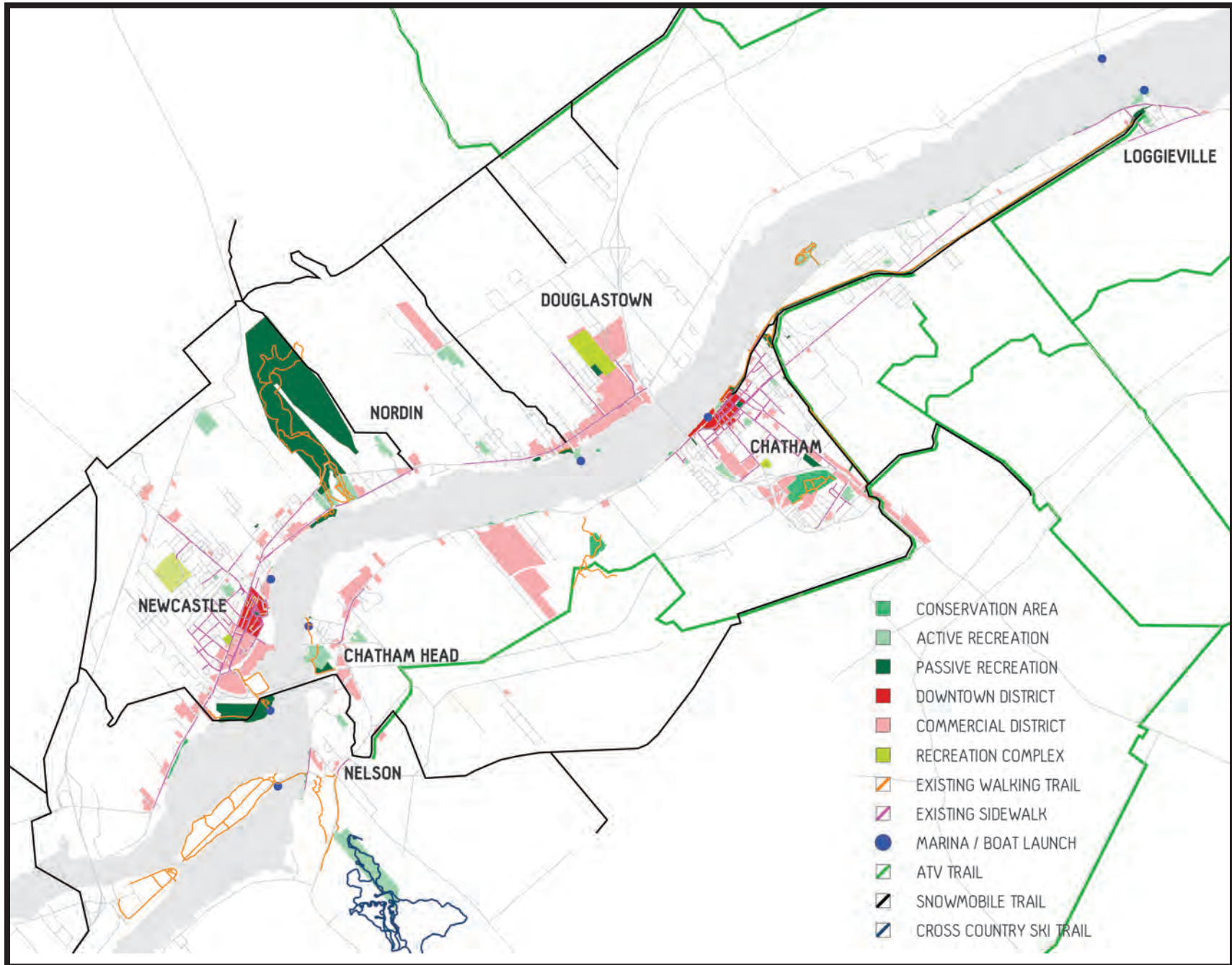
The plan recognizes that the Miramichi River bisects the City.

- Bridge connections are critical to many user groups and the uncertainty of the future of the various bridges is unsettling
- Global warming makes river crossings less reliable for snowmobilers which has a significant impact on both the local and provincial tourism industries
- Water trails need to be encouraged.

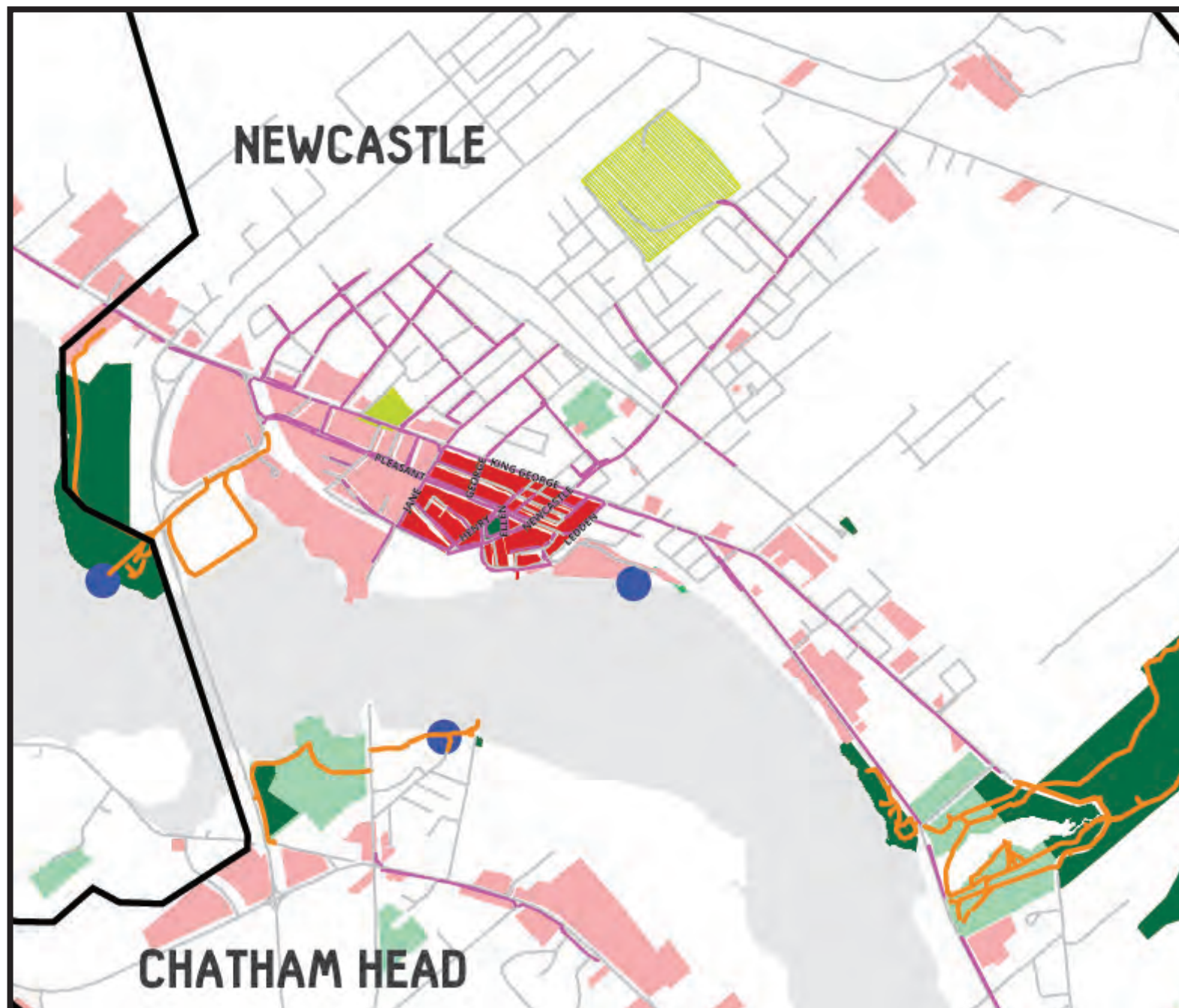
EXISTING CONDITIONS

The following map illustrates the current active transportation assets in the City. It also locates activity hubs and critical assets which should be connected through the AT network such as schools, libraries, recreation complexes, public green spaces and downtowns.

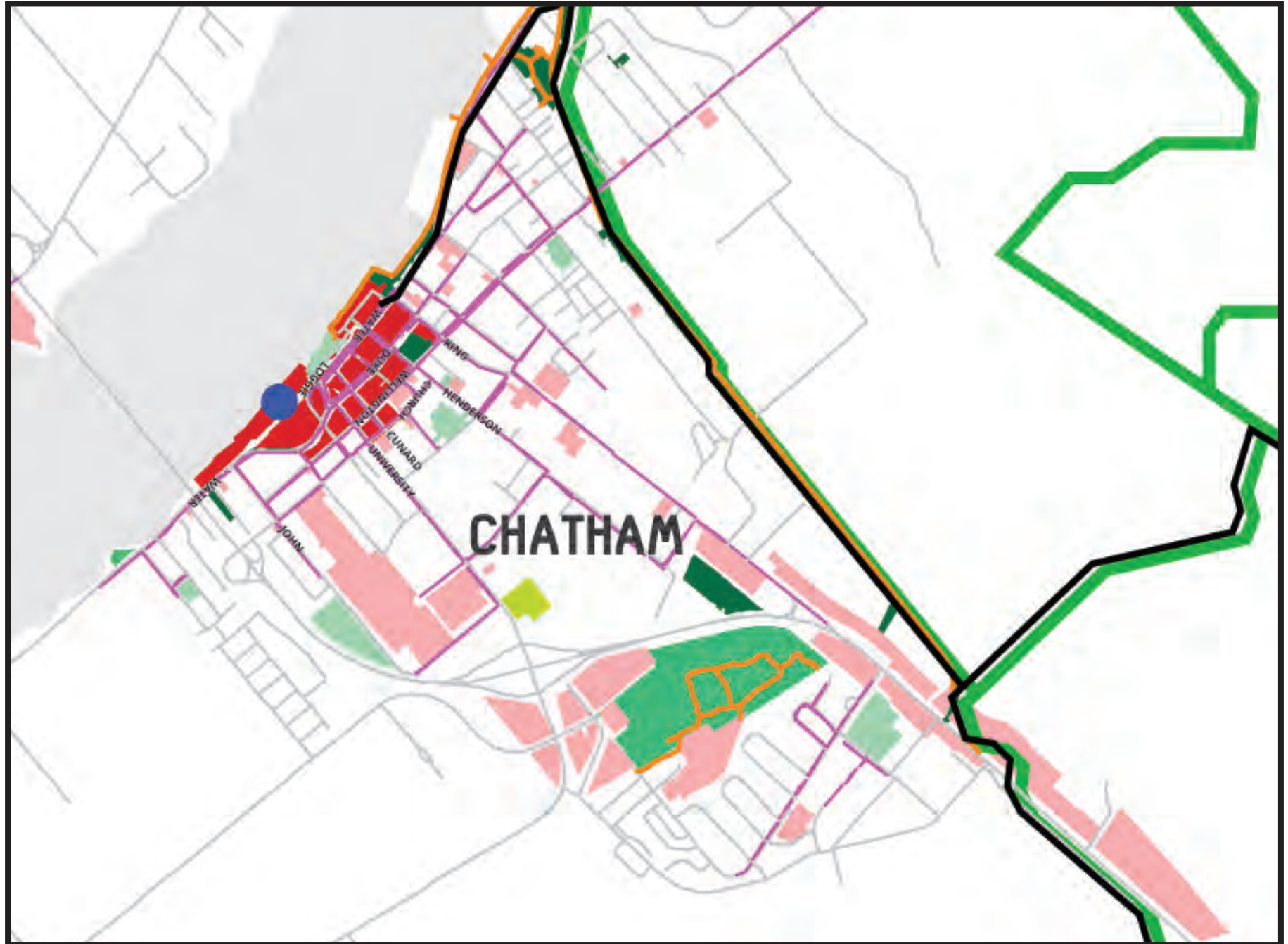
CITY OF MIRAMICHI - EXISTING TRAILS



EXISTING TRAILS - NEWCASTLE/CHATHAM HEAD



EXISTING TRAILS - CHATHAM



CHAPTER 2 - ENGAGEMENT

CONSULTATION PROCESS

Consultation is critical to the process of any plan as it engages user groups and the greater community, ensuring buy-in. A vision is not completed on its own, it requires champions who keep the community excited and engaged, does work to keep people informed and go after funding and provides valuable insights which ensure the solution functions for the users. Both targeted stakeholder interviews and public input are important to this success.

COVID-19 has changed how everyone interacts and conducts business. However, the value of stakeholder input has not changed and we are all adapting as demand requires. Video consultation allows for consultant and stakeholder to create a personal connection and saves time, eliminating the need for travel. The give-and-take balances out and the desired results are achieved.

STAKEHOLDER INTERVIEWS

The city provided a list of key user groups and players influencing and impacted by the design decisions. The full list of stakeholders can be viewed in the appendix. Groups included city departments, business associations, recreation groups and community groups.

Stakeholder interviews were conducted virtually via Zoom or Microsoft Teams. In addition to gathering answers to pointed questions, stakeholders were invited to share their ideas and concerns. Many groups consulted offered further resources which were reviewed as well.

Stakeholders were able to verify how existing trails are used, what the community needs are and what challenges need to be overcome. Potential opportunities were identified and case studies in other communities were identified.

Stakeholders were pivotal in identifying the top priorities for the community and assisting the consultant team in asking the right questions of the public. Their comments helped form the foundational elements of the plan.



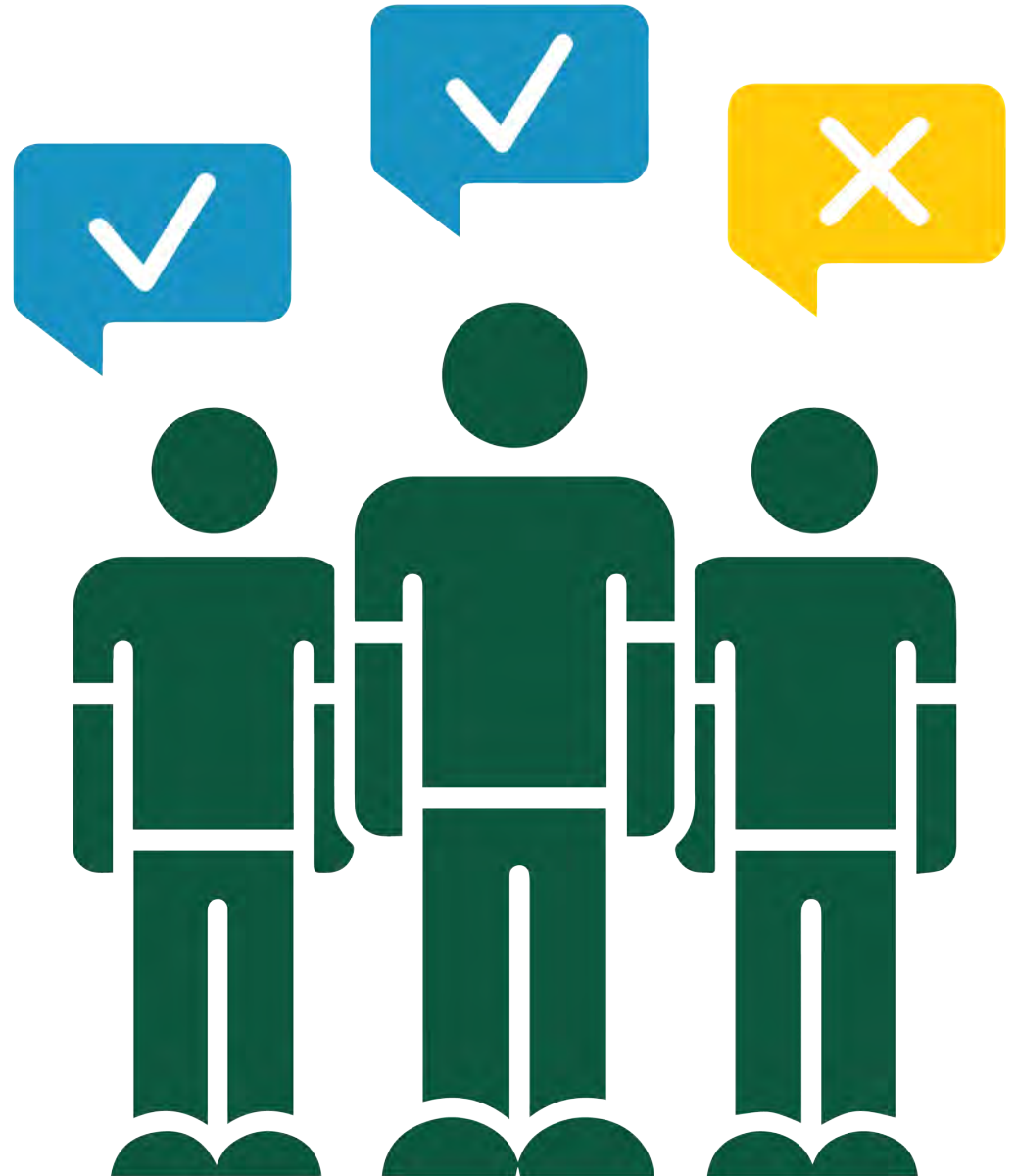
PUBLIC SURVEY

Again, COVID-19 impacted the way in which the public was engaged during the process. In lieu of a public open house with a face-to-face discussion, an online survey was hosted through the city's new public engagement site, engagemiramichi.ca. The benefit of this process was the ability to connect with a much greater sample of the population. The survey was live and accessible 24 hour/ day for two weeks. The site was then promoted through radio ads, social media and via all the networks of individuals and organizations who participated in the survey.

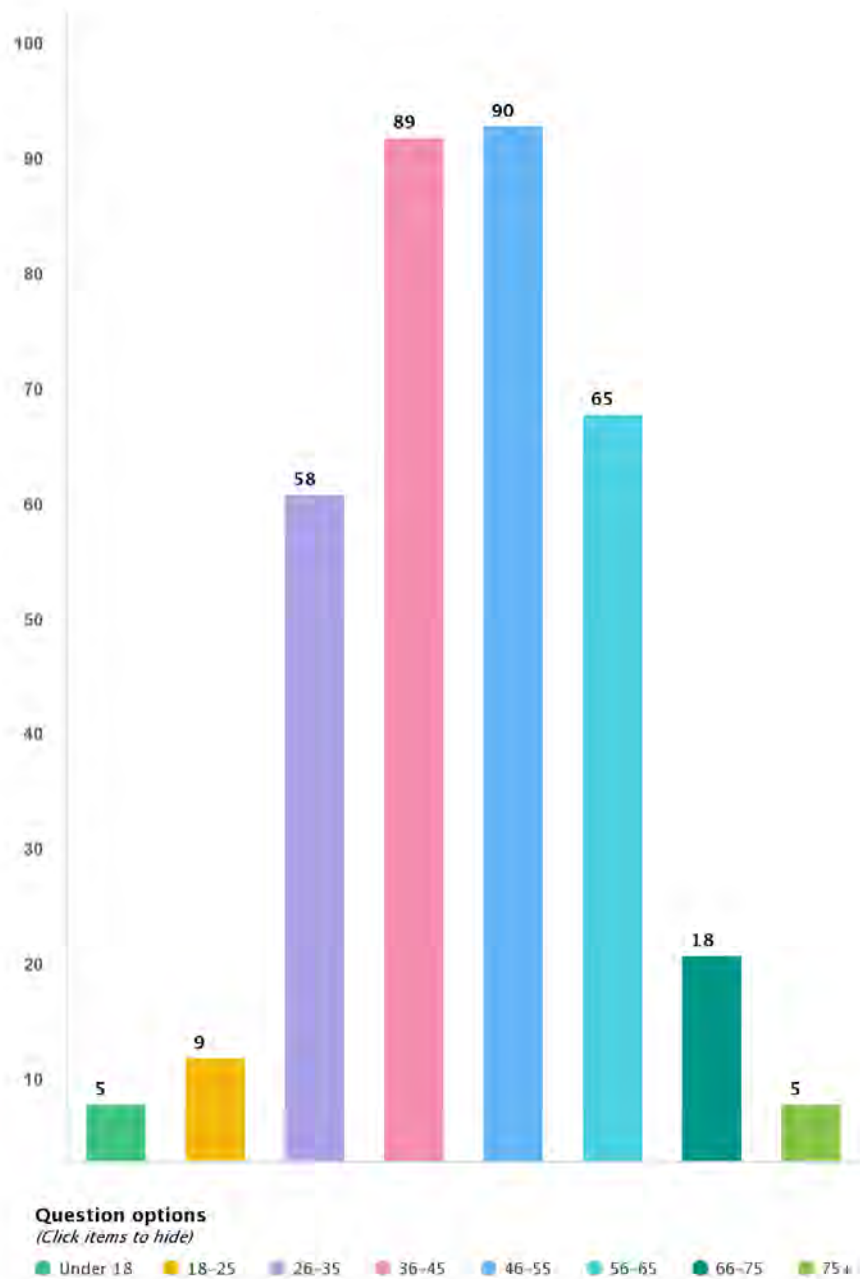
The results did not disappoint. Of the 1,452 visitors to the site, 930 were informed (browsed multiple pages) and 348 responded to the survey.

The detailed survey responses can be viewed in the attached Appendix III .

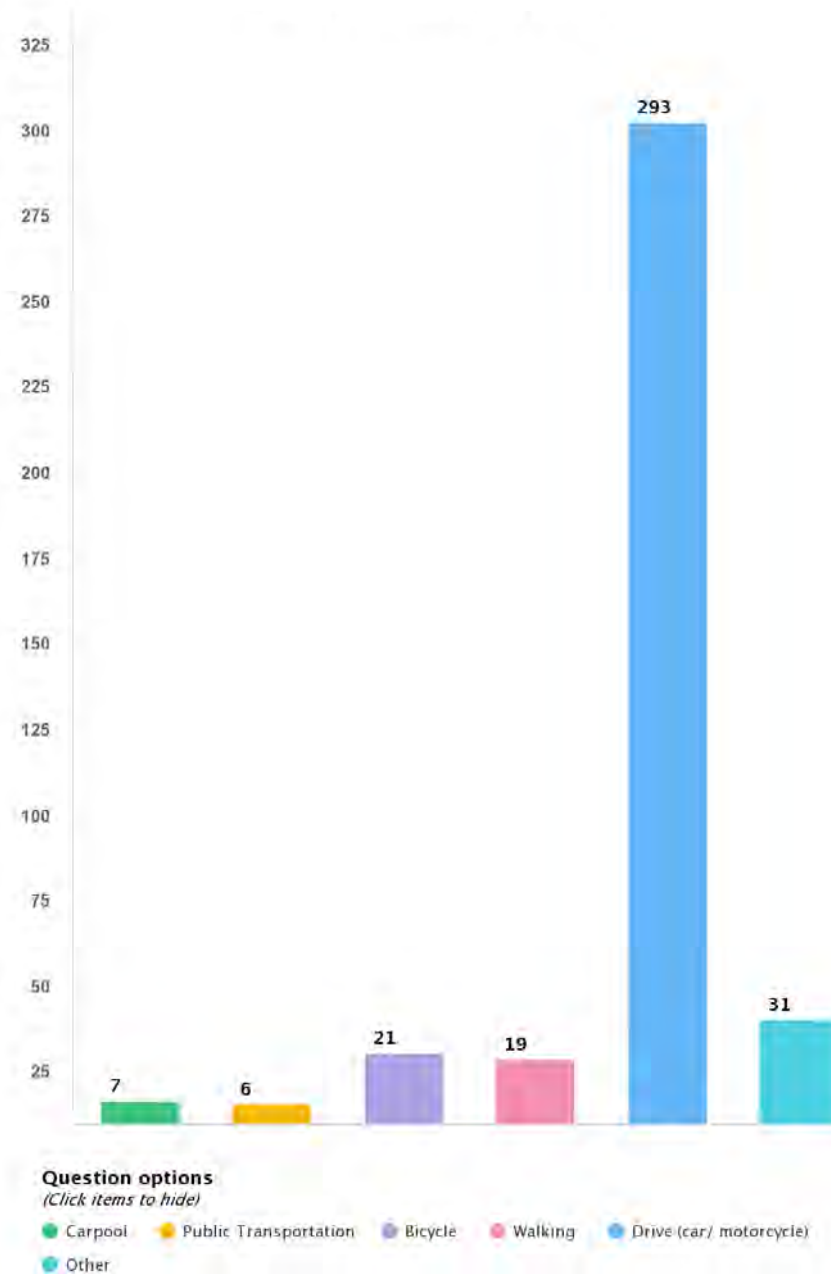
The responses to the questions are summarized below:



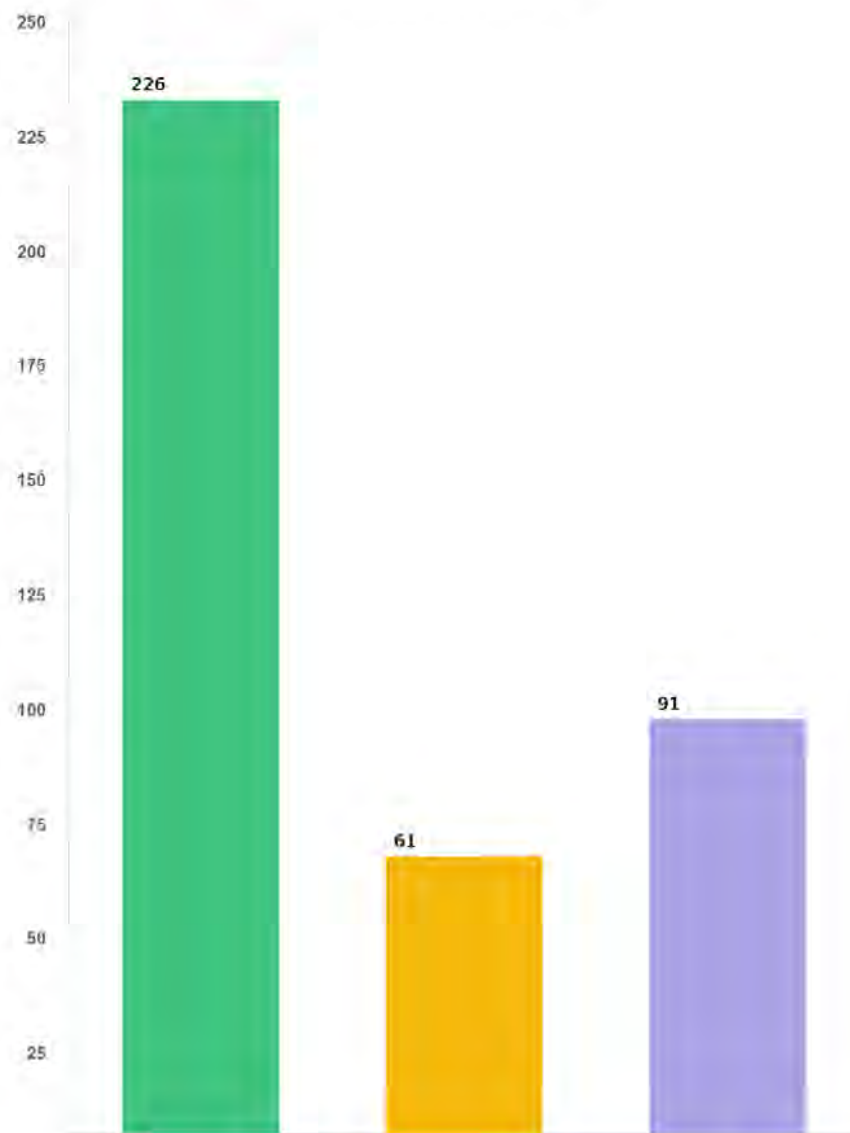
WHAT IS YOUR AGE RANGE?



HOW DO YOU COMMUTE TO WORK?



A. WOULD YOU LIKE TO SEE SOME TRAILS PAVED

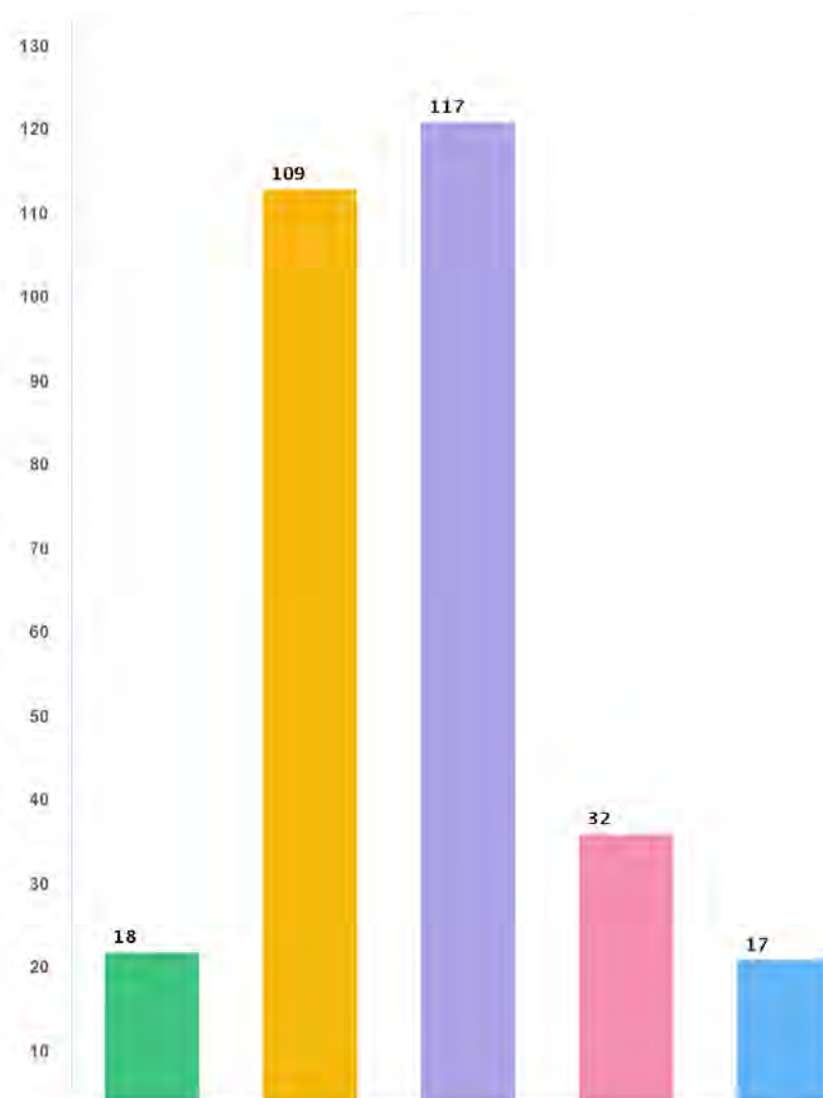


Question options

(Click items to hide)

Yes No B. Where would you like to see some paved trails?

WHERE WOULD YOU LIKE TO SEE GROOMED TRAILS FOR WALKING/ SNOWSHOEING?

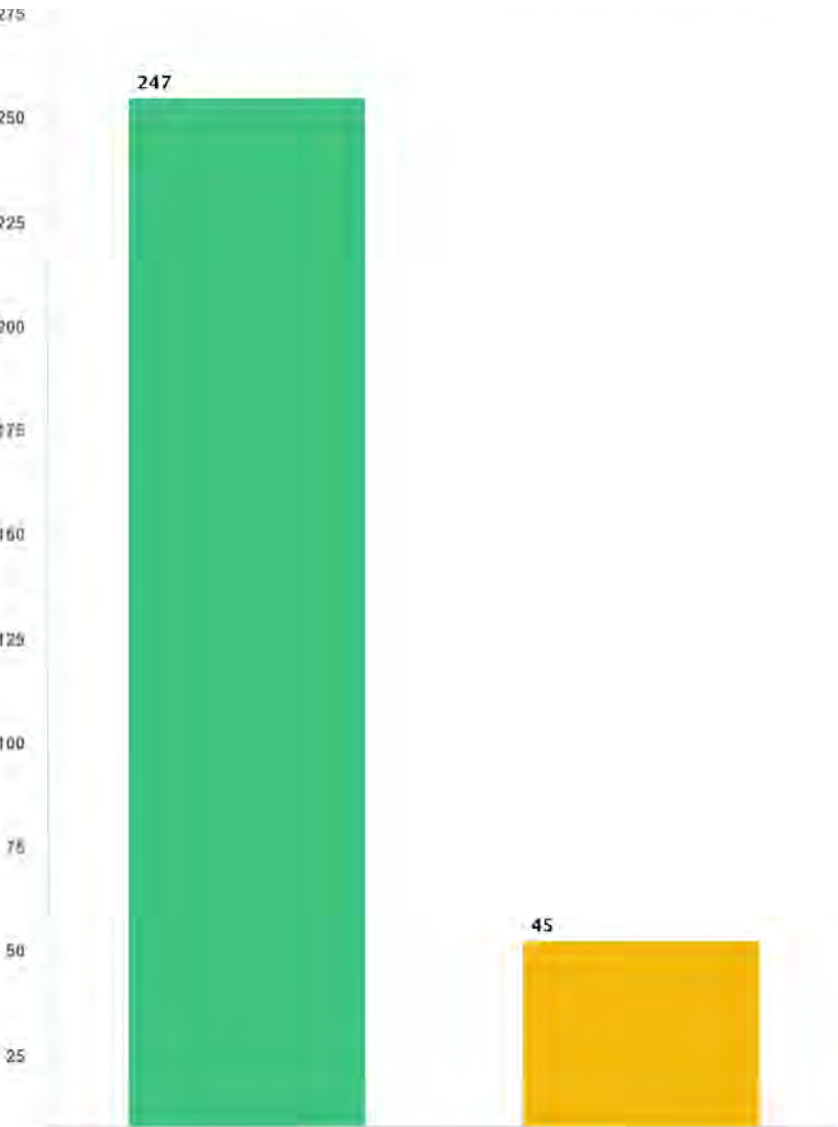


Question options

(Click items to hide)

I wouldn't use groomed winter trails Along the riverfront French Fort cove
Cross country ski club Other

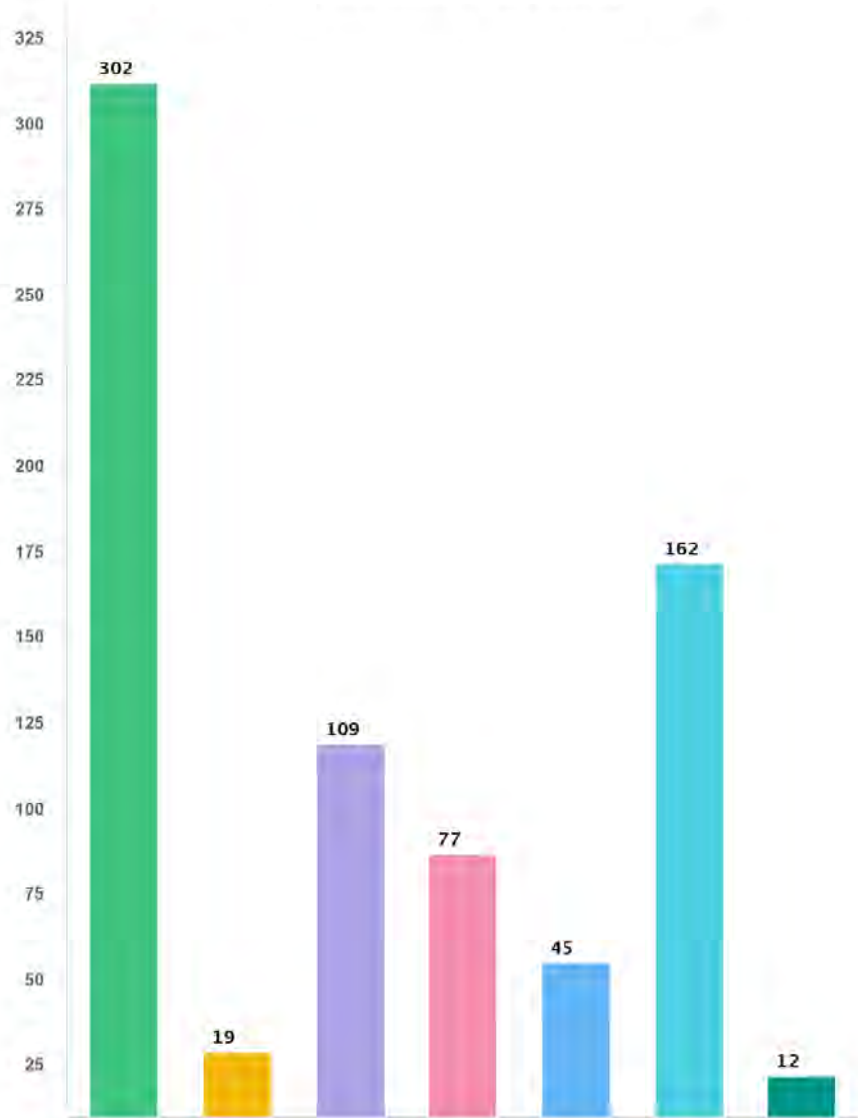
WOULD YOU BE WILLING TO TRAVEL TO OTHER AREAS OF THE CITY TO ACCESS GROOMED WINTER WALKING TRAILS?



Question options
(Click items to hide)

Yes No

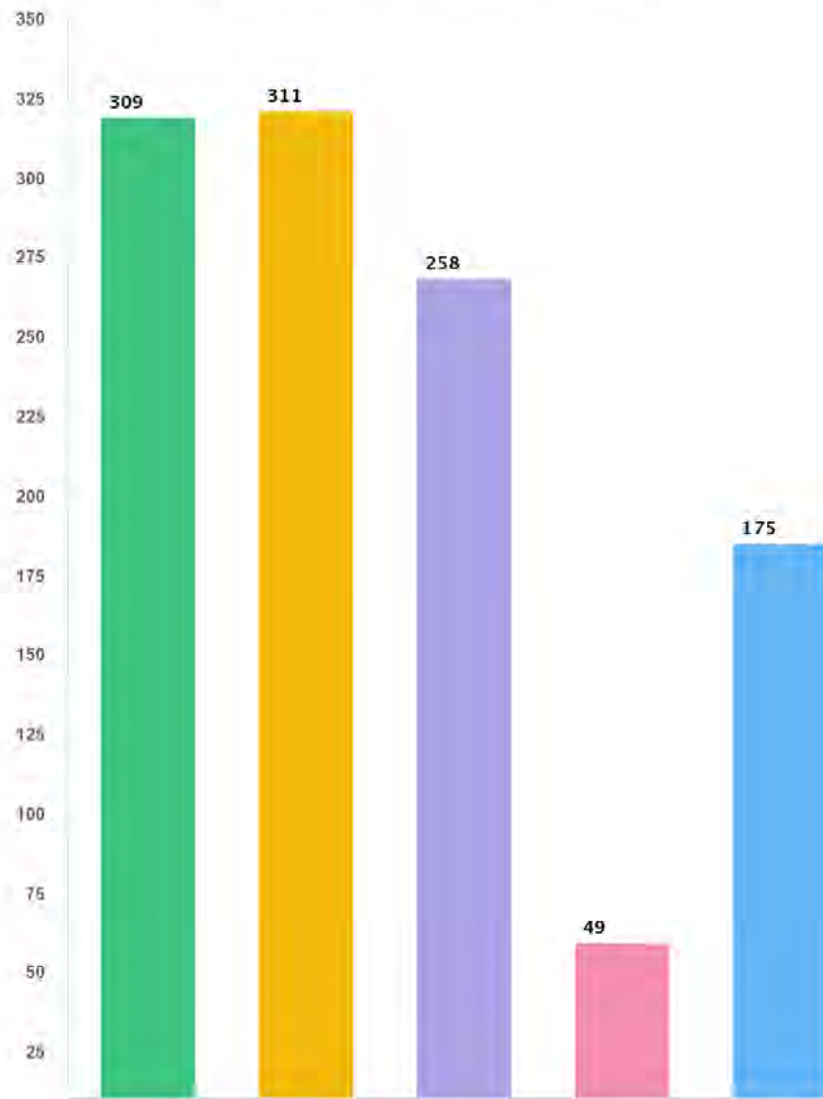
DO YOU CURRENTLY USE TRAILS IN MIRAMICHI?



Question options
(Click items to hide)

For walking/ running To commute to work, shopping, or social destinations Cycling
ATVing Snowmobiling Snowshoeing/ Cross-country skiing Other

WHY DO YOU WALK/ BIKE?

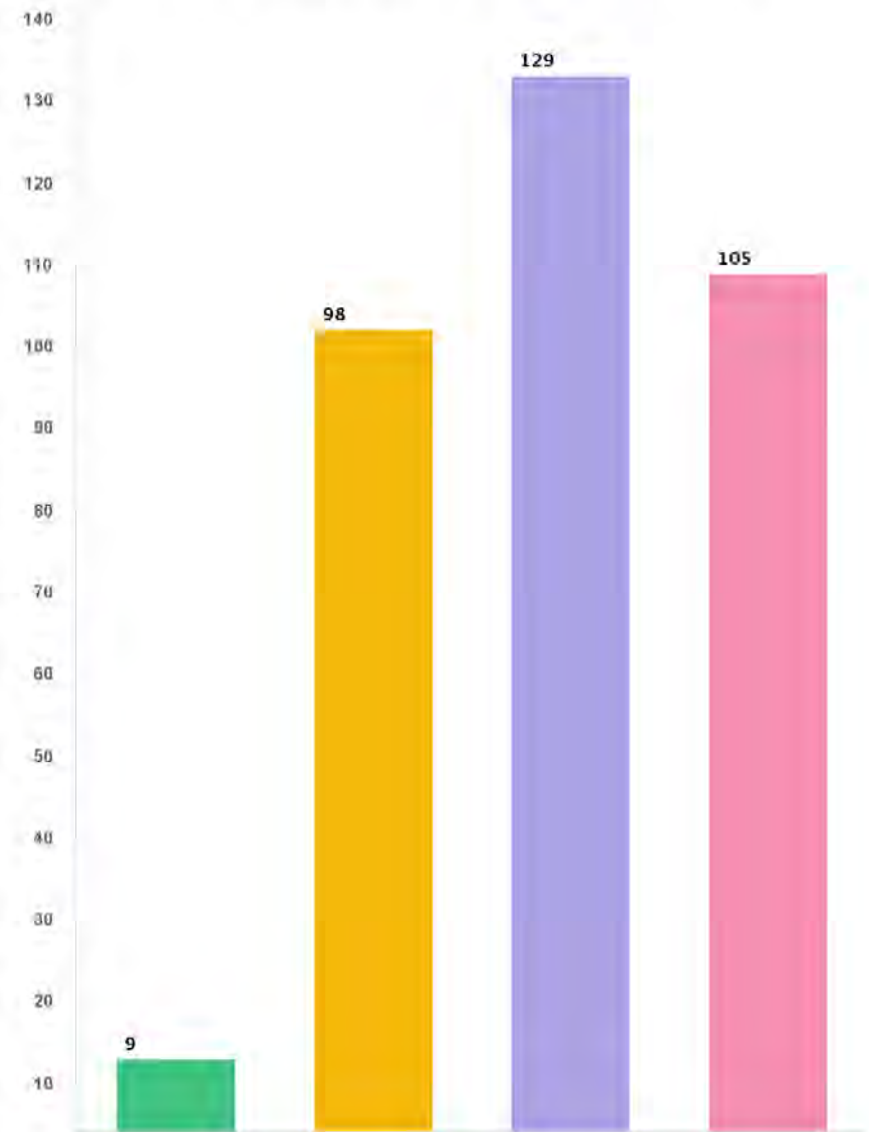


Question options

(Click items to hide)

- To improve my health
- To be outdoors
- Reduce stress
- To commute
- Socialize with others

HOW OFTEN DO YOU WALK/ BIKE THE TRAILS?

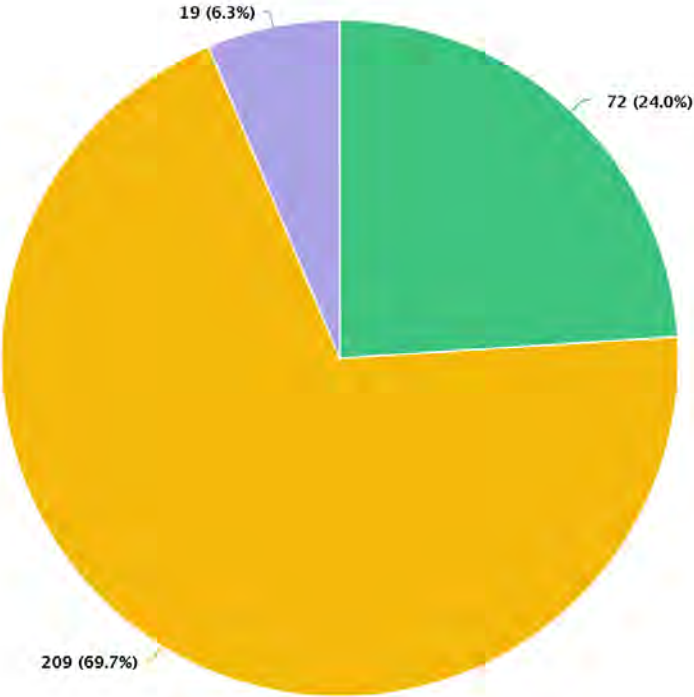


Question options

(Click items to hide)

- Never
- 1-3 times per month
- 1-3 times per week
- 4+ times per week

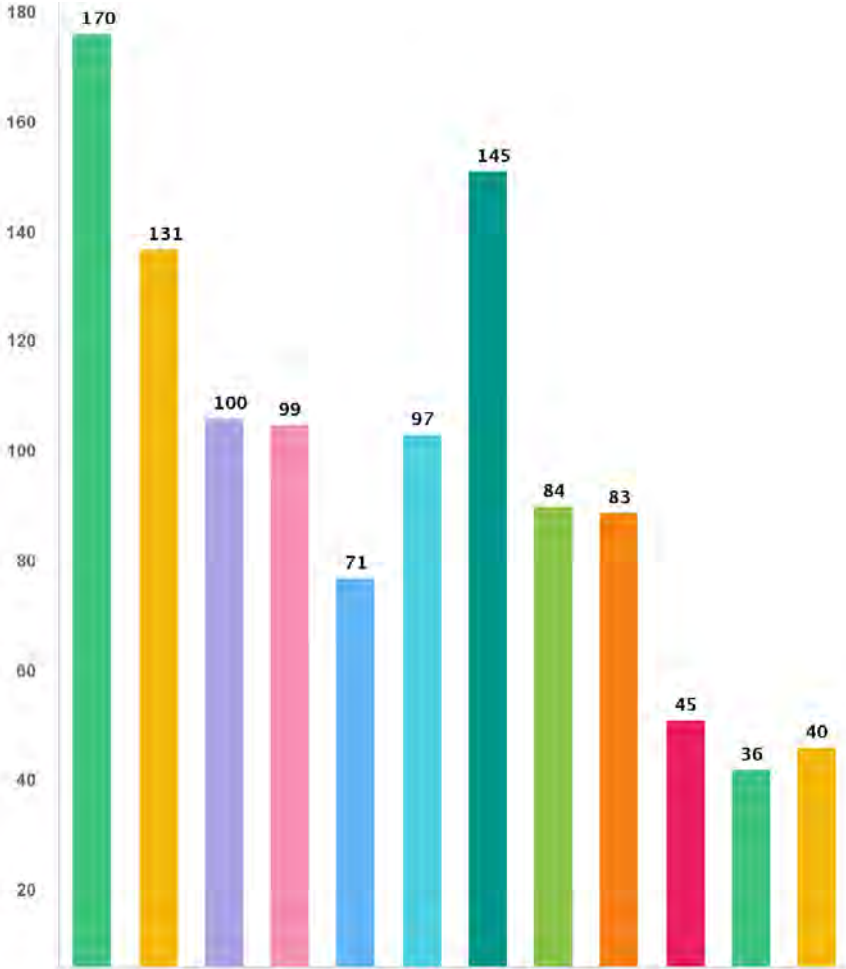
HOW WOULD YOU RATE THE OVERALL CONDITION OF TRAILS THROUGHOUT THE CITY?



Question options
(Click items to hide)

● Poor ● Good ● Excellent

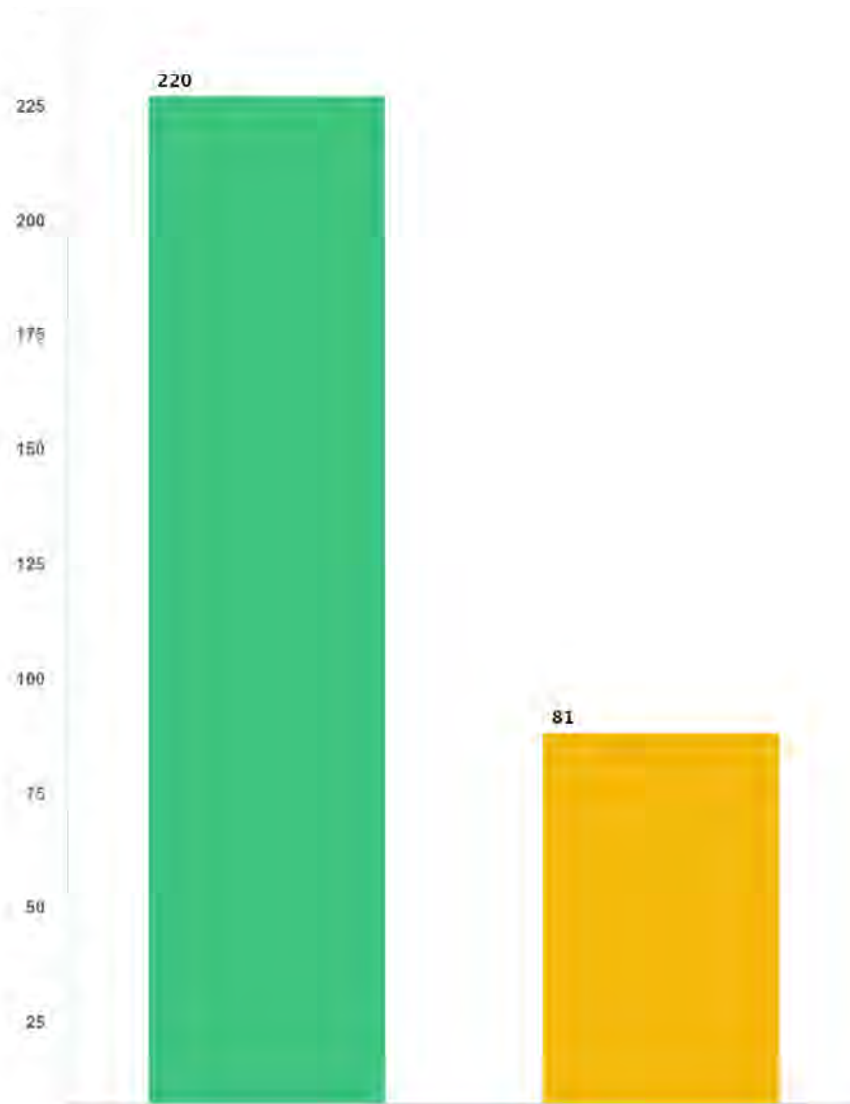
WHAT WOULD YOU LIST AS YOUR TOP 3 PRIORITIES FOR IMPROVEMENTS TO THE CITY'S ACTIVE TRANSPORTATION NETWORK?



Question options
(Click items to hide)

● Create a waterfront trail network ● Better connections between trails
● Creation of more bike lanes ● More sidewalks ● Improve condition of existing trails
● Develop more off-road trails ● Creation of paved trails
● Improved bridge crossings for pedestrians/ cyclists ● Creation of groomed winter trails
● Improve lighting ● Improved walking/ biking connections to transit ● Improved crosswalks

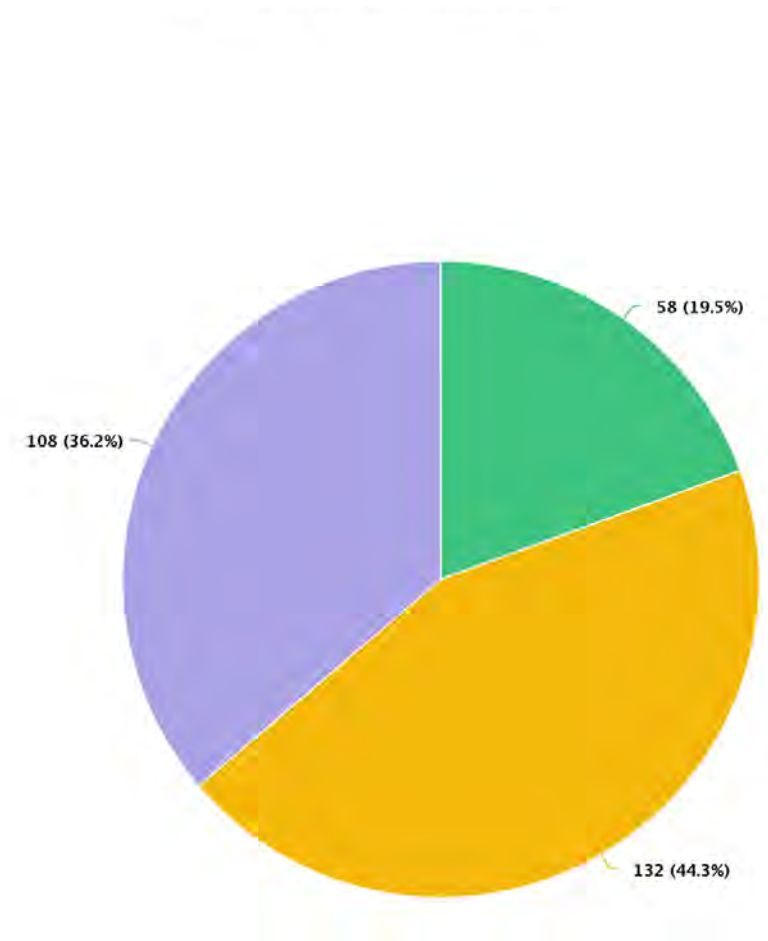
DO YOU FEEL SAFE TRAVELING ON TRAIL NETWORKS THROUGHOUT THE CITY?



Question options
(Click items to hide)

☒ Yes
 ☐ No

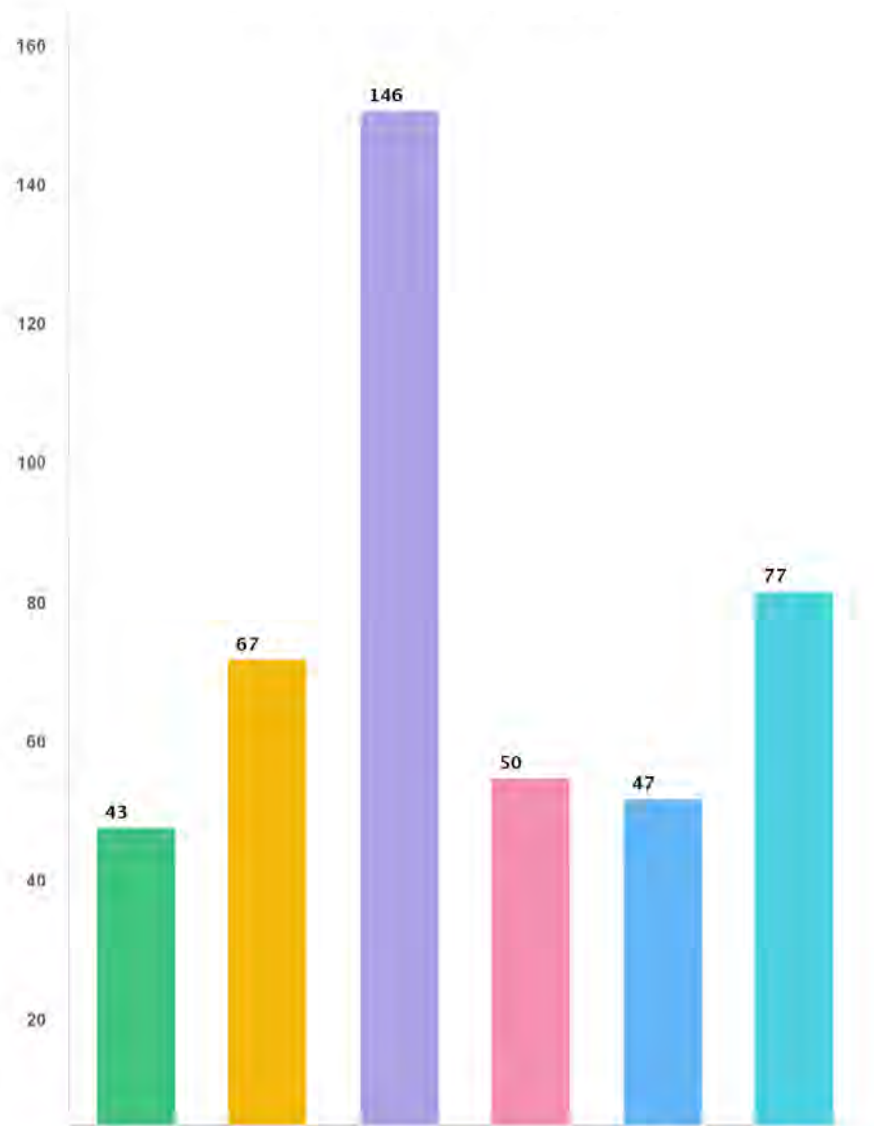
DO YOU BIKE? IF YES, DO YOU BIKE ON THE ROAD?



Question options
(Click items to hide)

☒ I bike off road (trails)
 ☐ Yes, I bike on the road
 ☐ No, I do not bike

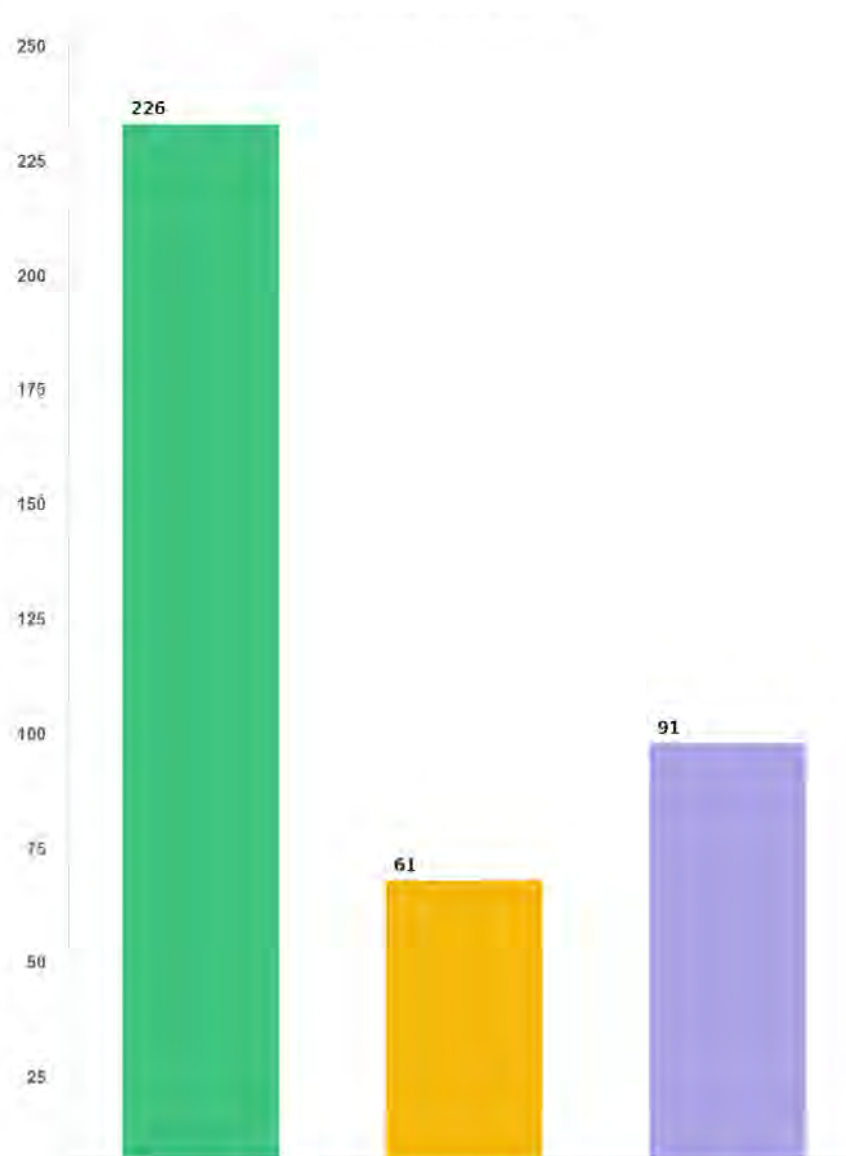
WHAT IS YOUR PREFERRED SURFACE TO BIKE ON?



Question options
(Click items to hide)

- Roads
- Paved Shoulder
- Paved trails
- Granular Trail
- Off-Road
- Do not bike

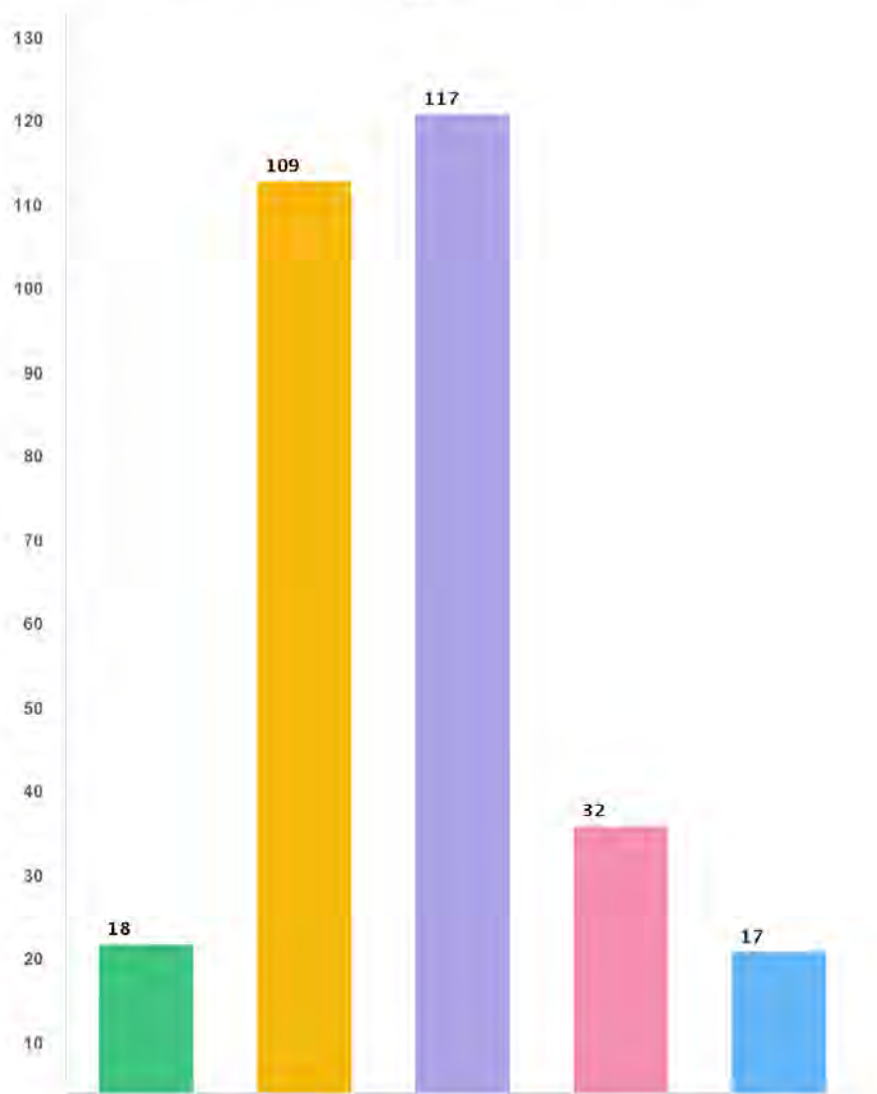
A. WOULD YOU LIKE TO SEE SOME TRAILS PAVED?



Question options
(Click items to hide)

- Yes
- No
- B. Where would you like to see some paved trails?

WHERE WOULD YOU LIKE TO SEE GROOMED TRAILS FOR WALKING/ SNOWSHOEING IN THE WINTER?

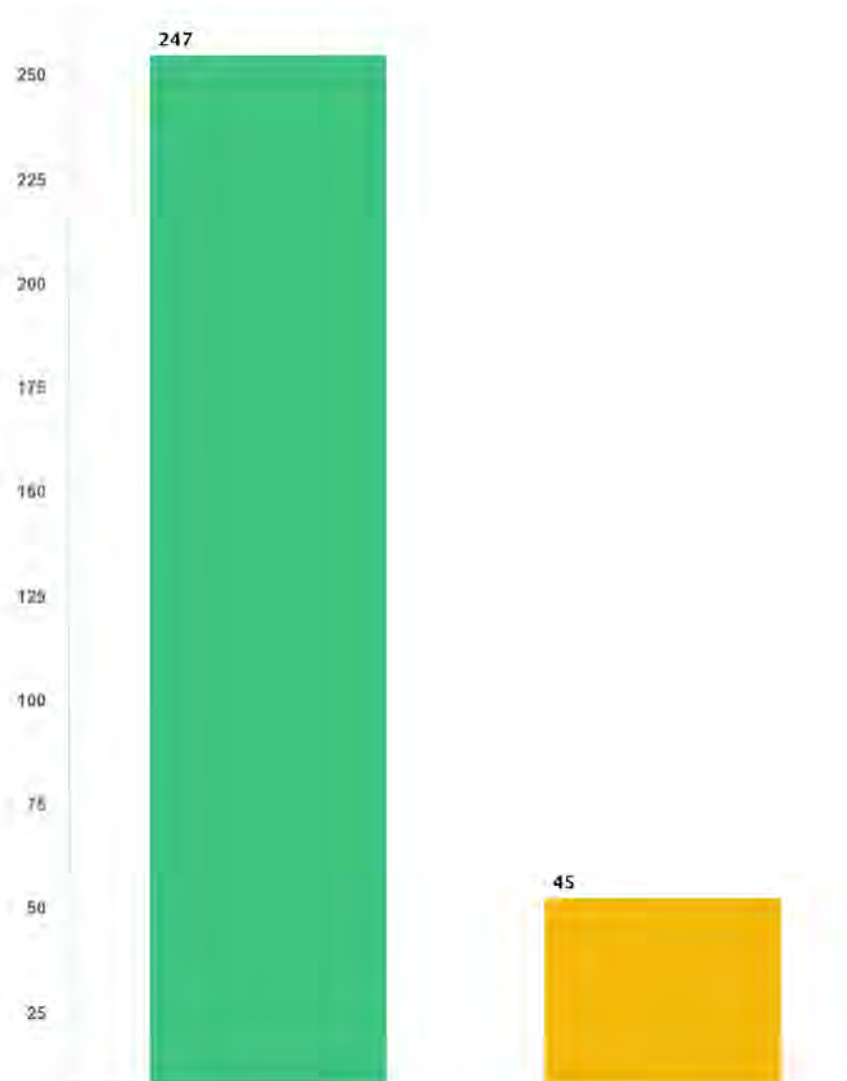


Question options

(Click items to hide)

- I wouldn't use groomed winter trails
- Along the riverfront
- French Fort cove
- Cross country ski club
- Other

WOULD YOU BE WILLING TO TRAVEL TO OTHER AREAS OF THE CITY TO ACCESS GROOMED WINTER WALKING TRAILS?

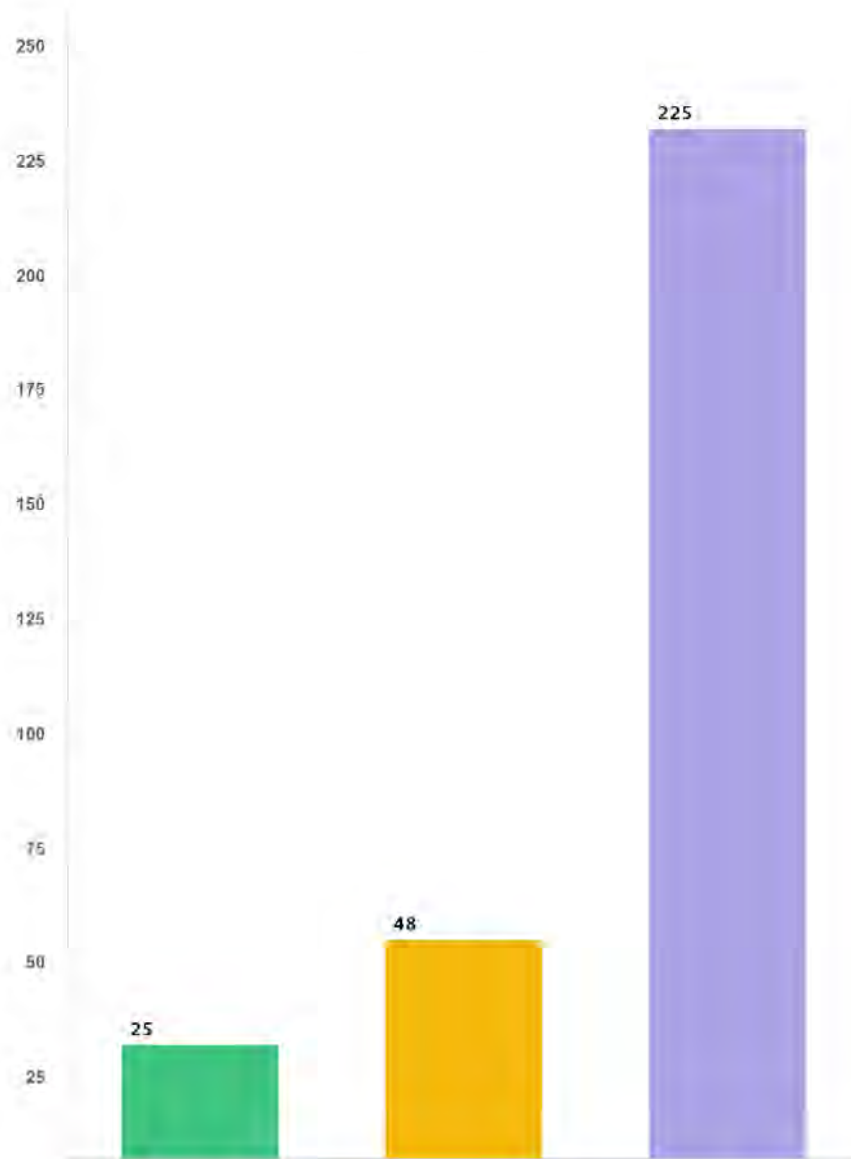


Question options

(Click items to hide)

- Yes
- No

DO YOU SNOWMOBILE?

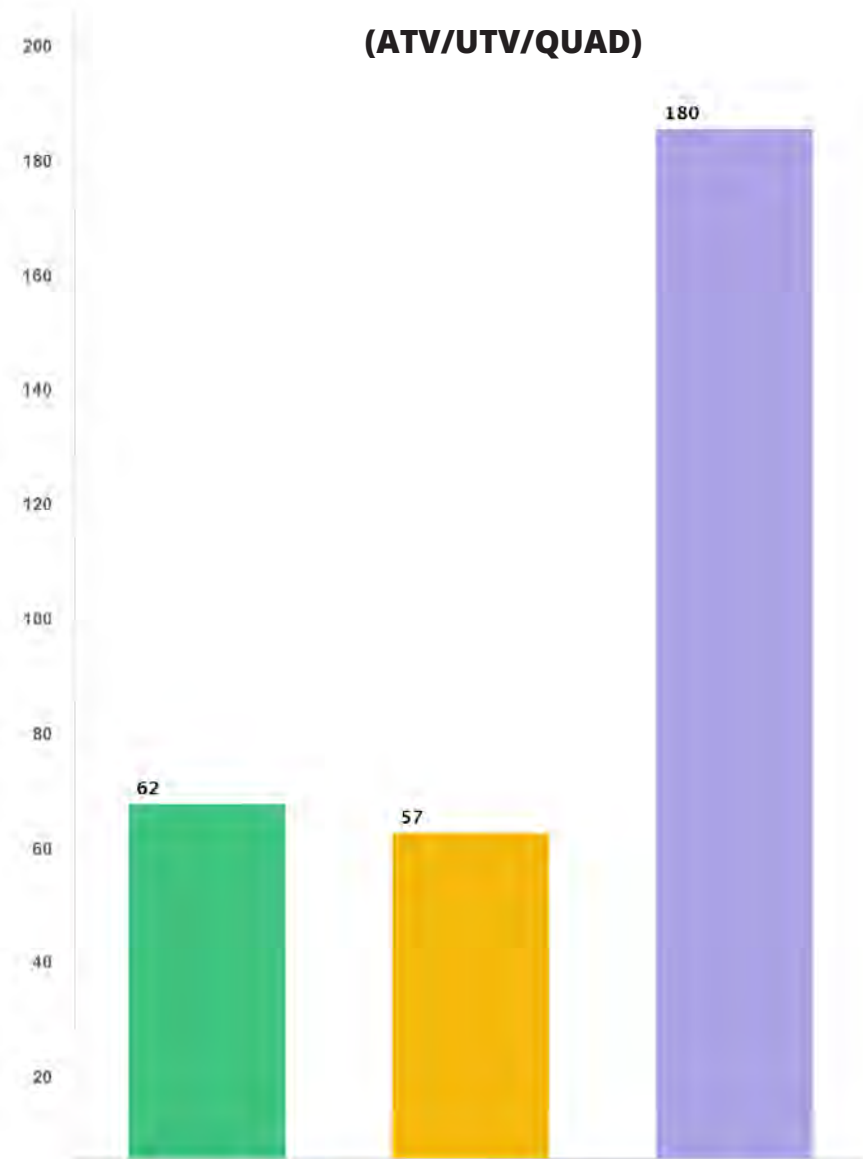


Question options

(Click items to hide)

Regularly Occasionally Never

DO YOU USE RECREATIONAL VEHICLES (ATV/UTV/QUAD)

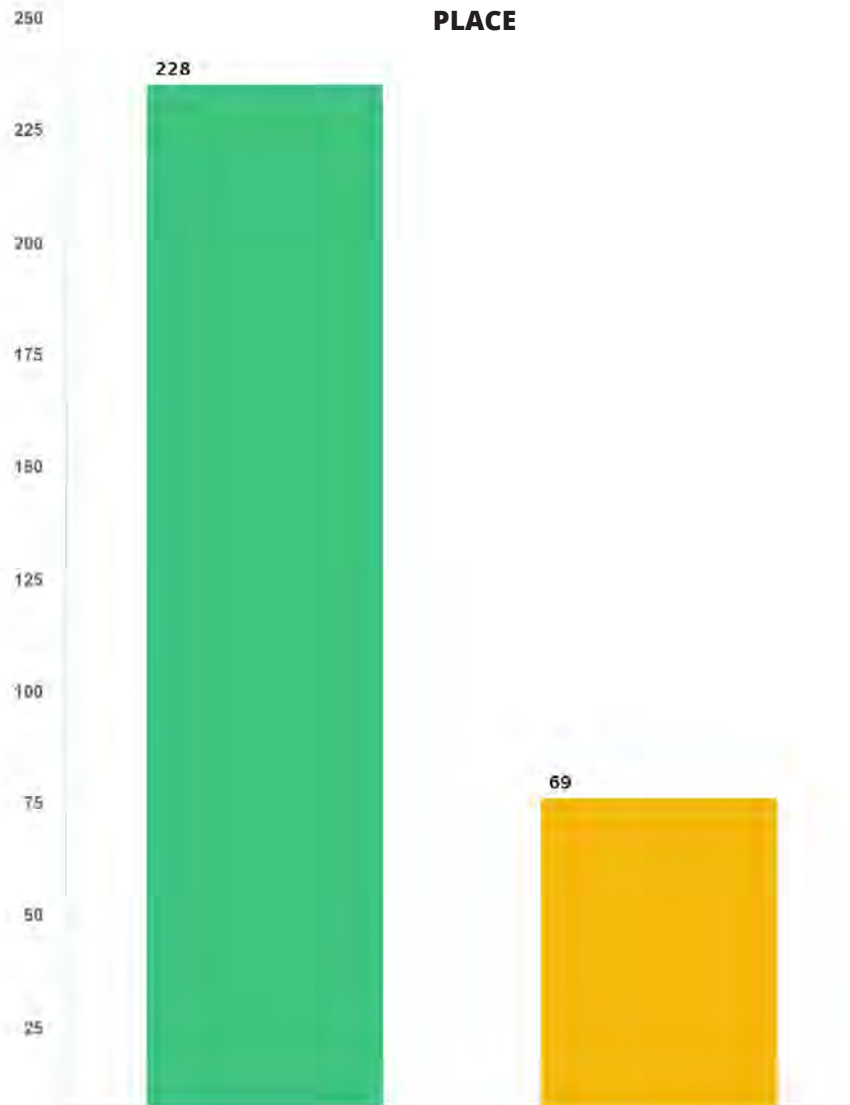


Question options

(Click items to hide)

Regularly Occasionally Never

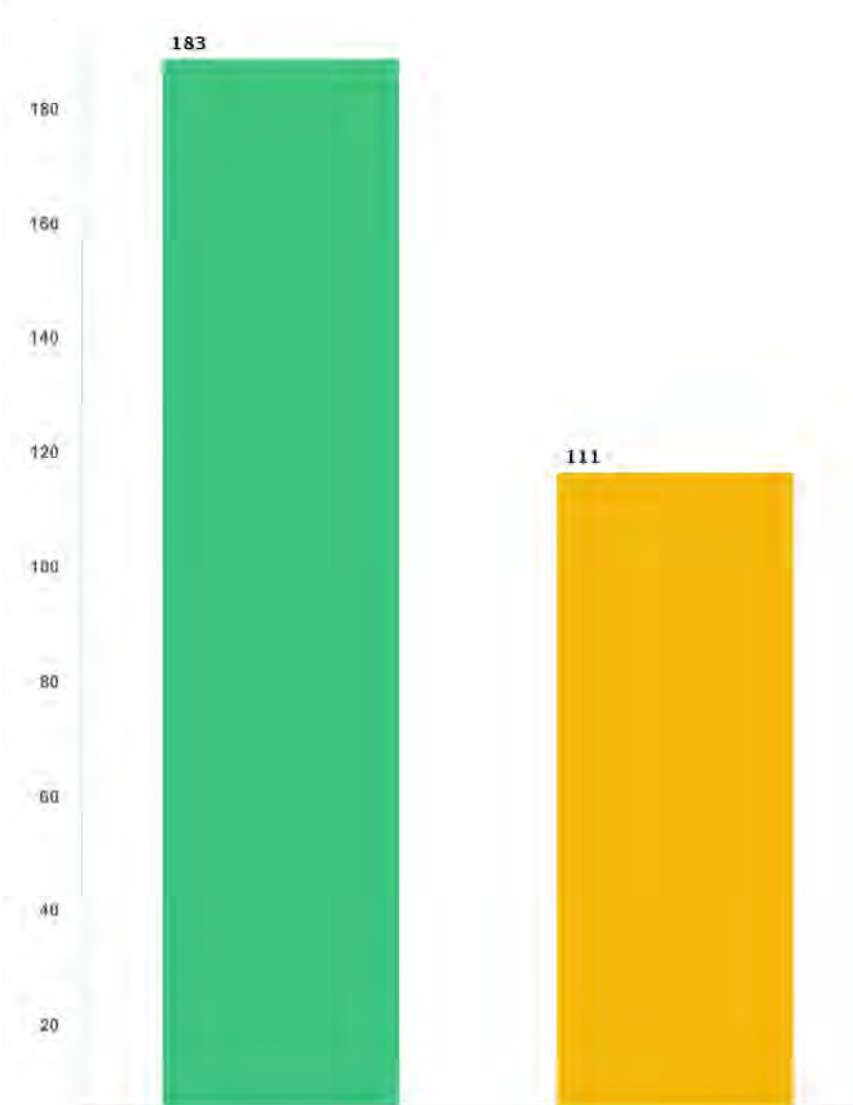
Would **WOULD YOU SUPPORT A TRAIL THAT HAS SECTIONS WHICH ARE USED BY PEDESTRIANS AND ATVS/ SNOWMOBILES AT THE SAME TIME WITH PROPER SAFETY PRECAUTIONS IN PLACE**



Question options
(Click items to hide)

☒ Yes ☐ No

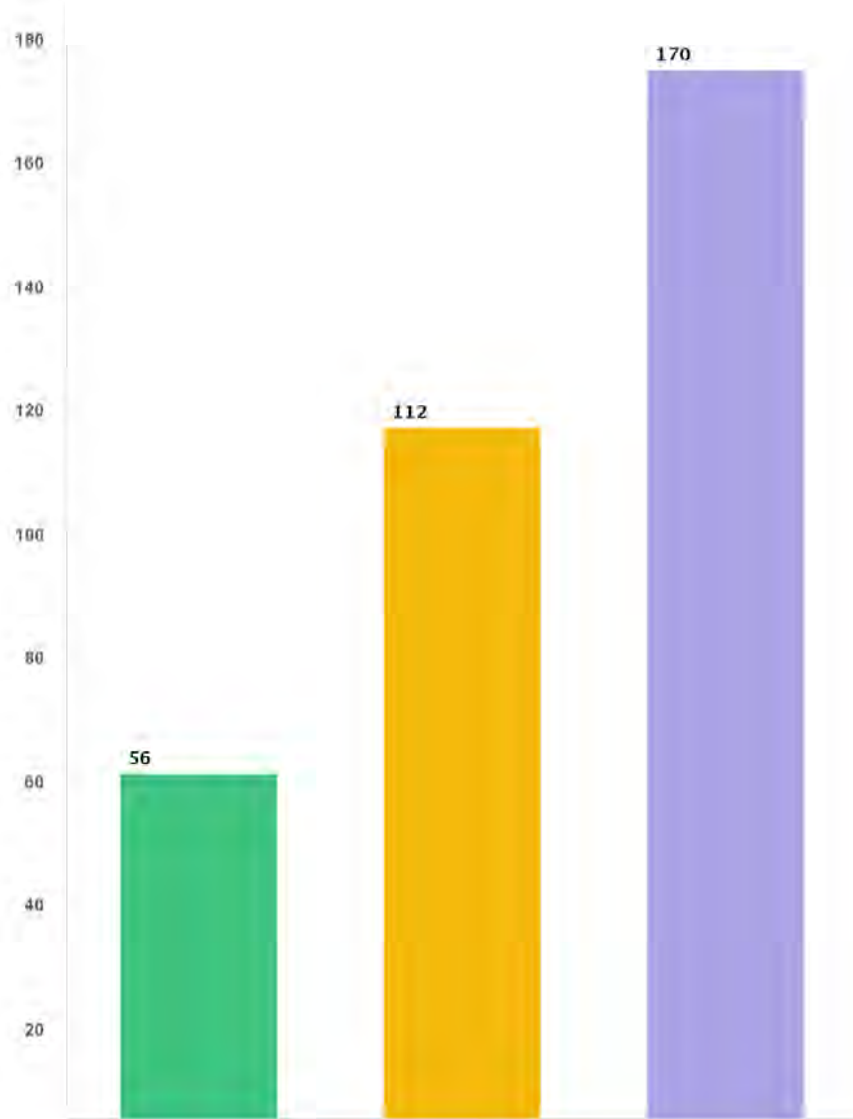
WOULD YOU BE IN FAVOR OF ATVS BEING PERMITTED ON IDENTIFIED (POORLY SIGNED) PUBLIC STREETS?



Question options
(Click items to hide)

☒ Yes ☐ No

DO YOU CROSS THE RIVER BY FOOT/ BIKE?

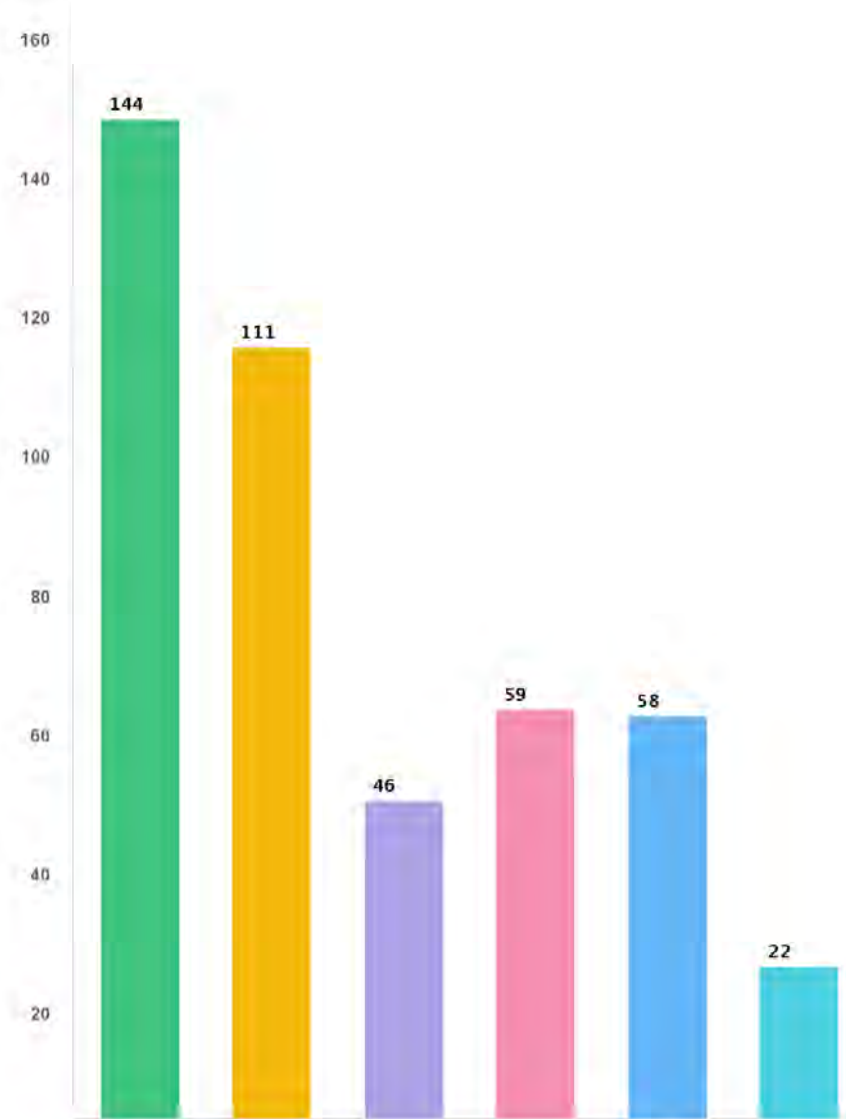


Question options

(Click items to hide)

- ☒ I cross the Centennial Bridge
- ☒ I cross the Miramichi Bridge
- ☒ No, I don't cross the river by foot/ bike

WHAT DO YOU USE THE BRIDGE CROSSINGS FOR?

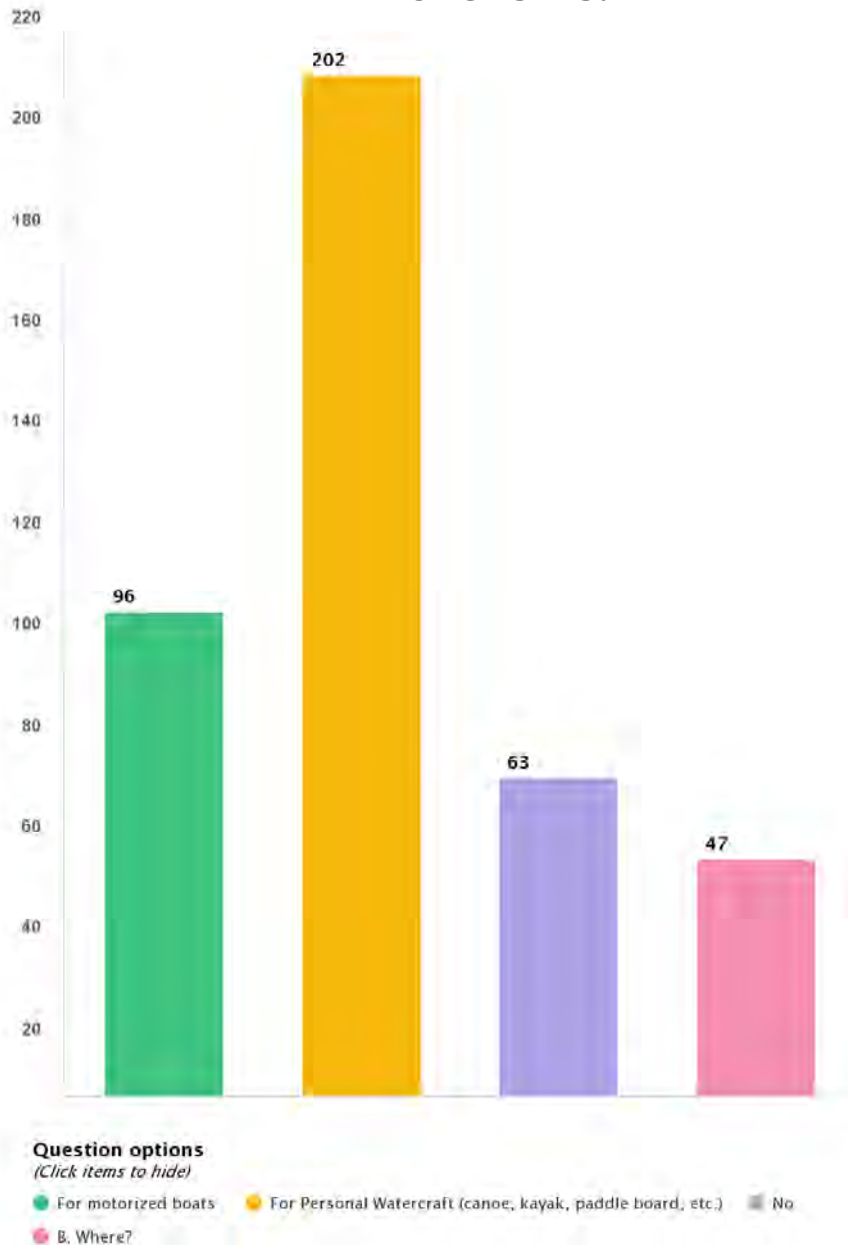


Question options

(Click items to hide)

- ☒ I don't cross the bridges except by automobile
- ☒ Exercise
- ☒ Commuting to work
- ☒ Shopping, including groceries
- ☒ Social destinations
- ☒ Other

A. DO YOU FEEL THERE SHOULD BE MORE PUBLIC BOAT LAUNCH SITES?



Forum

The Forum received a few comments and discussions which are summarized below:

- Safety along the roads was a major concern, especially for cyclists and young families
- There is a strong desire for paved trails
- People recognize the value of an AT network on both their physical and mental health
- There is a desire to use AT as a means of commuting to work, school and social engagements. If the network was there, the culture of commuters would change
- A demand for off-road biking routes
- The Miramichi Cross Country Ski Club has been identified as a valuable asset which could be developed further

Engagement Outcomes

Based on the survey responses, the following conclusions were drawn:

- Survey participants were generally in the age range of 26-65, with 53% being between the ages of 36-55.
- Only 23 people over the age of 65 responded and 14 under the age of 26.
- Miramichi is still a highly vehicle-centric city with 88% of residents commuting to work or school by car
- Trails are primarily used for walking or running (89%), 48% of users will participate in winter recreation such as; cross-country skiing or snowshoeing
- 32% of users use the trails for cycling
- Only 5% of users use the trails to commute.
- The focus of the trail system should be to develop trails for recreational walkers and joggers first.
- Winter recreation is also highly popular among residents
- Currently there is no culture of commuting. It is not clear if that is because a lack of desire or the facilities do not make this a viable method of transportation
- The majority of individuals use the trails for some form of personal wellness
- 69% of individuals use the trails on a weekly basis, mostly multiple times per week.
- The majority of residents use destination recreation trails. (This may be a product of what facilities are currently available)
- Those residents that do use street shoulders all comment on the insecurity of using such routes. Others identify the safety concern as the reason why they do not use these routes. Currently 10% of users admit they use road shoulders or travel local roads in some way, but most comment that they do not feel safe doing so 70% of users are satisfied with the condition of current trails in the city.
- French Fort Cove is by far the most popular recreation trail with 73% of respondents saying they use it.
- Other popular destinations include
 - Strawberry Marsh 20%
 - The old rail line from Chatham to Loggieville 16%
 - Chatham Waterfront Trail 12%
 - Middle Island 8%
- Miramichiers are active year round
 - 13% use the cross country ski club facilities in some capacity
 - 11% ATV or snowmobile
- The #1 priority for locals is the creation of a waterfront trail (56%) followed closely by having a paved route and better connections between trails. Fortunately this aligns with the priorities set by the city at the outset of the project and confirms the recommendation of the consultants. These priorities would produce a good return on investment, make the trail network more accessible and work to connect the community
- Other popular desires include:
 - Creation of bike lanes 33%
 - More sidewalks 32%
 - Improve the condition of existing trails 32%
 - Improve bridge crossing conditions for pedestrians and cyclists 27%
 - Creation of groomed winter trails 27%
- The majority of trail users feel safe (73%)
- This does not clarify what type of trails they feel safe on (most likely off-road destination trails)

- This does not define “safety” - could be from traffic accidents, physical assaults, wildlife.
- Priorities to link or add trails:
 - #1 by far is waterfront 29%
- Other important areas include:
 - Downtowns 11%
 - Chatham to Newcastle 10%
 - Creation of bike lanes 7%
 - Paved Trails 6%
 - Newcastle to Douglastown 6%
 - Strawberry marsh connections 5%
 - River crossings 5%/ Morrissey Bridge 4%/ Bridge access 2%= 11% collectively
- 64% of respondents bike, while 69% of those individuals bike on the road
- There is a popular cycling culture and they are using the roads; these users need to be accommodated in the plan
- 69% of cyclists prefer to bike on a paved surface
- This supports the development of paved multi-use trails
- Support for the creation of bike routes:
 - 78% of respondents would like there to be some paved trails within the city
- The majority would like to see them along the waterfront (29%)
- Many say Chatham to Newcastle (15%) while many would be happy to see them anywhere within the city, so long as the opportunity existed (14%)
- Demand for groomed winter trails is
 - 1: French Fort Cove 40%
 - 2: Along Riverfront 37%
- 84% of respondents are willing to travel to access groomed winter trails
- Only 8% of respondents are regular snowmobilers and 21% ATV regularly
- 77% of users are supportive of sharing trails with motorized and no-motorized users
- Residents are somewhat divided on whether ATVs should be permitted on public streets
 - 62% in favor
 - 38% opposed
- 57% of respondents use the bridges to cross the river by foot/ bike
- 74% of users are crossing for recreation
- There is a demand for more public boat launches, specifically for Personal Watercraft (PWC). This includes non-motorized water craft such as kayaks, canoes and paddle boards.
- For Personal Water Craft, a number of individuals noted they would like to be away from motorized boats
- The top locations of interest for Personal Watercraft launches were:
 - Chatham Waterfront 17%
 - Ritchie Wharf 17%
 - Nelson 17%
 - Douglastown Marina 17%
 - Strawberry Marsh 9%
 - Newcastle 9%
- The most desirable locations for boat launches/ docks were:
 - Nelson 13%
 - Strawberry Marsh 11%
 - Newcastle 9%
- A number of respondents did not have a particular location in mind, but just recognized the current capacity was not enough.

CHAPTER 3 - THE STRATEGY

THE VISION

The vision for the Miramichi Active Transportation Plan is to create a culture of active living through thoughtful infrastructure design which accommodates a diversity of user types and is scaled to the capacity of the city.

GOALS + OBJECTIVES

Goal 1: To connect the city so people can access trails from anywhere and connect to all other areas of the city

Objectives:

- Develop a spine linking all regions of the city and to which all trails can connect
- Identify and close gaps in the network

Goal 2: To be appropriately scaled in cost of both construction and implementation

Objectives:

- Develop solutions that serve the greatest number of users
- Develop a plan that can be tackled in many phases as budgets allow
- Build off of existing AT assets
- Find cost effective solutions that work within the existing infrastructure

Goal 3: To make Active Transportation accessible to all users

Objectives:

- Design for all forms of active recreation including
 - Pedestrians/ runners
 - Cycling
 - Skateboarding/ inline-skating
 - Cross country skiing
 - Snowshoeing
 - Paddling (canoe, kayak, SUP)
- Develop solutions for universal design including
 - Sections of paved trail
 - Winter grooming
 - Signage
 - Tactile markings

Goal 4: To provide a Year-Round Active Transportation network

Objectives:

- Develop solutions for a variety of winter activities
- Identify areas of trail to be groomed in winter for pedestrian traffic



Goal 5: To make Active Transportation in the City of Miramichi safe

Objectives:

- Identify any unsafe zones of activity and develop solutions to make them safe
- Develop on-road AT routes that are safe for pedestrians and cyclists
- Educate motorists and trail users about proper etiquette and safe practices
- Provide AT routes and connections to bus stops

Goal 6: To provide tourism opportunities through Active Transportation

Objectives:

- Identify a solution to the river crossing for Snowmobiles
- Identify businesses that could offer tours/ rentals along AT routes
- Connect trails to existing downtowns and commercial hubs
- Highlight the city's best natural and cultural assets including Miramichi Landings, The Miramichi River and historic downtowns

CHAPTER 4 - ACTIONS

ACTION 1: ESTABLISHING THE ROUTES

In order to establish an Active Transportation strategy for the City of Miramichi, it must be attainable and consider municipal budgets for implementation and maintenance. The approach takes a number of factors into consideration:

- Implementation cost
- Maintenance budget
- Spatial restrictions of existing road right of ways, properties and buildings
- Utilization of existing sections of trail
- Focus on popular routes/ destinations
- Connect existing trails/ assets
- Provide connections to downtowns/ retail hubs/ recreation destinations
- Highlighting the city's best features (ie: Miramichi River)
- Leveraging partnerships



THE SPINE (WATERFRONT LOOP)

Throughout the consultation process, there was overwhelming support for waterfront trails. This aligns with the image the city is promoting – a renewed connection to the Miramichi River. The advent of COVID-19 has reinforced the wellness trend and connecting with our natural resources. The Miramichi River has international renown and the city recognizes that this has not been celebrated in recent years.

The goal of the AT Plan is both to improve wellness and provide better connectivity. For these reasons, a central spine will serve as the foundation for the trail network.



The Spine should be the foundation for future expansion. It should connect the downtowns, neighbourhoods, schools, recreation hubs and retail centres.

In order to achieve these goals the route follows these principles:

- Staying as close as possible to the river or views to the river
- Using existing trail assets wherever possible
- Encompassing the entire city- bridge to bridge in a closed loop

The waterfront loop works as a foundational route for a number of reasons:

- All development builds back from (and connects down to) the riverfront, including access to destination trails and neighbourhoods
- It is easy to locate
- It is attractive- including many views to the water and waterfront parks/ greenspaces
- The waterfront was identified as the priority destination for paved trails and groomed trails as well
- A large portion of the loop is already developed with some form of trail
- It connects the downtowns
- It has numerous linkages to the transit routes

As illustrated, much of the route is pre-existing. The priority would be the creation of the sidewalk along the King George Highway through Nordin and the mixed use shoulder along Water Street from Chatham to Chatham Head

Because the city is already densely developed along these major arteries (King George Highway and Water Street), space is limited. Additionally, one of the main objectives of the AT approach is to take

advantage of existing assets. These are both contributing factors for why Bike accessible shoulders are recommended for much of the route. They combine the function of both sidewalk and bike lane in a condensed space which is conducive to the available conditions. Additionally, it greatly reduces the infrastructure cost over developing both sidewalks and widening the road for bike lanes.



Opportunity to further connect to the waterfront in Douglastown has been identified. However, this would require establishing agreements with private land owners as well as possible land acquisitions. This and any other opportunity which may arise to bring the spine to the water's edge should be investigated as presented.

CITY OF MIRAMICHI MUNICIPAL PLAN

Section 6: Commercial

(D) REGIONAL COMMERCIAL AREA

Policy #3

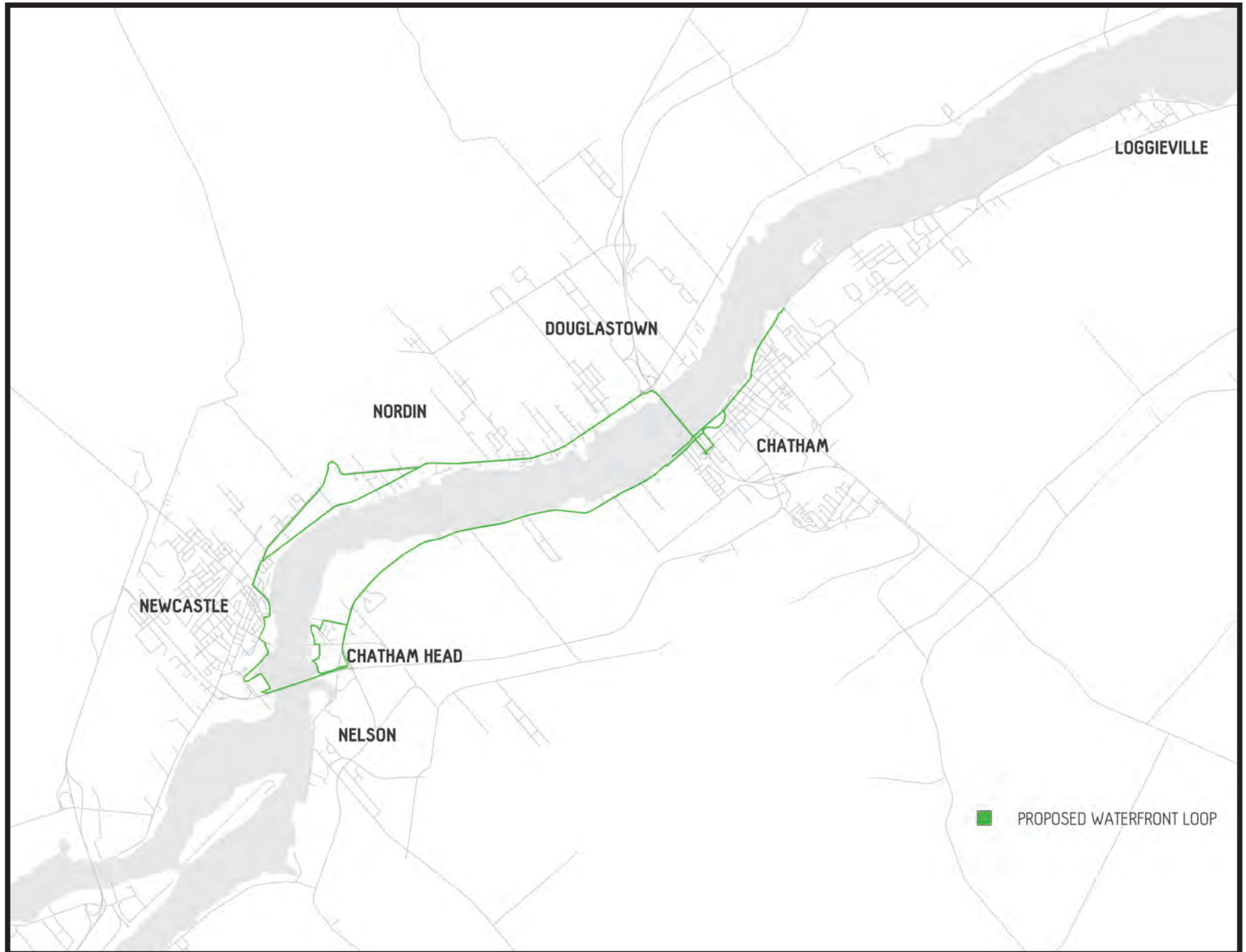
For the area south of King George Highway between Centennial Bridge and Phillips Brook, that development, to the greatest extent possible, be sensitive to and take advantage of the proximity of the Miramichi River, including through provision of greenspace and/or public walking trails immediately adjacent to the shoreline and scenic views of the River and of the Centennial Bridge. A Regional Commercial Riverfront Trail is shown on Schedule D to this Municipal Plan.

Proposal#2

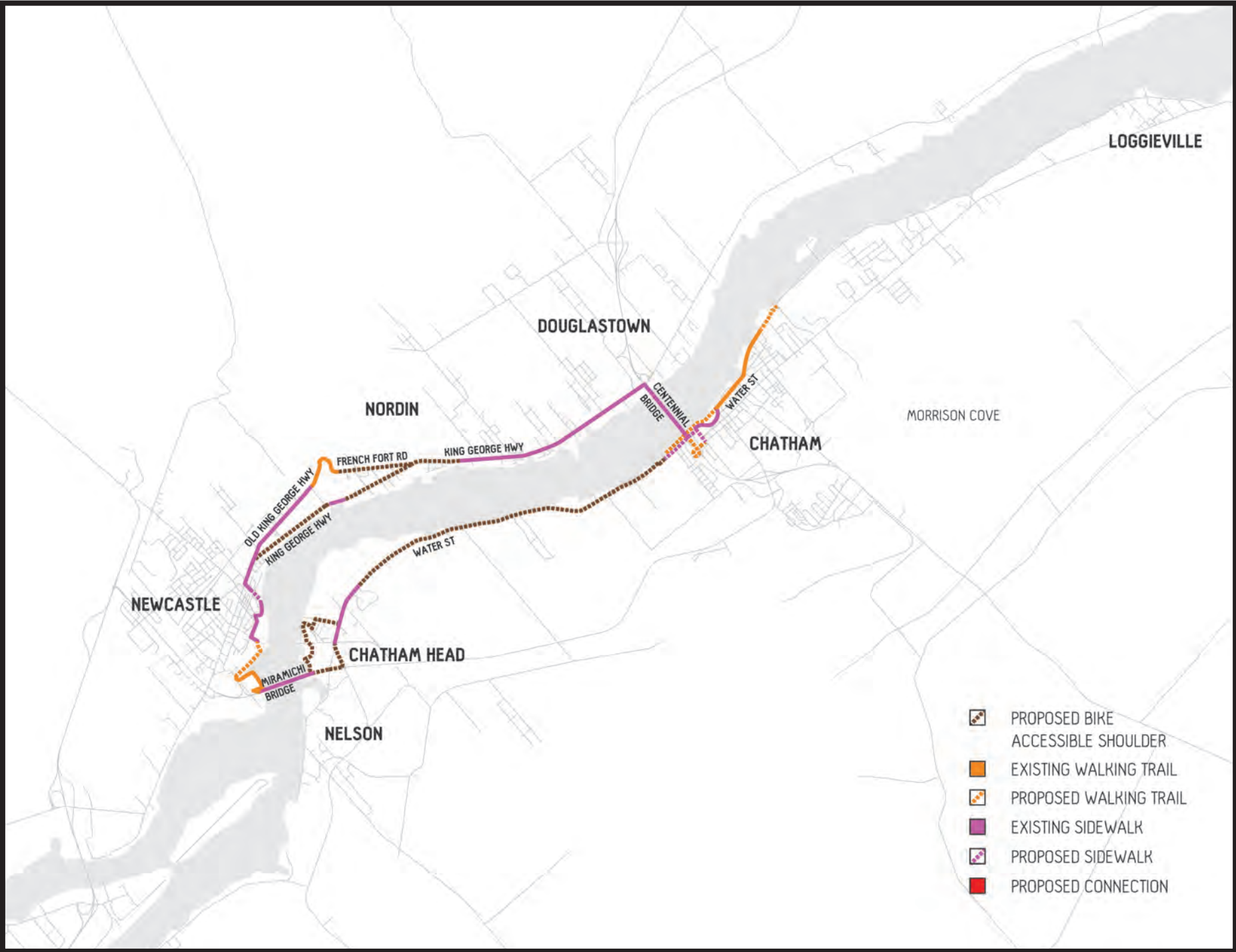
It is a proposal of Council to:

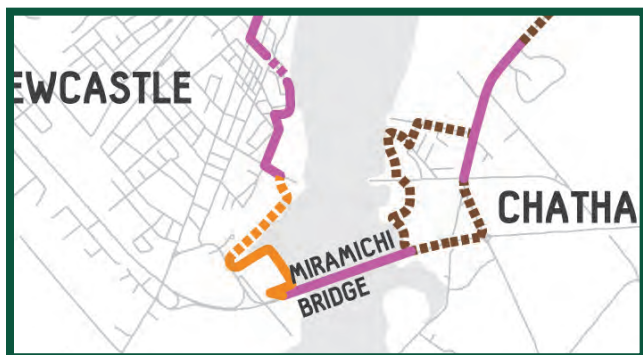
...Improve the quality of the pedestrian linkages connecting nearby residential neighbourhoods west of the Centennial Bridge to the Regional Commercial Area (i.e. the Regional Commercial Riverfront Trail). Council may pursue opportunities to acquire privately owned land in this area to carry out this proposal.⁴

WATERFRONT LOOP TRAIL



WATERFRONT LOOP TRAIL





SECONDARY TRAILS - CLOSING THE GAPS

Upon completion of the Waterfront Loop Trail (the Spine), we were able to overlay all the data including existing AT Routes, the proposed Spine, municipal planned upgrade (new sidewalks) and transit routes in order to identify the gaps. The following section identifies where those gaps are and the proposed solutions.

A number of the existing gaps have already been identified by city Engineering and Transit. These solutions are identified on the map as planned routes and first/last mile bike racks.

School Zones

Walkable Zones in accordance with the School District Transportation Policies have been overlaid on the mapping.

- 1 km radius for grades K-8
- 1.6 km radius for grades 9-12

Neighbourhoods within these zones were reviewed to ensure appropriate sidewalks and bicycle routes were in place to allow children to walk or bike to school. For example, planned shoulder widening on Williston Dr. and proposed shoulder widening on Percy Kelly Dr. connect residents in the local neighbourhood to Gretna Green Elementary School as well as the Blue Transit line and the Waterfront Loop Trail.

Access to Recreation

Existing recreation complexes are all connected to the transit route and the AT network. Connections have been proposed for the new Multiplex site.

Downtowns

In 2019 The Miramichi Downtowns Master Plan was accepted by Council. This report has taken into consideration the Downtowns Master Plan, how it adds to the vibrancy

of the community and how it connects pedestrians and cyclists from residential neighbourhoods, along walking trails and from other locales to the downtowns; drawing residents and visitors in to the commercial cores.

The **Urban Mobility Street** and **Urban Mobility Street with Designated Bike Route** are illustrated on the following map.

The terms Urban Mobility Street and Urban Mobility Street with Designated Bike Route were defined in the Miramichi Downtowns Master Plan as follows:

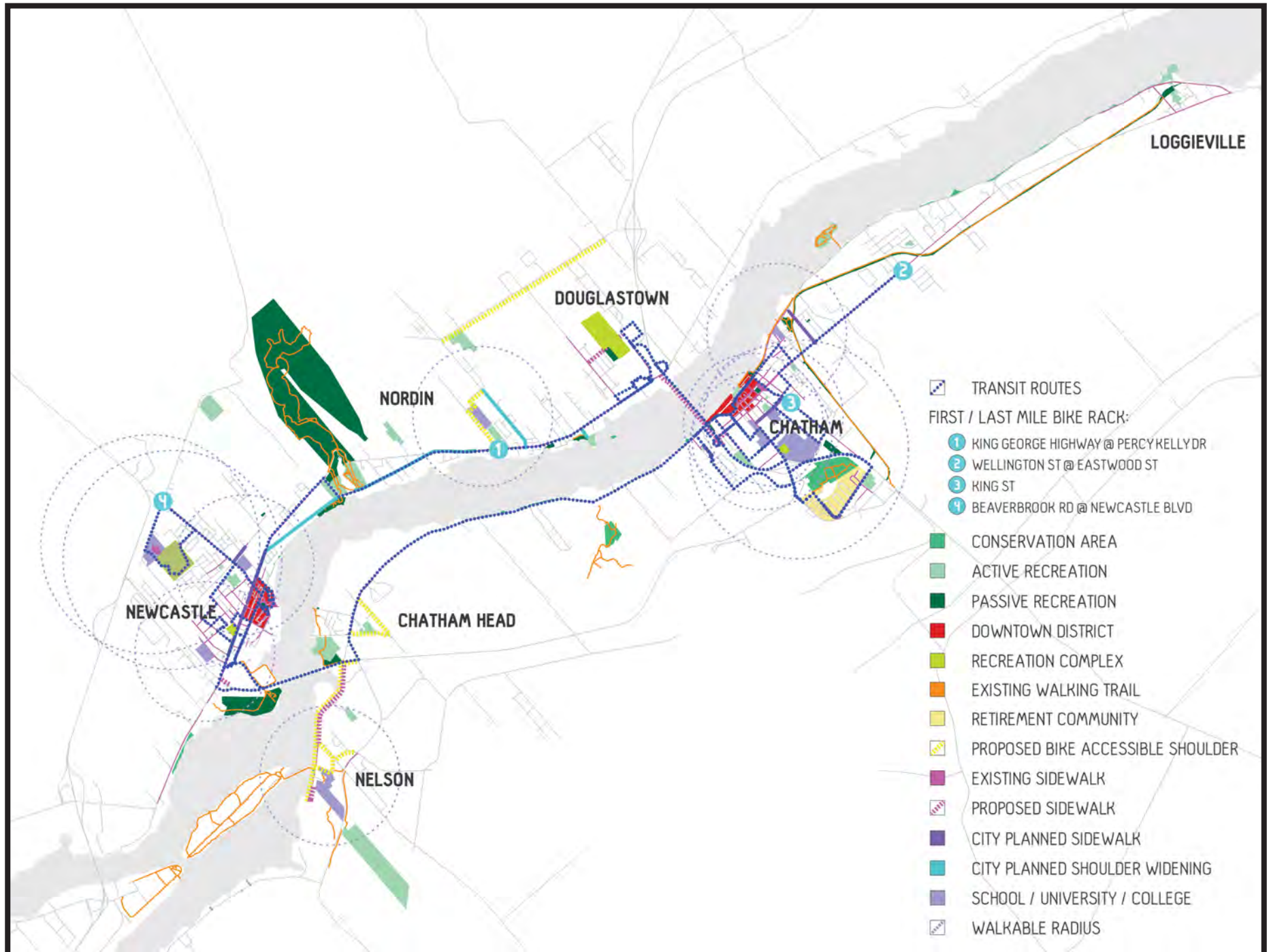
Urban Mobility Street

These are the primary street and pedestrian corridors to and from the downtown core. Whenever possible, these streets shall host sidewalks complete with street trees on both sides of the road and two lanes of traffic. Entrance points from regional transportation routes shall include gateway and supporting wayfinding signage. The following images describe the existing and proposed sections.

Urban Mobility Street with Designated Bike Route

This corridor has the same street components as the Urban Mobility Street, but includes designated bike route infrastructure. Bike routes increase multi-modal transportation options into the Downtown Districts. The following images describe the existing and proposed sections.

SECONDARY TRAILS - CLOSING THE GAP

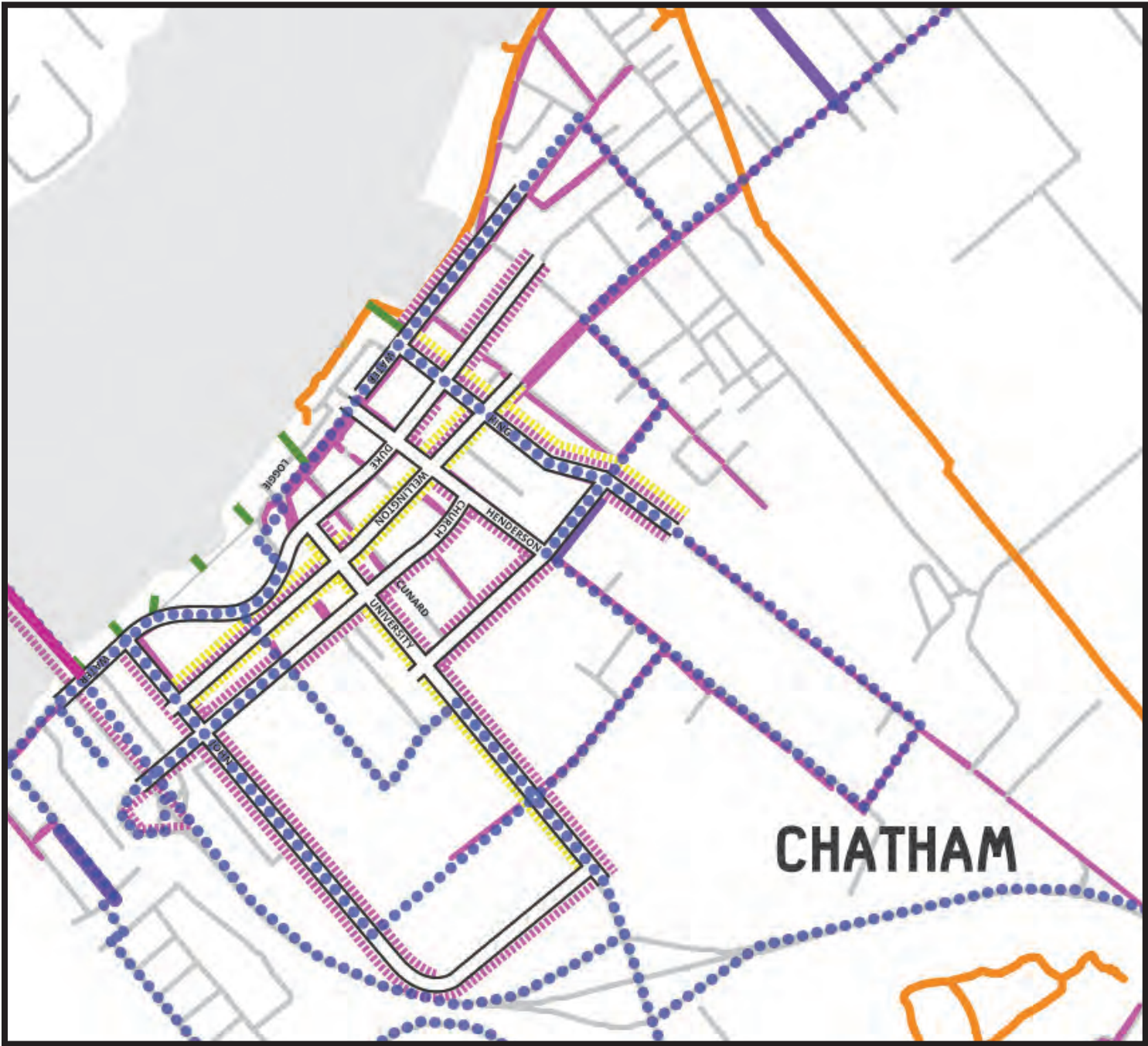


SECONDARY TRAILS - DOWNTOWN NEWCASTLE



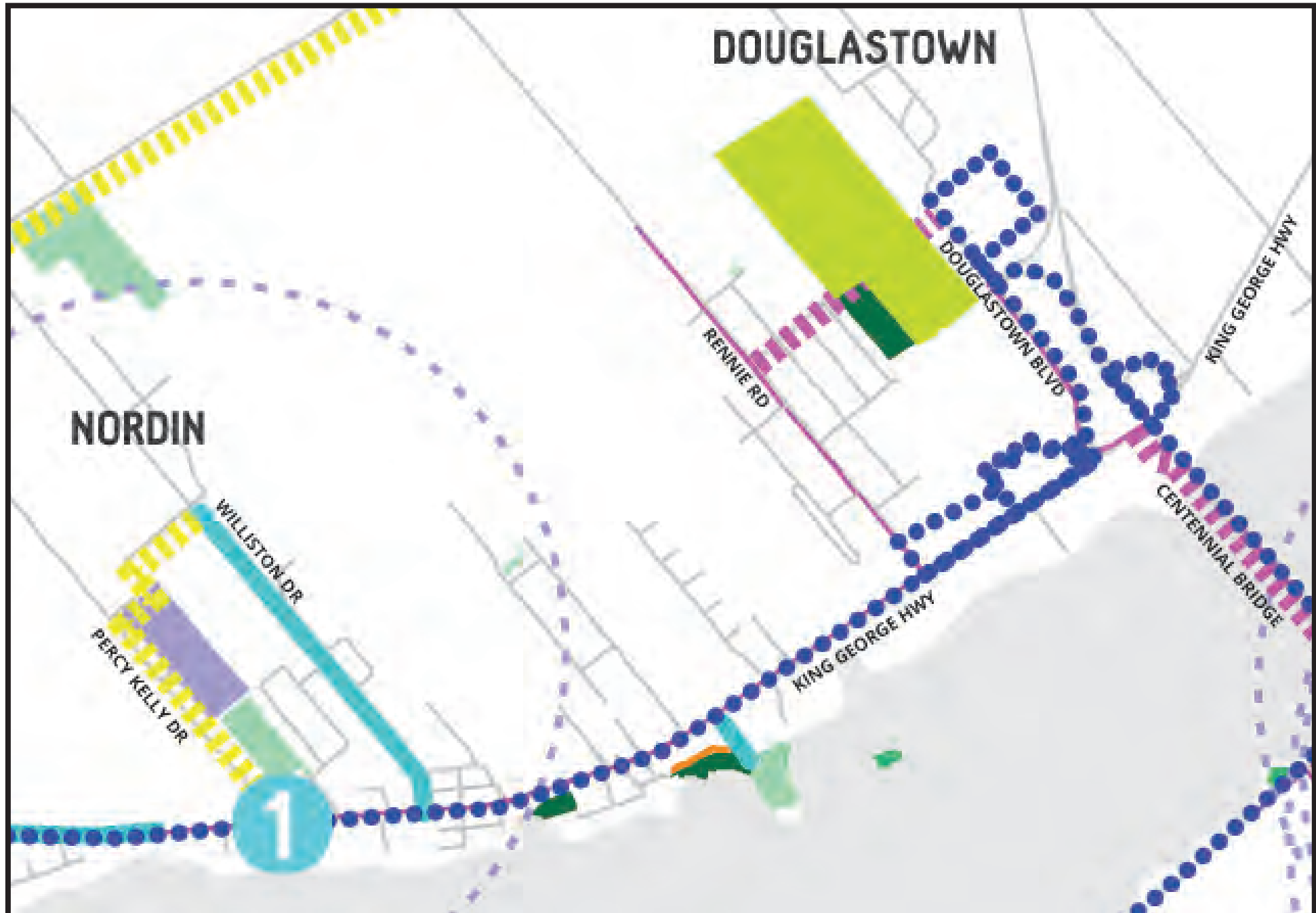
- WALKING TRAILS
- EXISTING SIDEWALK
- PROPOSED SIDEWALK
- PROPOSED BIKE ACCESSIBLE SHOULDER
- URBAN PEDESTRIAN LINK (2019 STUDY)
- BLUE LINE BUS ROUTE

SECONDARY TRAILS - DOWNTOWN CHATHAM

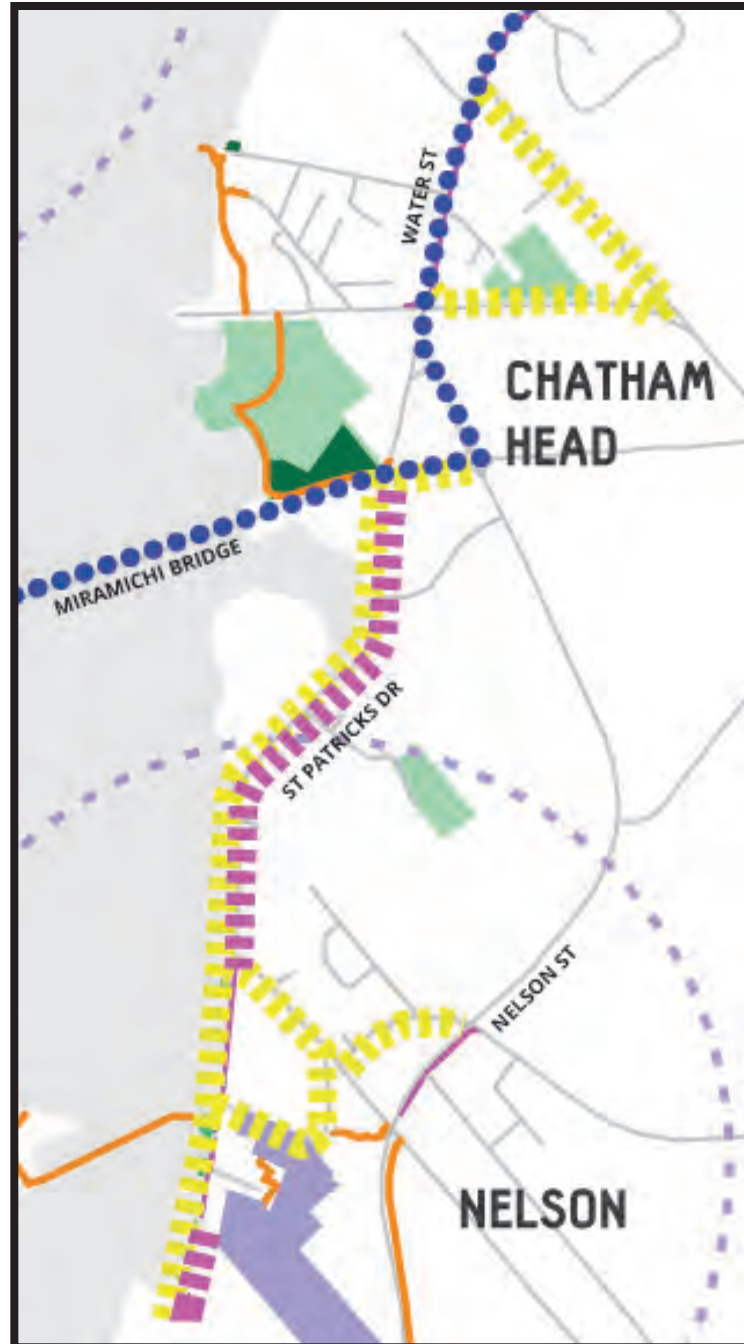


- WALKING TRAILS
- EXISTING SIDEWALK
- PROPOSED SIDEWALK
- PROPOSED BIKE ACCESSIBLE SHOULDER
- URBAN PEDESRTIAN LINK (2019 STUDY)
- BLUE LINE BUS ROUTE

SECONDARY TRAILS - DOUGLASTOWN + NORDIN



SECONDARY TRAILS - CHATHAM HEAD/NELSON



THE ROLE TRANSIT PLAYS

A transit system is another alternate mode of transportation for those who don't own cars or want to drive. Currently Miramichi's transit system is limited. It is subsidized by the city and has little funds for expansion. However, with improved connections, a growing population and a shift away from vehicular reliance, the network has the potential for growth.

Presently the bus system runs from 7 am to 6 pm. Recently the schedule and route were updated in response to customer feedback and the response has been that positive. Key destinations of concern are the hospital, the new Shannex complex at Losier Hall on Water St. and the NBCC campus where hours of operation did not align with staff/ student schedules. These amendments have made commuting easier for customers, but have not alleviated all the problems.

Another pilot project which Miramichi Transit is hoping to run is a night route. This would be a welcome solution for health, retail and hospitality workers who finish work after hours. The current bus schedule means these individuals need to find alternate transportation and are often working to pay for their taxi ride. This is especially burdensome for the workers and students, many of whom are immigrants, trying to establish themselves in a new community.

The AT network can therefore fill the gap to the transit programming, providing alternate means of commuting.

First Mile/Last Mile Bike Racks

First Mile/ Last Mile bike racks are proposed for the following locations:

- Percy Kelly Dr.
- Eastwood
- King St.
- Beaverbrook

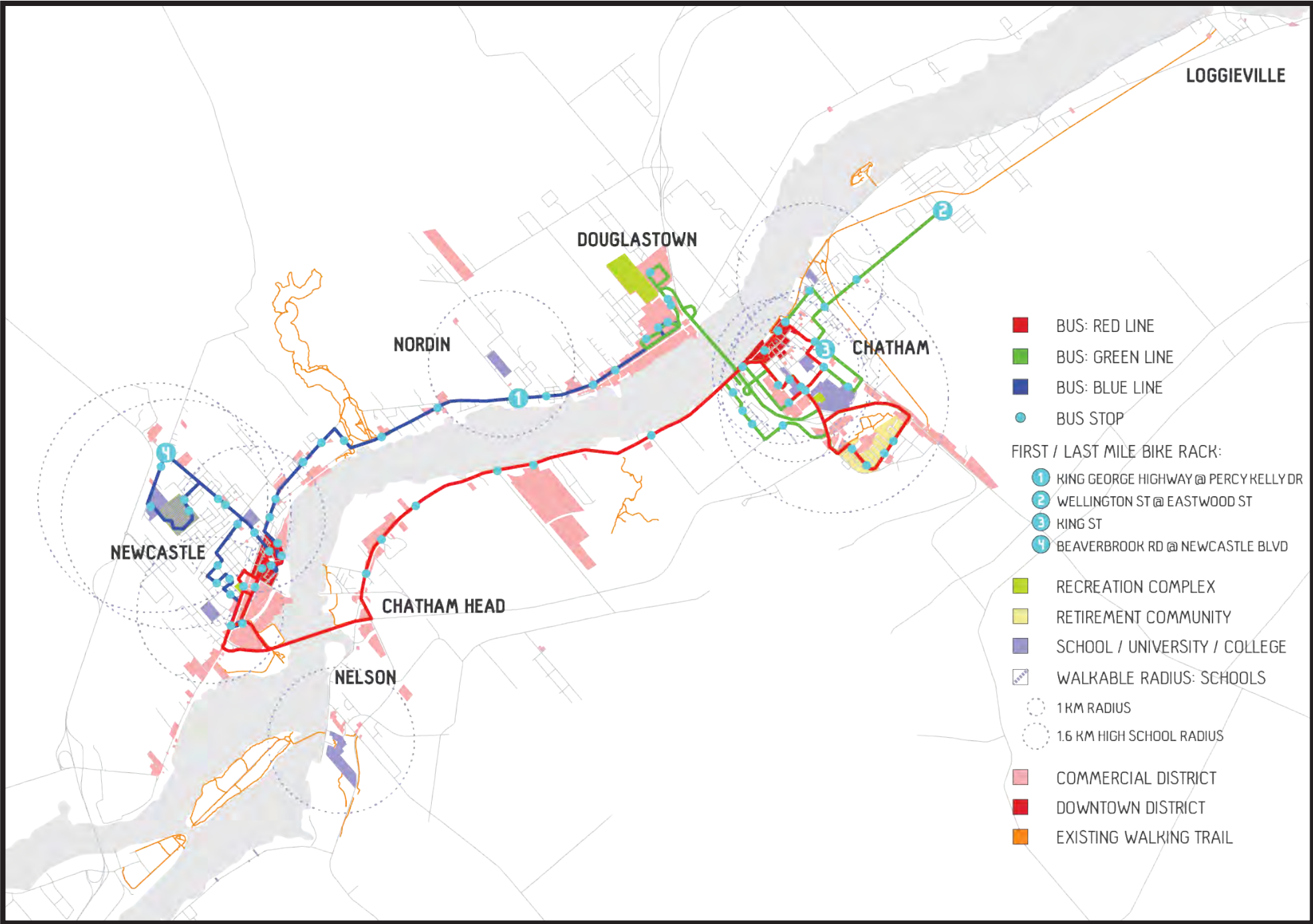
This initiative has already been flagged by Miramichi Transit. The purpose is to provide an option for commuters to ride their bike from within the neighbourhood to the bus line, making the bus route accessible to more residents and to provide a safe place to leave their bike so they don't have to worry about taking it on the bus.

If successful, additional stops could be identified in the future. If warranted, bike racks could be replaced by bike lockers. Bike lockers protect against theft.

This map identifies the first 4 proposed locations for First/Last Mile bike racks. It also highlights AT connections so that users can safely access the bus route from neighbourhoods and key destinations.



MIRAMICHI TRANSIT BUS



WATER BASED ROUTE

The Miramichi River is world famous. The 2020 Economic Development and Tourism Strategy identifies Capitalizing on the Miramichi River as one of its 6 Strategic Priorities.

“Explore, develop and attract opportunities on and around the Miramichi River, leveraging its role as a hub of recreation, tourism and economic activity for the region.”

The water route directly supports this objective- improving this connection and encouraging residents and visitors to engage with the river more. Focusing on the river creates an opportunity to create a more unified tourism destination. The water route identifies boat launches and docking space for both power boats and personal water craft (PWC). There are countless small business opportunities associated with the network from personal water craft rentals to waterfront patios and tour operators. The water route will establish a strong foundation and catalyst for such investments.

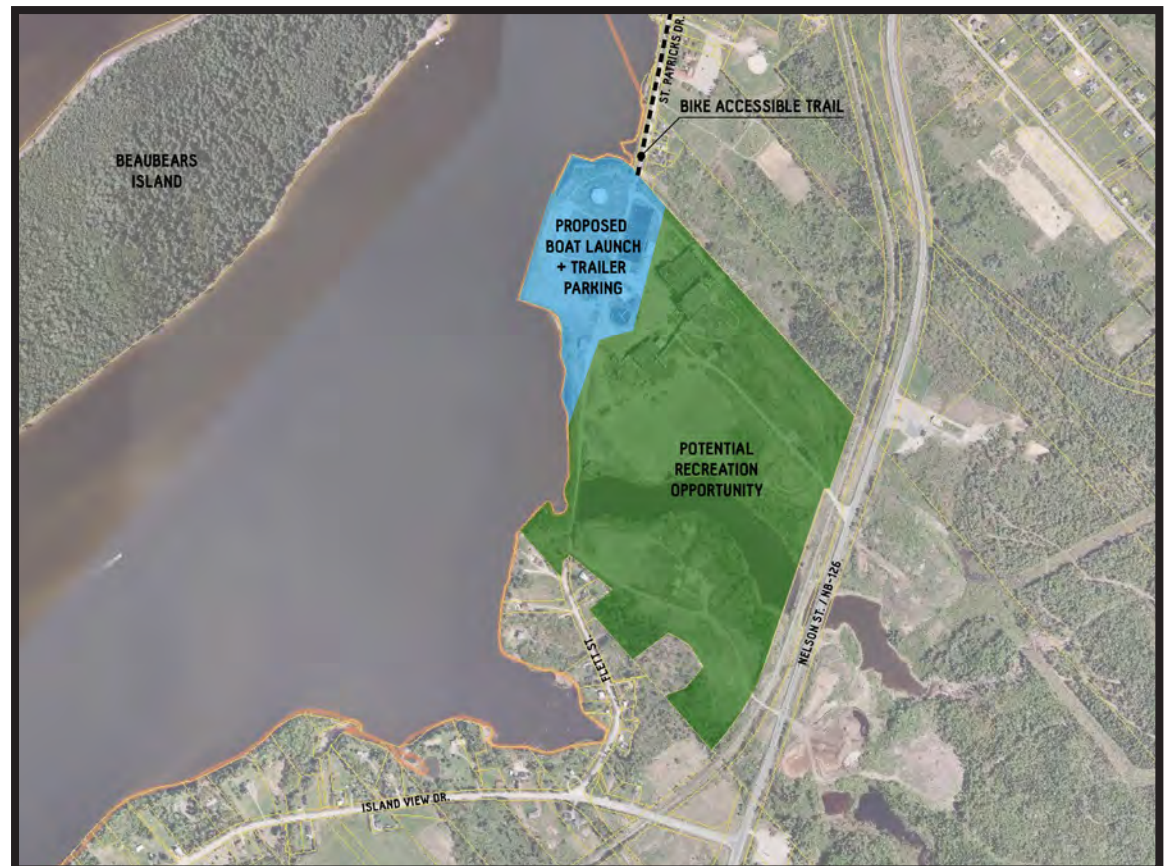
Boat launches include both existing and proposed locations. Presently there is a demand for more boat docking space and trailer parking within the city. Two potential locations have been identified.

Nelson Greenwood Site

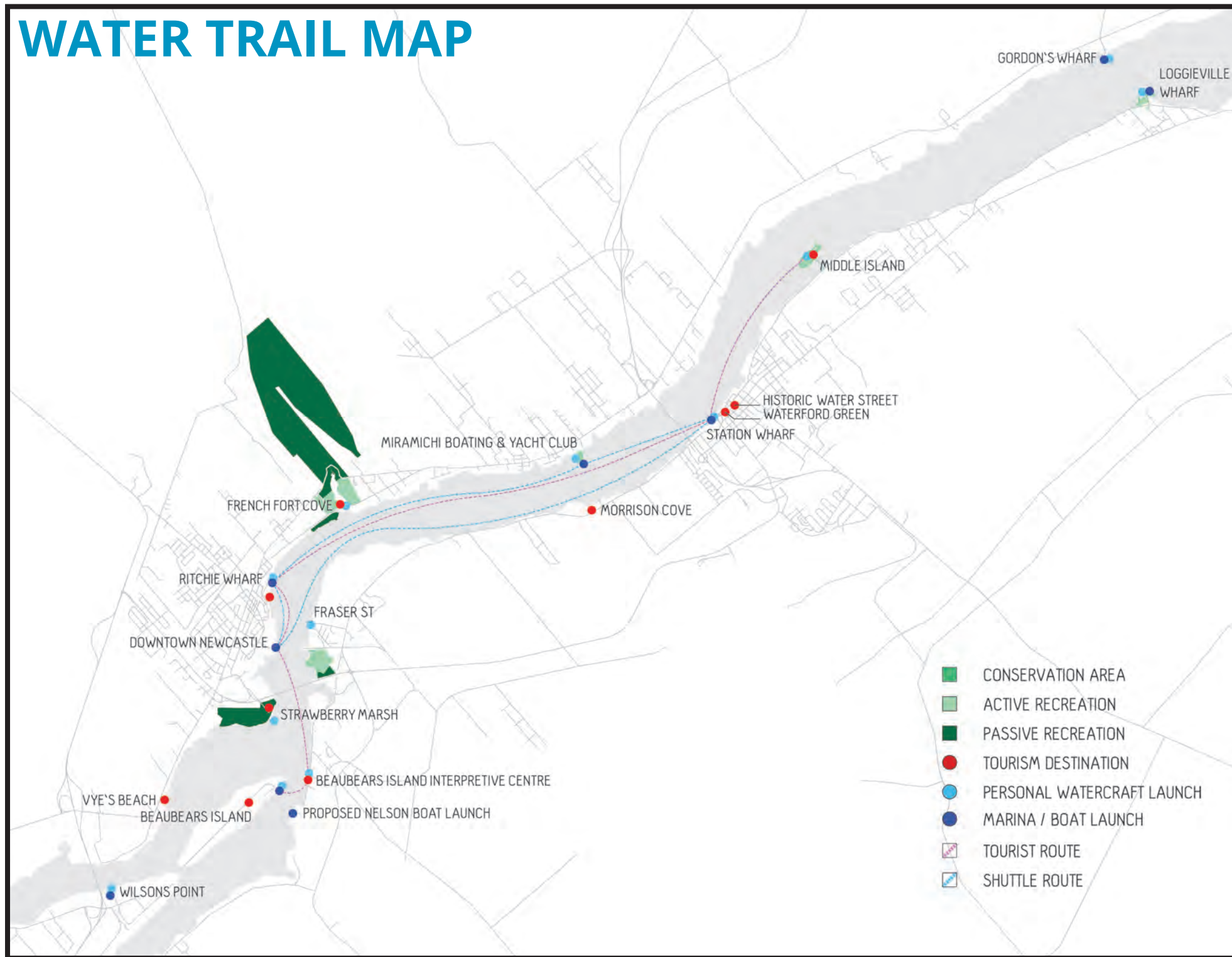
- The first is the old groundwood mill site in Nelson. It is a large site which has space that can be developed for other recreational opportunities as well. Being outside the downtowns allows for more space for trailer storage and parking. It would allow power boats to travel up river without the need to pass through the city,

helping keep the traffic volume down in the city centre where recreational PWC users may be on the water.

- A bike accessible shoulder along St. Patricks Dr. will connect the site to the land-based AT route. This site is just up the street from the Nelson Rural School as well as the Beaubear's Island Interpretive Centre site.



WATER TRAIL MAP

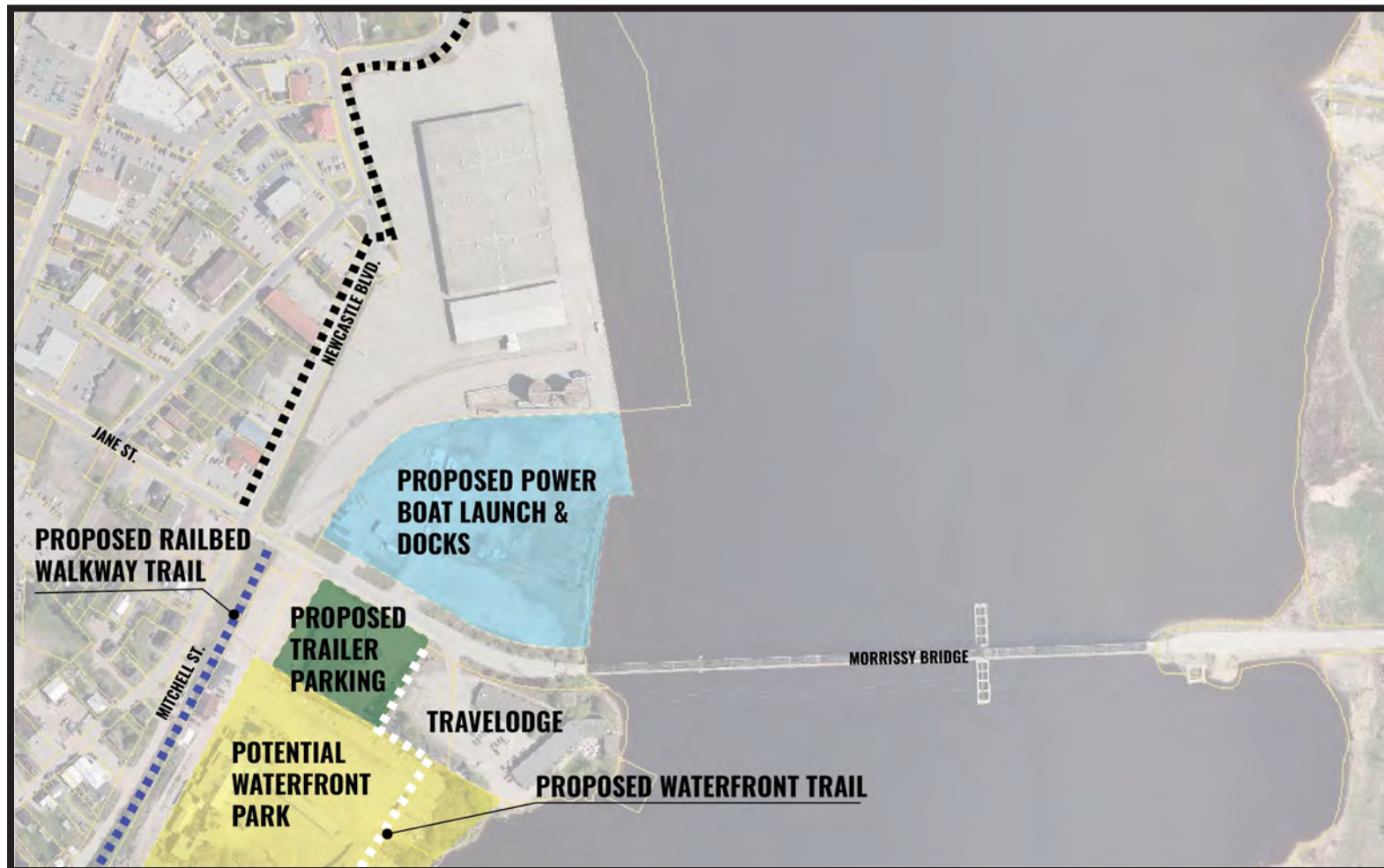


Downtown Newcastle Docks

- Next to the Morriissy Bridge in downtown Newcastle, there is potential to create another boat launch or docking site. This would be a convenient site for boaters to access downtown Newcastle and contribute

to the economy. Trailers could park at the former fire hall site. This location links directly into the waterfront trail network, drawing patrons to local bars and restaurants, connecting them to waterfront greenspaces and community events.

- This site will serve as the powerboat launch and dock site for downtown Newcastle, allowing Ritchie Wharf to become Personal Watercraft only launch, getting the trailers out of Ritchie Wharf. Docks can remain at Ritchie Wharf, but not power boat launching.



As the city develops its waterfront offering, a shuttle service would be a great opportunity to ferry people from destination to destination connecting to downtowns, recreation and event spaces and outdoor dining venues.

A number of safety measures are recommended to accommodate the interaction of personal water craft and the ever increasing number of power boats. Further planning would be required. However, the following is a list of recommendations:

- Establish PWC-only zones if possible, clearly identified with markers
- Establish speed limits within city limits for boaters
- Post no-wake zones around marinas and boat launches
- Post safety and etiquette signs at all boat launches to inform boaters and encourage them to be more vigilant



Personal Watercraft Launch Sites

Personal watercraft launch sites should include at a minimum:

- A sand or gravel launch
- Information signage
- Map of water route
- Parking
- Separation from power boats

It is recommended that a couple launch sites in the city incorporate universally accessible launches.

Other sites which are more developed, such as marinas, may have launches for PWC which use docks, wharves or ramps.

These launches can be at marinas or beside power boat launches or located independently in quiet, accessible areas of the city with little other amenities required.



Kayak lockers are another amenity which the city may want to offer at a few of the sites. Perhaps they could be rented out seasonally.

A good reference document for developing water-based routes or “blueways” including personal watercraft launch sites is the “Trans Canada Blueways Trail Guide” published by the Trans Canada Trail.

One measure to maintain optimal conditions for PWC and ensure their safety is to define PWC zones. One of the primary concerns is to clearly demarcate such zones so that power boaters proceed with caution. It is proposed that the zone between the Miramichi and Morrissy bridges be designated as a personal watercraft zone, including the cove just below the Miramichi bridge on the Nelson side. This area was selected for a number of reasons:

- It can be accessed by launch sites close by on BOTH sides of the river- Strawberry Marsh and Fraser St.
- The boundary can be clearly defined by the two bridges
- The area has a number of coves to offer protection

- The acquisition of lands in Newcastle and rerouting of the trail along the lagoon has potential to develop this area into a waterfront park
- It is 1 km from Ritchie Wharf where a rental operator can launch tours and lessons from, using the coves for their groups
- The Travelodge is developing a waterfront presence and can become a popular destination

Other small coves could easily be flagged as PWC-only with a couple signage buoys at their entrance.



Water Trails

Two separate water based trails are recommended:

The Tourism Route

The Tourism Route would focus on a circuit taking primarily tourist to tourism focused destinations. These destinations would be based on the former Miramichi Landings Eco Museum destination, but additional stops could be incorporated as well based on popularity and demand. The downtowns are accessible from the Ritchie Wharf and Downtown Newcastle/Station Wharf stops which are convenient locations for tourists to access the water trail and to end their trip with shopping and a meal. A hop-on Hop-off style fare is recommended.



The Shuttle Route

The shuttle route is intended for commuting and would be used by locals as well as visitors. It could be used for commuting to work, shopping or crossing the river for dining or entertainment. The fare could be single trip, round trip, punch-pass or monthly. This opportunity would transform the image of the river from a barrier that divides the city to its core that connects it. It could be very impactful to the vibrancy of the city.

The city could tender the operation of the shuttle route to a local tourism or transportation operator or run the service itself. Coordination between public and private destinations and tourism organizations could take advantage of the water trails to offer additional programming at destinations or even coordinated between multiple destinations.



ACTION 2: SPECIAL TRAIL TYPES

PAVED TRAILS

Paving of trails was identified as the second highest priority in the AT Plan by residents with 48% of residents listing it in their top 3.

Based on survey data, 32% of residents are cyclists while 89% use the trails for walking and running. While there is potential to expand the paved trail network over time, the data indicates that pedestrians are the number one user of the trails. The bike club requested a minimum of 4.5 km of paved, off road trail in the initial phase of trail paving.

The paving of trails should be an ongoing long-term plan whereby the mileage of paved trails is increased over time. A number of routes have been identified and prioritized. The first route should be tackled right away.

There is potential to pave the entire route to Ross St. in Loggieville. However, it is recommended that the section from Water Street to Wellington Street, just before Lebreton Drive.



Multi-Use Trail from Downtown Chatham to Loggieville

The proposed route runs along the old rail bed from Loggieville to Highway 11 at the Portage restaurant. A spur along Water Street connects it to downtown Chatham as well. The majority of this route is already designated for ATV use (route 1701). The portion from downtown Chatham to the Portage restaurant is also the first 4.5 km of the route identified by Miramichi Cyclists for Healthy Living. With the last stop on the bus route towards Loggieville being Eastwood St., there is no connectivity for residents in that area except along this trail. For these many reasons, this route is the favorable route to begin the city's paved trail network. The initial 4.5 km from Waterford Green to Hwy 11 at the Portage restaurant is recommended as the first section to be paved. Ultimately the goal would be to pave the entire length of the trail to Ross St. in Loggieville.

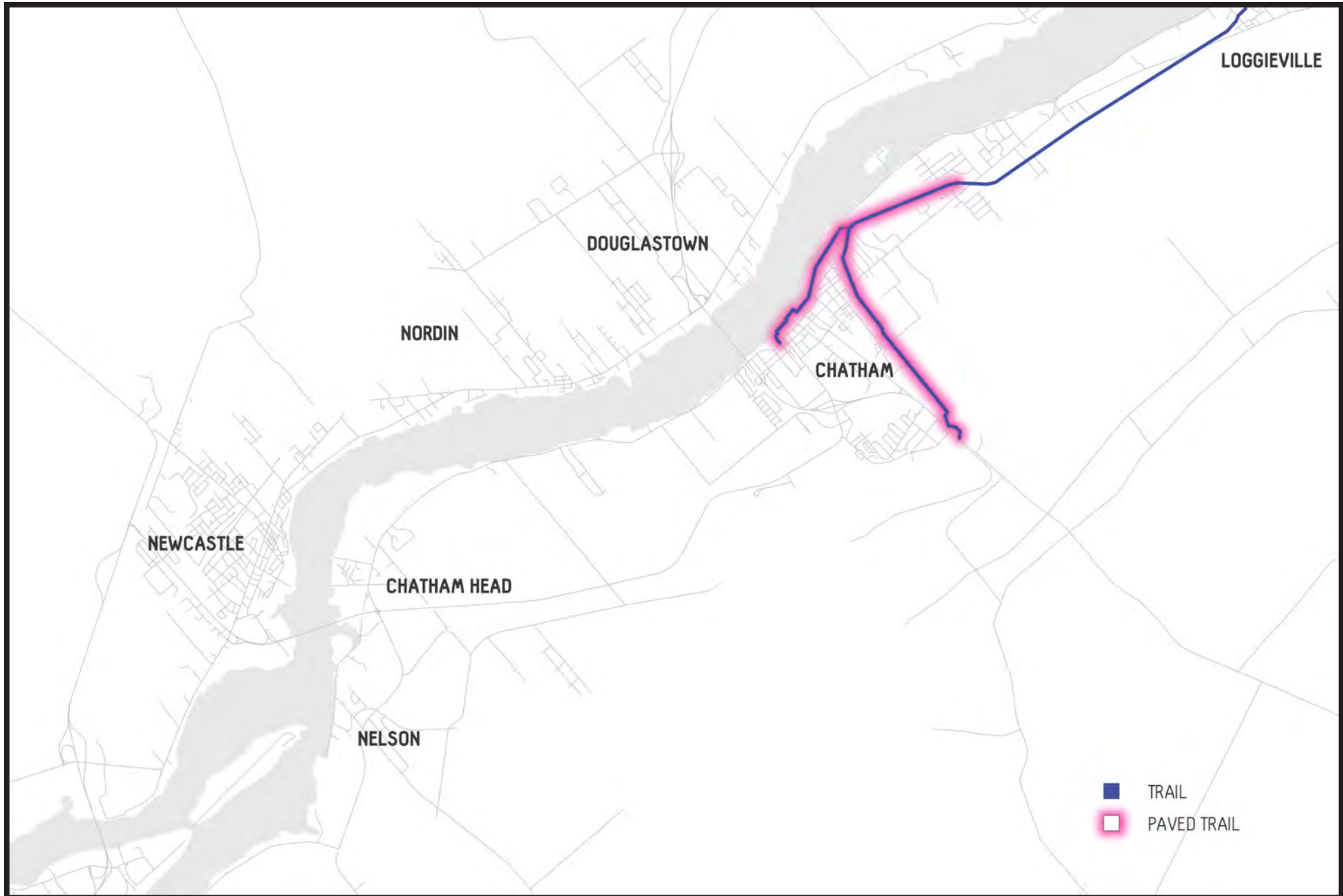
This trail connects many neighbourhoods, can be multi-use, is picturesque, and connects to both the waterfront and downtown. By widening and paving this trail, it is positioned to become a very popular recreation and travel corridor for a variety of users and an invaluable asset to the neighborhood.

Miramichi Cross Country Ski Club

Currently the Miramichi Cross Country Ski Club (MCCSC) owns 90 acres of land and has 25km of trail developed. They have access, through partnerships to excessively more land as well.

One opportunity towards potentially transforming this into a multi-functional facility for community residents is to pave the existing 4km of lit trail. This loop has internal connections which allow users to select distances of 1 km, 1.5 km, 2 km, 2.5 km, 3 km or 4 km. It is recommended that this loop be looked at for a paved trail. Because of its design, it has the potential to be paved in stages, depending on budget.

PAVED TRAIL MAP



GROOMED WINTER TRAILS

In our climate, winters are long and cold and days are short. Recreation opportunities are important for both mental and physical well being. Groomed winter trails would provide a variety of recreation opportunities within the city.

94% of respondents said they would use groomed trails throughout the winter. While 85% were willing to travel to access the groomed trails. This means residents would appreciate a destination for winter recreation and are not expecting trails to be groomed throughout the city.



French Fort Cove

The most popular destination was French Fort Cove (40% of respondents). This past winter the Fat Bike Club paved a number of trails in the cove which were used by walkers and snowshoers as well. It is recommended that this arrangement be developed further going forward. Partnerships are essential to achieving the AT goals for the city as they expand the resources available and pick up where staffing and funding limitations leave off. If more trails are going to be groomed in the cove on a regular basis, it would be preferable to identify them as either Fat Bike or snowshoer/ walker as the mixed use can cause conflicting challenges to the conditions for various users. The city should work with the club to develop signage and trail maps which clearly identify the different user trails and post etiquette to educate users.

French Fort Cove is already the city's most popular recreation hub, so it is natural to focus on developing this as a year round destination.



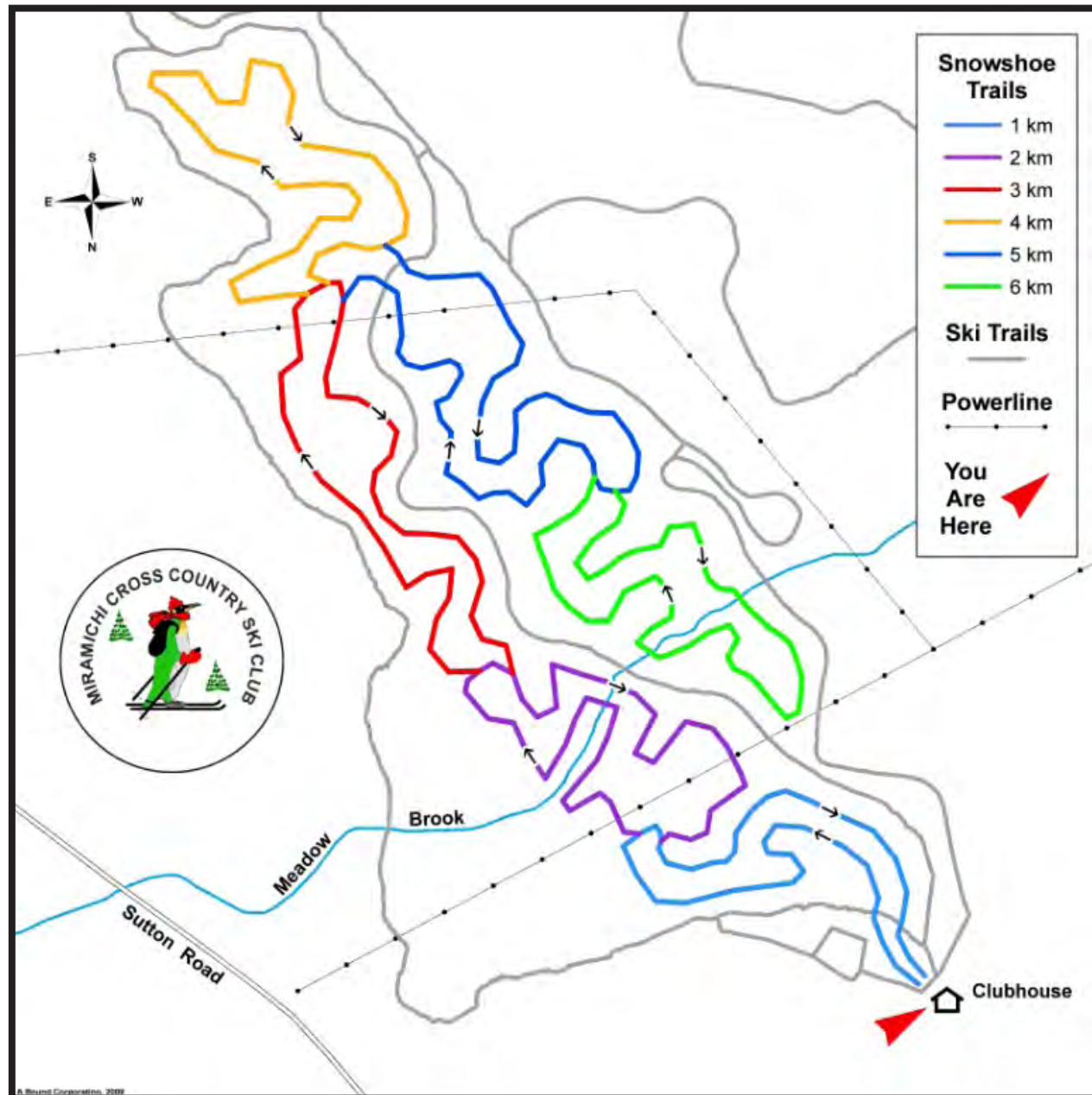
Miramichi Cross Country Ski Club

Only 11% of respondents identified the Miramichi Cross Country Ski Club as their preferred destination for groomed winter trails. However, this is likely due to the fact that it is a member-based club which may have a perception of being member-only or solely for cross country skiing. Should the city develop a working relationship with the club and the club be promoted residents as a multi-use destination open to the public, its popularity would likely soar.



MIRAMICHI CROSS COUNTRY SKI CLUB TRAILS MAP

(Courtesy of Miramichi Cross Country Ski Club)



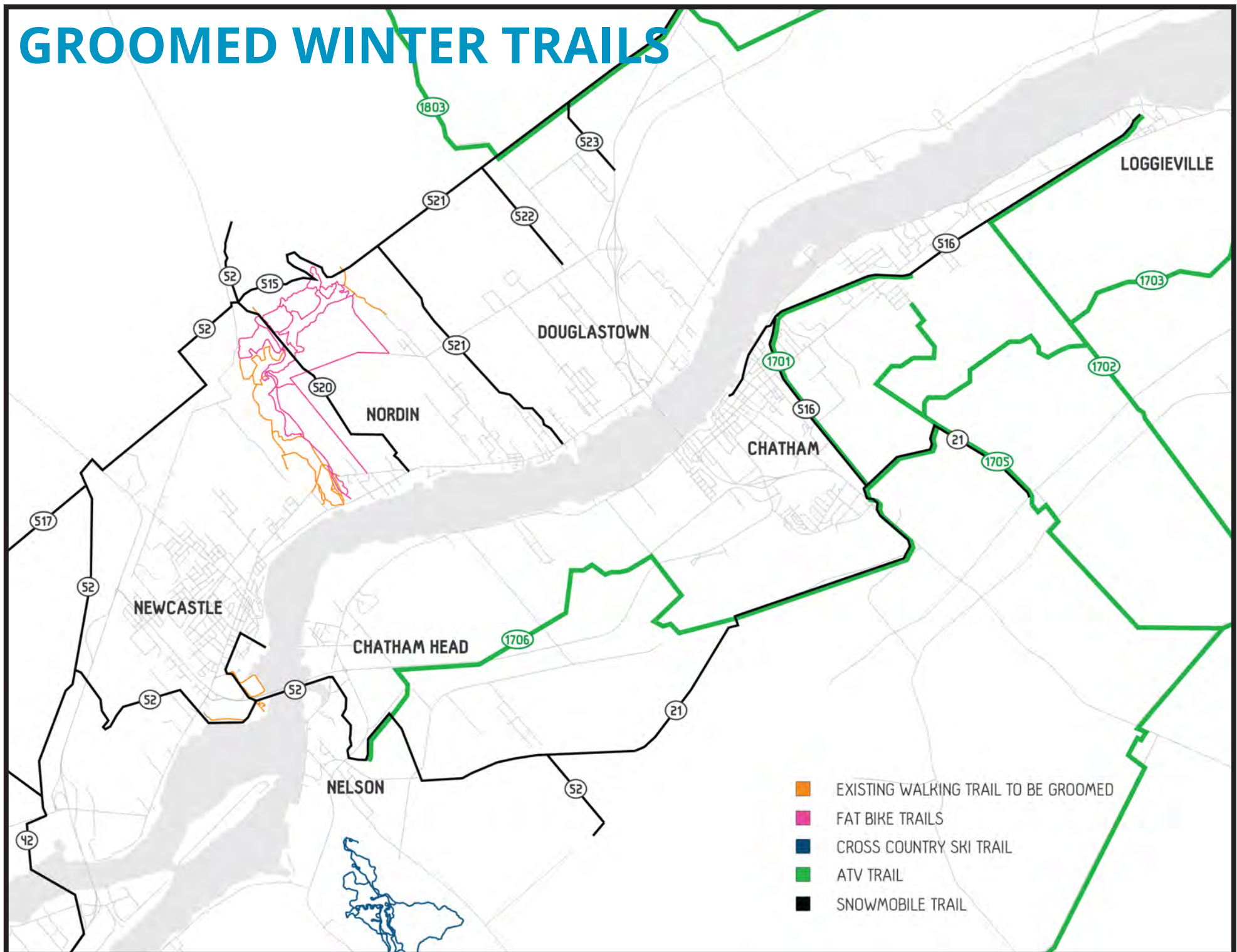
In the past year a \$1 million investment was completed which includes 4km of lit trails.

With the vast network of existing trails and the potential to develop more, the possibilities at this site are endless. There could be separate trails for cross country skiing, fat biking, snowshoeing (there are presently 25 km of trail already designated as snowshoe only), and winter walking. The lit trails mean the destination can also be used as an evening destination and the lodge can provide a nice finish to a winter outing, offering refreshments and light snacks. The potential for development would be much quicker if the city was to partner with the club and the resource would bring amazing value to the community.

Riverfront

37% of respondents identified the riverfront as their preferred destination for groomed winter trails. This is not surprising as it is accessible to most residents, connects to resources such as downtowns, restaurants and shops. While sidewalks would be cleared, road shoulders are not ideal walking surfaces in the winter, therefore, French Fort Cove and the Miramichi Cross Country Ski Club (MCCSC) make a lot more sense as the waterfront in Miramichi does not have much opportunity for riverfront off-road trails. The best potential section of waterfront to groom for recreation would be from the Miramichi bridge to Ritchie Wharf. It would be primarily off road, have nice views and accessible to parking and downtown. It is recommended that French Fort Cove and MCCSC be looked at first.

GROOMED WINTER TRAILS



JOINT-USE TRAILS

There are two types of joint-use trails to address in the AT Plan: Human Powered-ATV trails and Human Powered-Snowmobile trail. There are sections of trail that are joint-use between ATVs and snowmobiles. These are governed by the NBATVF-NBFSC Joint Use Trail Memorandum of Understanding and will not be addressed in this report.

Human powered - ATV Joint-Use Trails

QuadNB Trail 1701 follows the old rail bed from Loggieville through Chatham where it connects with 1706 to continue south to Nelson. In fall of 2020 and again in spring 2021, access was granted west of Wellington St through England's Hollow, completing the route. This is the same rail bed which is used by walkers and cyclist and is flagged as the primary destination for the creation of paved trails. So far, the pilot project conducted the past two seasons has had little incident and the city has not had to deal with any major complaints. This route could be open to ATVs each season from April 17 through to December 15.



One of the benefits of joint-use trails is that regional ATV clubs invest in maintaining their own trails, so the city can benefit from shared resources in maintaining the trails.

Joint-Use poses a number of user concerns. However, in a community where Quad activity is part of the culture, it is natural and inevitable for the users to want access to the same trail network. With proper education, a symbiotic relationship can be attained and expanded trail access can be enjoyed by all.

Motorized vehicles are sharing the trail with non-motorized vehicles in other communities around the country, but the practice is relatively new and no formal

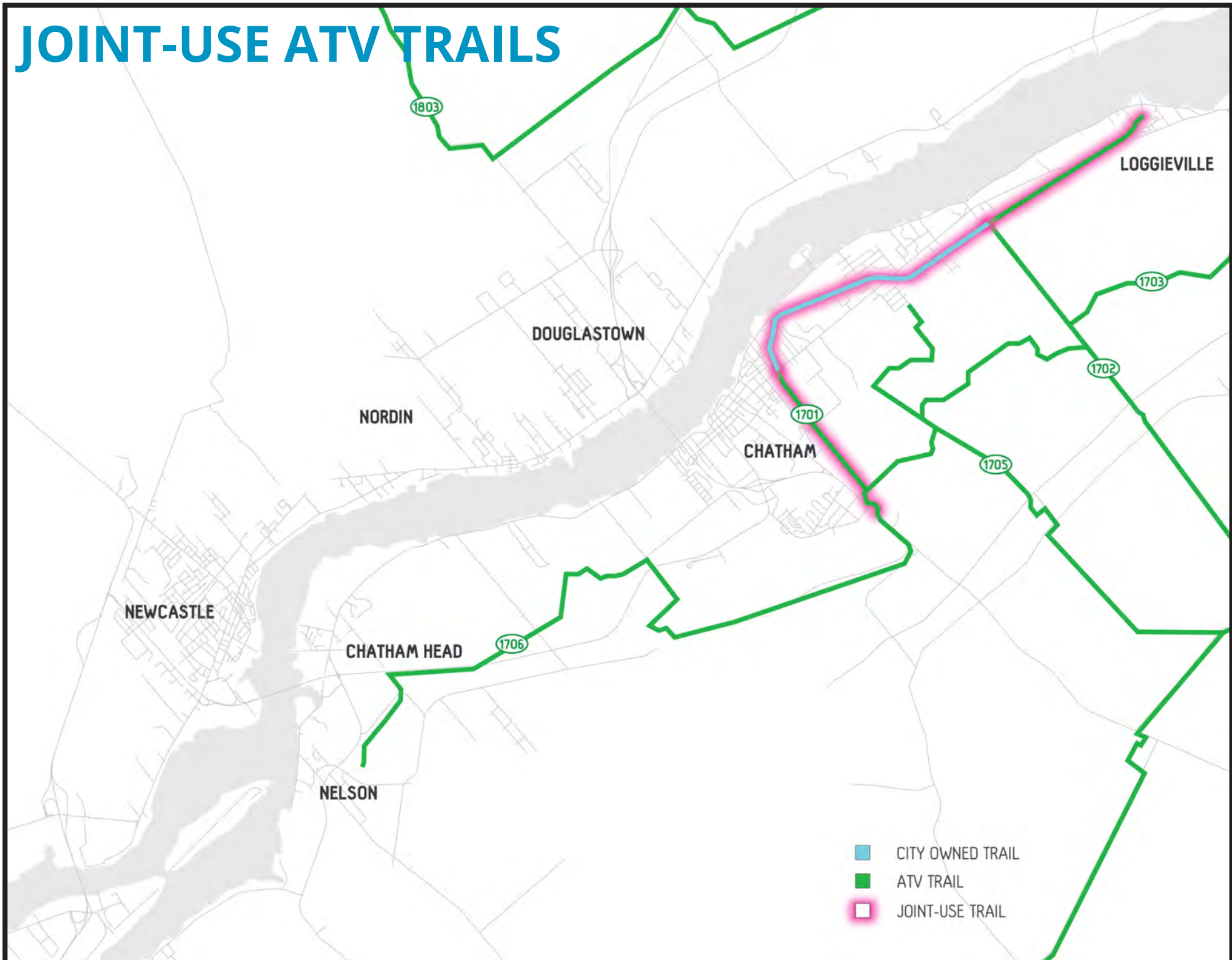
guidelines or standards exist. The following recommendations are based on best-practices, common sense and what is working in other pioneering communities.

Education is the key to achieving a successful joint-use trail network:

- Speed limits- speed limit signs should be posted within the shared trail. Speeds should be limited to 30 km/hr
- Signage- in addition to posted speed limits, there should be safety signage posted on the trail such as shared use and, at major points of entry, etiquette signs



JOINT-USE ATV TRAILS



Formal agreements should be signed between the city and the federation. The local club should be responsible for maintaining the trails they use and repairing any damage cause by the ATV traffic. They should also carry liability insurance (which they already do, so this should not be an added responsibility).



Human powered - Snowmobile Joint-Use Trails

With the Snowmobile trails it is more a matter of *“if its there they will use it”*. There are not trails designed with the intent of being used by both snowmobilers and non-motorized users. However, in the winter, when a groomed trail exists, the temptation is to take advantage of these trails for walking dogs, snowshoeing or cross-country skiing.

Be it a local neighbourhood that backs on to a snowmobile trail (520, 521) or one that is designated for pedestrians during other seasons (510, 511, 529), this behaviour should be anticipated and planned for.

Snowmobile Joint-Use trails pose an additional risk due to the typically high speed of travel of snowmobiles.

Measures for Human Powered- Snowmobile Joint-Use trails include:

- Posted speed limits
- Notification signage (so users are aware of other traffic)
- Posting of etiquette at key points of entry
- Non-motorized users have the right-of-way
- Identification of start and end zones of joint-use trail

The NBFSC should educate their members about sharing the trail with non-motorized users. The clubs carry liability insurance. Policing by the clubs may be necessary as well.

This is another opportunity for the city to partner with another organization to share costs. The snowmobile federation is responsible for grooming their own trails and posting and removing seasonal signage.

The following should be established

- Establish a Memorandum of understanding between NBFSC and City of Miramichi
- Snowmobile users will respect and share the trail with other winter users during this time
- Define responsibilities for maintenance by respective groups
- Develop, publish and promote a Trail Use Code of Conduct document (A draft example is provided in Appendix III)
- All local and provincial NBFSC regulations must be followed at all times

- Establish trail standards (see below) and ensure trails are developed and maintained to these standards all season

Signage

- Develop and post appropriate signage
 - Signage should be consistent with municipal signage standards where possible
 - Established NBFSC signage will be incorporated
 - Signage will be posted to Inform and Educate trail users what activities are allowed and what etiquette is appropriate
 - Signage needs to be maintained and inspected as it will likely be damaged or removed for a number of reasons. Maintaining proper signage is imperative to the safety of trail users and the condition of the trails.
 - Signage should include the following:
 - Trailhead signs- located at access points
 - Safety signage- refer to and respect signage developed for and used by the NBFSC



Wayfinding, Directional and Service Signage

- Will be posted and managed by NBFSC

Maintenance

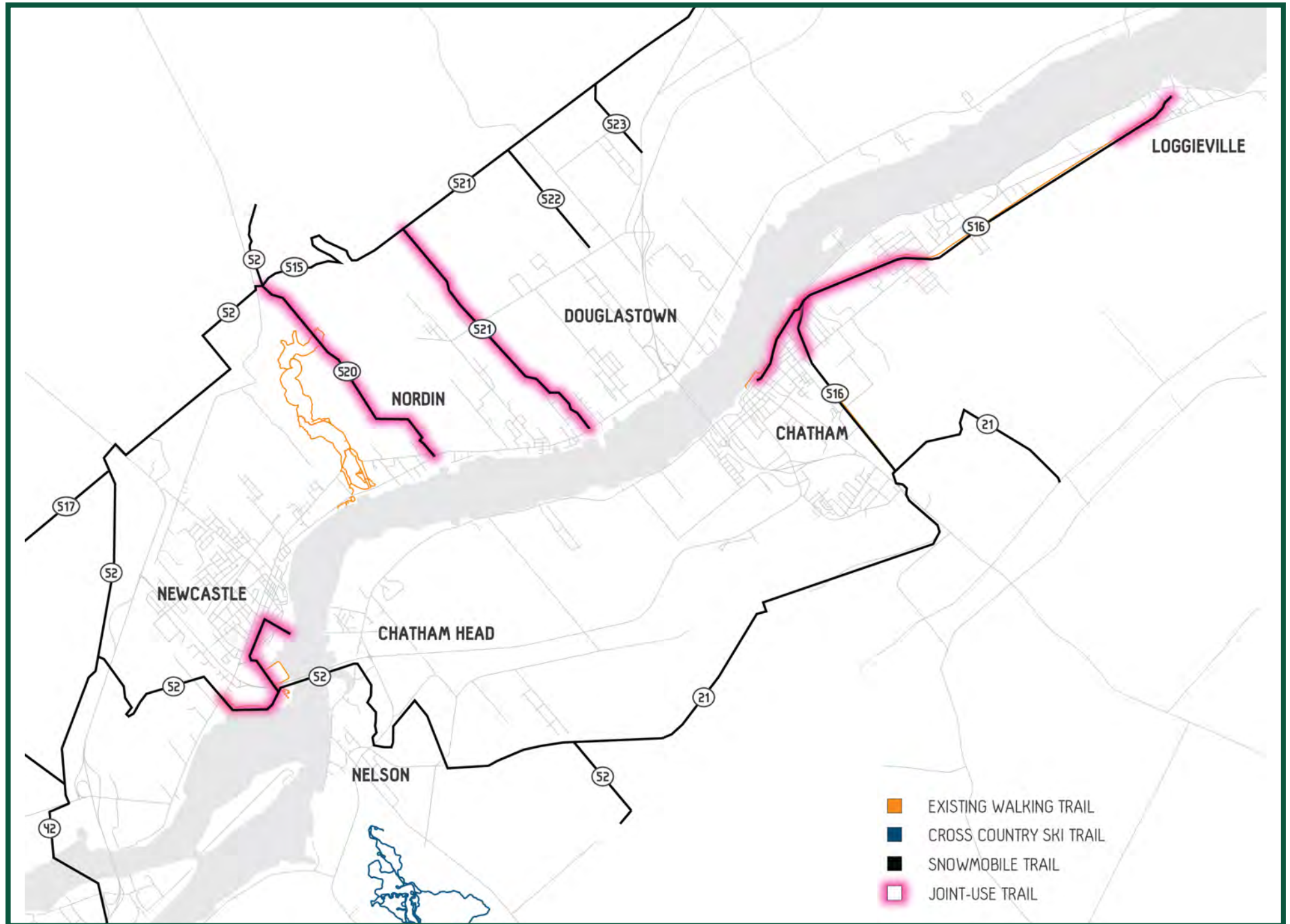
- Trail maintenance is managed by NBFSC and the local clubs. For sections of trail which are joint-use, the City may want to consider their role/contribution to trail maintenance in their agreement with the snowmobile federation
- Trails may be closed at certain times of the year to certain modes of travel to preserve the trail bed due to wet conditions

User Education and Regulation

- NBFSC is responsible for selling permits and self regulation of its members
- Individual trail users are encouraged to report any incidents to the municipality who will determine appropriate further action
- Miramichi City Police and off-road vehicle enforcement (Department of Justice and Public Safety) may from time to time monitor trail use

With the addition of new groomed winter trail destinations (see the previous section "Groomed Winter Trails", page 61-63), hopefully pedestrians, cross country skiers, snowshoers and other recreational users will be more likely to use designated groomed trails, thereby limiting the volume of non-snowmobile traffic on the joint-use trails.

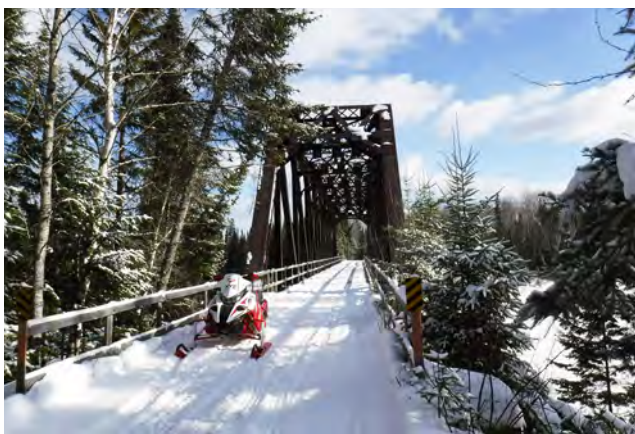
JOINT-USE SNOWMOBILE TRAILS



SNOWMOBILE RIVER CROSSING STRATEGY

According to *The 2019 Snowmobile Economic Impact Study* report the snowmobiling industry is worth \$90 million to New Brunswick's economy. In neighbouring Quebec it is worth \$2 billion. Our province has the potential to build it's industry to this level. The primary North- South trail traveling through New Brunswick is Route 52. The Miramichi River Crossing is the one major interruption to this route. The Miramichi River Crossing is a major provincial economic and tourism factor.

The river itself is unreliable. Locals are comfortable crossing the river, but the season is only 4 weeks long and, with global warming and increasingly unreliable winter conditions, even that is not guaranteed. Visitors are, for the most part, not comfortable due to their unfamiliarity with the river.



The province has ownership of the three bridges which cross the Miramichi River. There are two potential river crossing opportunities; the Morrissy Bridge and the Miramichi Bridge.

The Morrissy Bridge

The Morrissy Bridge has been deemed not worth the cost of repairing. However, since its decommission in 2008, the bridge has been left standing. Although it is posted as closed, locals continue to use it for recreational river crossings. It connects directly into downtown Newcastle. Among the many benefits of retaining the bridge, is the important factor of separating recreational users from vehicular traffic. The bridge could accommodate snowmobiles and ATVs as well as pedestrians and cyclists. The potential economic benefits of not only expanding the provincial snowmobile tourism industry but also the rapidly growing ATV industry should be weighed against the \$15 million⁵ + cost of repairing the bridge.

As this option has been rejected a number of times, alternative solutions for all active transportation routes have been outlined in this report. However, it is the suggestion of this study that the province revisit the potential return on the investment in restoring the bridge for recreational traffic only.

Two additional factors should be considered when comparing the cost to repair the bridge with the economic impact of the snowmobile and ATV industries:

1. The figure of \$15 million was an estimation in 2008 dollars. It would require further review of the structure in its current condition to determine final, present day repair costs.
2. These repair costs were to restore the bridge to its previous capacity as a vehicular bridge. The suggested use for the bridge should it be repaired is for light use by pedestrians, cyclists, ATVs and snowmobiles. These costs may be significantly lower.

As the safest river crossing solution; one which could be a year-round solution for all users, restoring the Morrissy Bridge is the preferred approach.

The Miramichi Bridge

The Miramichi Bridge is a provincially owned bridge, part of the Provincial Highway Route 8. It is in good condition and has an existing sidewalk which could accommodate snowmobile traffic. The City of Miramichi paid for an engineering study performed by CBCL in 2020. The solution presented is viable for the snowmobiles.

The challenge posed is with regards to pedestrians. 38% of those poled cross the Miramichi Bridge by foot and identify their primary purpose as recreation. There is no safe way for pedestrians and snowmobile users to share the bridge crossing. If snowmobiles are to use the Miramichi bridge to cross the river, it must be closed to pedestrian traffic from December 15 to April 15.

The reality is that 66% of those using the sidewalk on the Miramichi Bridge are doing so for the purpose of recreation. Recreational users simply need a route that serves the function of recreation/ exercise; there is no specific destination. The bridge would remain open to users in the non-winter months which is the desirable season for recreational users. The demand for access to the sidewalk during the winter months would be very minimal and those users would be equally satisfied with another destination which offered

similar recreational opportunities. There is very minimal inconvenience to pedestrians in the winter months, should the bridge be closed to their access, while the potential to the local and provincial tourism economy is significant. This is the most viable option for snowmobilers to cross the Miramichi river in order to take the provincial Snowmobile Tourism to the next level.

As the bridge and Highway 8 are provincially owned and managed highways, the city needs to work the provincial Department of Transportation (DOT) in formalizing the traffic regulations. It will be the province's responsibility to develop any required modifications to the infrastructure. In order to implement this project would require cooperation between the City of Miramichi, DOT and the NBFSC.

It is recommended that the province review the previous solution engineered by CBCL for the Miramichi Bridge access. The project would close the gap in the provincial snowmobile route and open up the province to long distance snowmobilers coming from Quebec and further. It would be a major boost to not only the municipality but, more so to the greater provincial economy; affecting all communities large and small who cater to the snowmobile industry. The change in the demographic of the snowmobile tourist could provide countless opportunities for other communities to tap into.

ACTION 3: WAYFINDING

Signage is used to assist users in identifying and planning their route, for safety, ensuring proper etiquette and to inform.

The city recently updated their signage. Directional signage, Trail head signs, Interpretive Signs and any other newly generated signage should follow the new city standard.

ATV and Snowmobile Trails

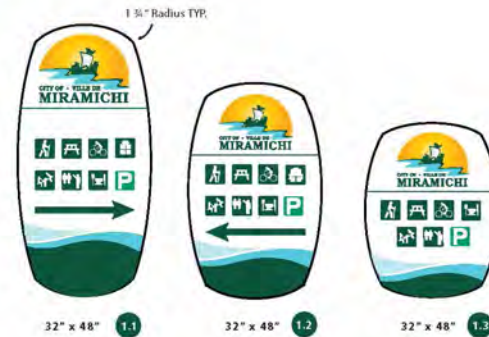
All signage on ATV and Snowmobile trails is to follow provincial signage standards as established by the New Brunswick Snowmobile Federation and QuadNB.



Additional signage recommendations specific to Joint-Use trails (Human Powered-ATV and Human Powered- Snowmobile) can be found in Chapter 4 under the section on Joint-Use Trails.

- Locator plan
- Signage types

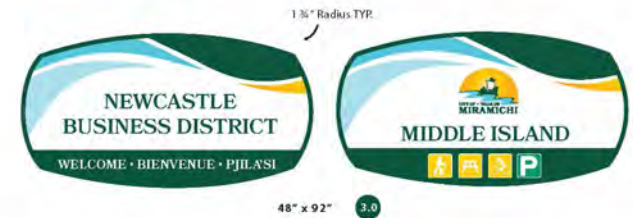
01 Site Directional Sign



02 Assurance Sign



03 Site Identification Sign



04 Civic Directional Sign



05 Large Site Sign



Water Trail Signage

Water Trail Kiosk

Launch sites can vary from very busy marinas to small roadside beaches. A Water Trail Kiosk is recommended at primary sites and where warranted at secondary sites to provide orientation.

- Water Trail Kiosks should include: an overall map of the trail, “you are here” marker,
- All other launch sites, name of river, key features. The sign may also include: specific cautions, safety tips and use regulations
- Kiosks serve as supplemental information to printed or digital paddling guides. The information should help paddlers manage expectations for distance, launch sites and facilities
- Kiosks can also be used to promote stewardship of the resource and to invite participation or Membership



Safety Signs

When the launch site is more than 3m from the parking area a separate staging area is needed to sort gear and put on flotation devices (PFD). This is the preferred location to deliver messages focused on user safety.

- Standard safety signs should be installed at all launch sites in areas closest to the location for putting on safety gear. The sign message contains general safety tips and rules.
- Safety signs need to be simple and concise to be effective. Additional risks and disclaimers can be located on kiosk signs and printed maps
- Safety signs should also be posted at all Power Boat launch sites and marinas which do not already have a Water Trail sign. These signs should educate power boat operators about safe boating practices around PWC, identify the PWC safety zone and locate PWC launch sites



Maps

Mapping is a critical activity both in Blueways planning and in communicating to the end users. Maps should be available on websites, as printable online maps, as mobile App, as printed large scale maps, on kiosks at launch sites and in tourism publications. The following information should be conveyed on Water Trail Maps:

- Title, Legend, Bar Scale in kms, North Arrow, appropriate Roads
- Primary Launch sites
- Secondary Launch site
- Name of Launch sites
- Water Trail routes with distance between launch sites
- Location of PWC safe zone
- Checklist
- Safety tips
- Regulations
- Ethical code
- Communication - Calling for Help
- Additional information might include blurbs on points of interest

CHAPTER 5 - DESIGN CONSIDERATIONS

TRAIL TYPOLOGIES

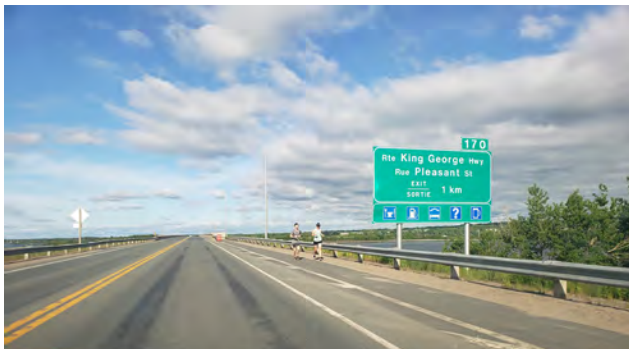
The following Trail Typologies outline the standards which should be followed for each trail type.

On-Road Facilities

Bicycle Accessible Shoulder

A bicycle accessible shoulder is a paved shoulder that is separated from the travel lanes by a painted white line. Although shoulders are not primarily designed for cyclists they may be considered bicycle accessible if they provide sufficient operating space, pavement marking separation from adjacent travel lanes, and a smooth surface clear of snow and debris. Roadways with speeds greater than 100 km/h should not be considered bicycle accessible. When provided, bicycle accessible shoulders must be paved and located on both sides of the road to facilitate cyclists riding with the flow of traffic. Bicycle accessible shoulders,

Bicycle Accessible Shoulders Can Be Shared With Pedestrians



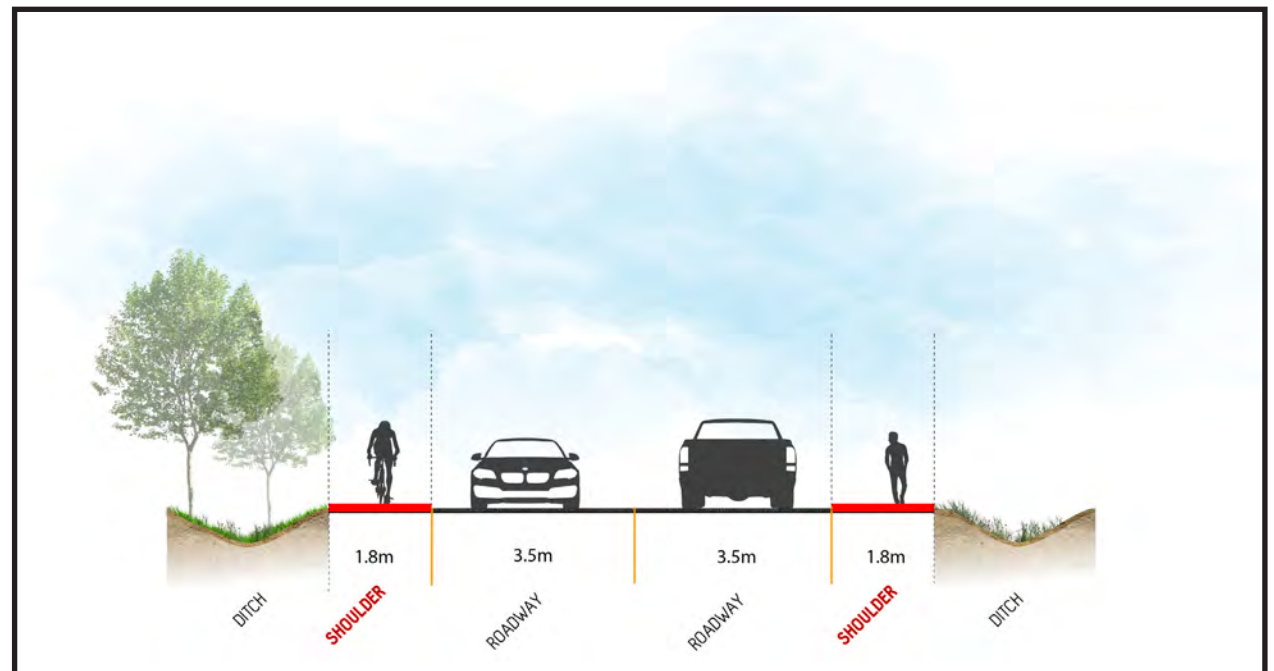
particularly in rural areas, may also be shared with pedestrians.

General Principles

- Bicycle accessible shoulders should be implemented on all primary road connectivity routes within the network.
- Bicycle accessible shoulders should be constructed at the same time as regular road maintenance or right-of-way improvements.
- Bicycle accessible shoulders should be considered a desirable asset to the standard road cross section.

Guidelines

- Bicycle accessible shoulders should be a minimum of 1.8 m wide, and a maximum of 3.0 m wide.
- No parking signage should be considered, to discourage motorists from parking on the shoulder.
- Shoulder should have no more than a 3% cross slope.



Bike Lane

A bike lane is an on-road facility designed for the exclusive use of cyclists. Bike lanes are typically an urban road feature, located on the right (outside) of traffic lanes. A bike lane is unidirectional; contra-flow bike lanes should have some physical separation from vehicular traffic. A bike lane is separated from the traffic lane by pavement markings, and often includes road signage.

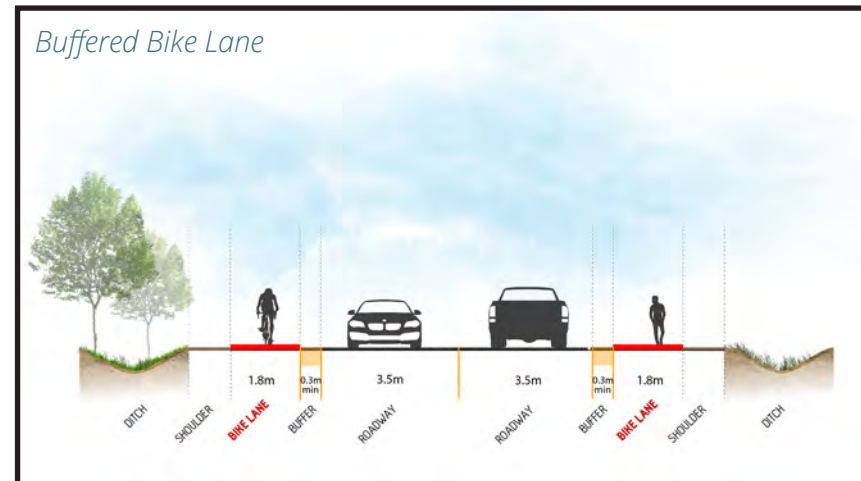
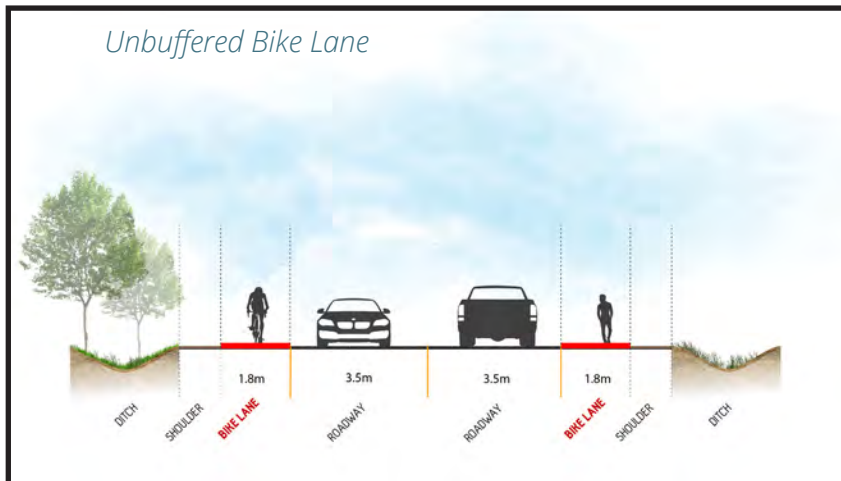
General Principles

- Bike lanes should be generally accepted as the preferred on-road cycling facility.
- Whenever space allows, bike lanes should be implemented on primary connectivity routes.
- Bike lanes are not considered a multi-use facility.

Guidelines

- The recommended minimum width of a bike lane is 1.8 m wide and the recommended maximum width is 2.1 m wide. An absolute minimum width of 1.5 m can be considered in constrained areas over short distances (e.g. less than 100 m).
- Bike lanes can be buffered or unbuffered. Unbuffered bike lanes are separated from the travel lane by a 150 - 200 mm painted line.
- Where space allows, a painted buffer can be provided between the bike lane and travel lane. The buffer should have a minimum width of 0.3 m and a maximum width of 0.9 m. However, when a bike lane is provided next to motor vehicle parking, the minimum buffer width should be increased to 0.6 m.

- Bike lane, and share the road signage should be installed.
- On roads without street parking, the bike lane should be the outermost (right-hand) lane.
- Where on-street parking is provided, the bike lanes may be installed between the travel lane and the parking lane or they may be installed in the outermost lane, with the parking lane acting as a buffer between the travel lane and the bike lane.
- To facilitate the installation of bike lanes on existing street cross sections, travel lanes could be reduced according to TAC standards for minimum road widths.



Local Street Bikeways (Bicycle Boulevards)

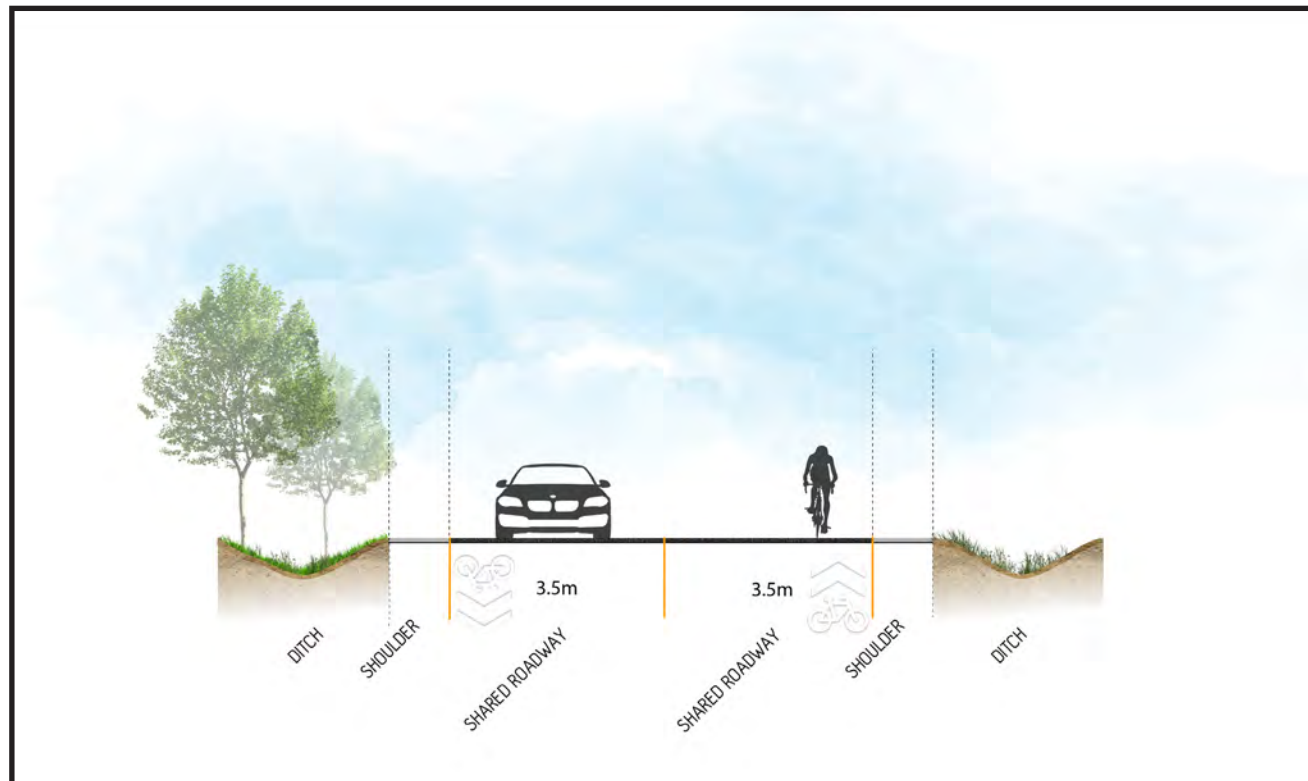
A local street bikeway or bicycle boulevard is a bike route located on a local (often residential) street. These are typically provided on streets where motor vehicle traffic volumes and speeds are low. This allows cyclists to share the road comfortably with motor vehicle traffic without requiring designated bicycle lanes.

General Principles

- Local street bikeways or bicycle boulevards often feature traffic calming measures which help to reduce travel speeds and/or traffic diversion measures which help to reduce traffic volumes.
- Local Street Bikeways should only be considered on low-volume and low-speed roads, ideally with travel speeds of 30 km/h or less.

Guidelines

- Bicycle boulevard or Local Street Bikeway signage should be posted along the route.
- Shared lane use markings (“sharrows”) should be used to indicate that motorists should expect to share the road with cyclists.



Off-Road Facility Typologies

Urban Sidewalk (Concrete)

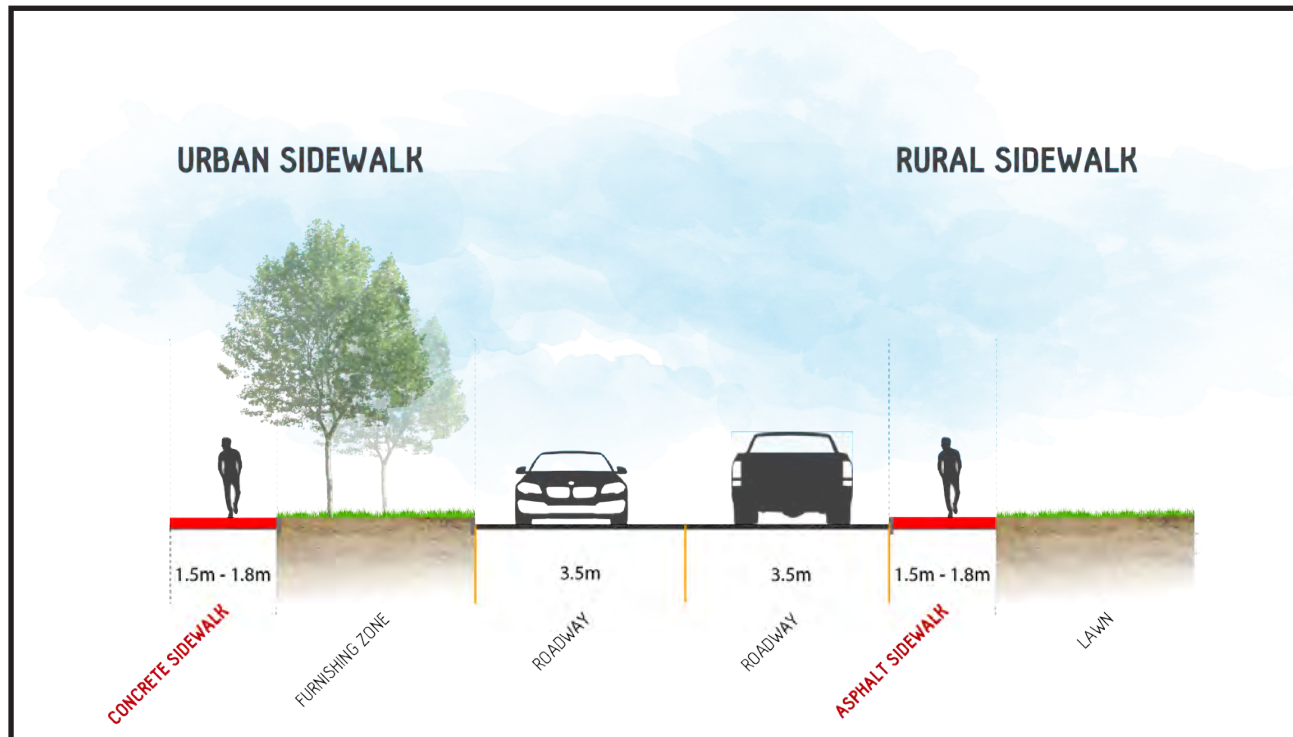
An urban sidewalk is typically constructed of concrete. It is recommended that the sidewalk be separated from the travel lanes by a “furnishing zone” when possible. This provides space for signs, poles, trees, landscaped boulevards, and snow storage. However, in constrained areas the sidewalk may be located directly adjacent to the travel lanes.

General Principles

- Sidewalk is primarily a pedestrian amenity.
- In unique situations, sidewalk may be designated as multi-use trail by the traffic authority, thereby permitting cyclists to ride on it.

Guidelines

- Urban sidewalk should have a minimum width of 1.8 m, with an absolute minimum width of 1.5 m permitted in constrained areas.
- Where space permits, sidewalk should border a (minimum) 1.5m wide boulevard / amenity strip.
- When a furnishing zone is provided between the sidewalk and travel lanes the furnishing zone should have a minimum width of 0.5 m. If grass is to be planted in the furnishing zone a minimum width of 1.0 m is recommended.



Rural Sidewalk (Asphalt)

A rural sidewalk is the asphalt alternative to conventional concrete sidewalk. Often constructed in rural areas, the asphalt sidewalk may or may not have a curb, and may or may not be separated from the travel lanes by a furnishing zone, depending on the right-of-way width and clearance. In circumstances where the sidewalk is adjacent to a curb, it should be constructed out of concrete to support the asphalt edge.

General Principles

- Sidewalk is primarily a pedestrian amenity.
- I would also consider removing this point. It is preferable to provide a multi-use trail in this situation.

Guidelines

- Rural sidewalk should have recommended a minimum width of 1.8 m, with an absolute minimum width of 1.5 m permitted in constrained areas.
- Where space permits, sidewalk should border a (minimum) 1.5m wide boulevard / amenity strip.
- In areas of sidewalk to be designated as multi-use trail, the sidewalk should be a minimum of 3.0m wide.

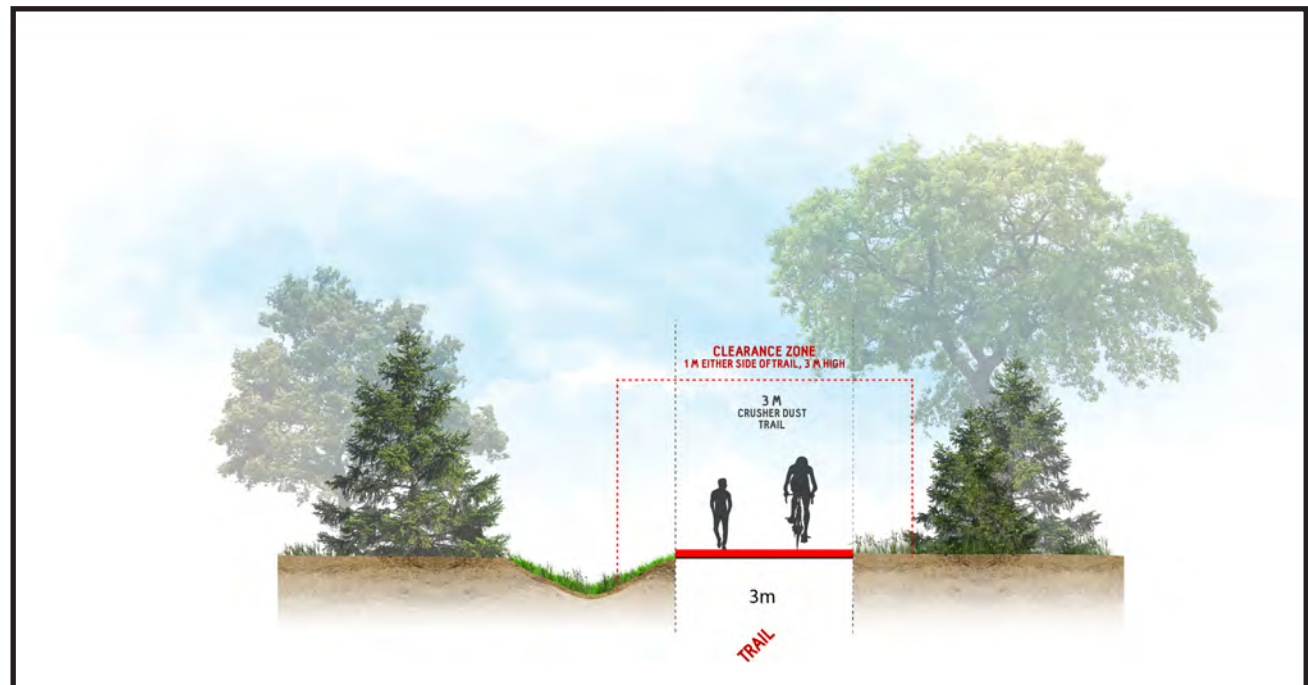
- In areas where the sidewalk is adjacent to a curb or roadway, a concrete curb should be installed. Crusher Dust Multi-Use Trail (Non-motorized)

General Principles

- A multi-use trail must meet the needs of a variety of users.

Guidelines

- Multi-use trail should be a minimum of 3.0m wide made of high quality, crushed stone, tamped down and compacted over a granular base, to suit local soil conditions.
- An additional 1.0m of clearance on either side of the path is required, with 3.0m vertical clearance.
- Adequate drainage is required, to reduce ponding and erosion.



Paved Multi-use Trail (Non-motorized)

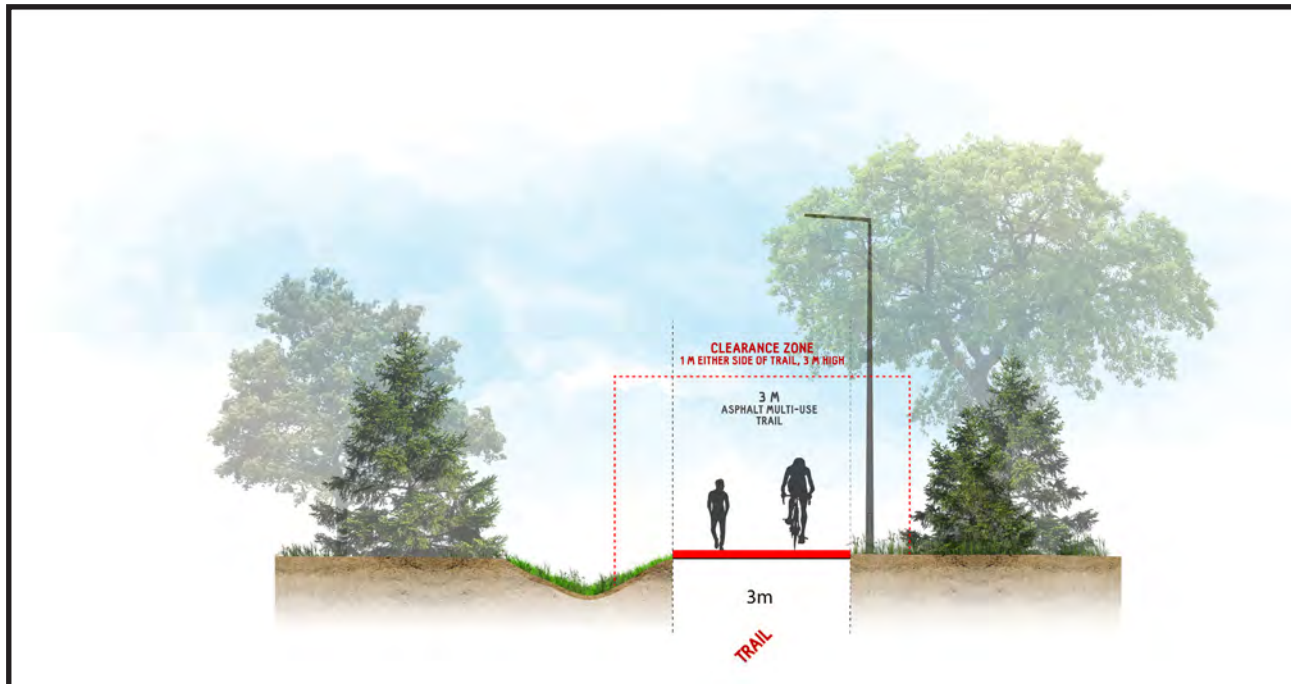
Multi-use trails are situated completely off-road, and have minimal interactions with vehicles at designated crossing points. Multi-use trails are designed to accommodate a number of uses, including cycling, walking, running, and optionally in-line skating, skiing, ATV use, or equestrian.

General Principles

- A multi-use trail must meet the needs of a variety of users.

Guidelines

- A paved multi-use trail should be a minimum of 3.0m wide made of high quality, light duty asphalt, typically 50-75mm thick.
- An additional 1.0m of clearance on either side of the path is required, with 3.0m vertical clearance.
- Adequate drainage is required, to reduce ponding and erosion.



ATV Trail

Off Highway Vehicles require different design considerations than other non-motorized forms of travel, due to the speed at which they travel. OHV trails can overlap with traditional multi-use trails, given that a number of safety parameters are met. An ATV trail is intended to accommodate motorized ATV's including:

- Motorized vehicles with a track width less than 1.27 m (i.e. ATV),
- Motorized vehicles with a track width between 1.27 m and 1.65 m (i.e. side by side ATV) Due to their often remote locations, ATV trails are typically composed of gravel or dirt

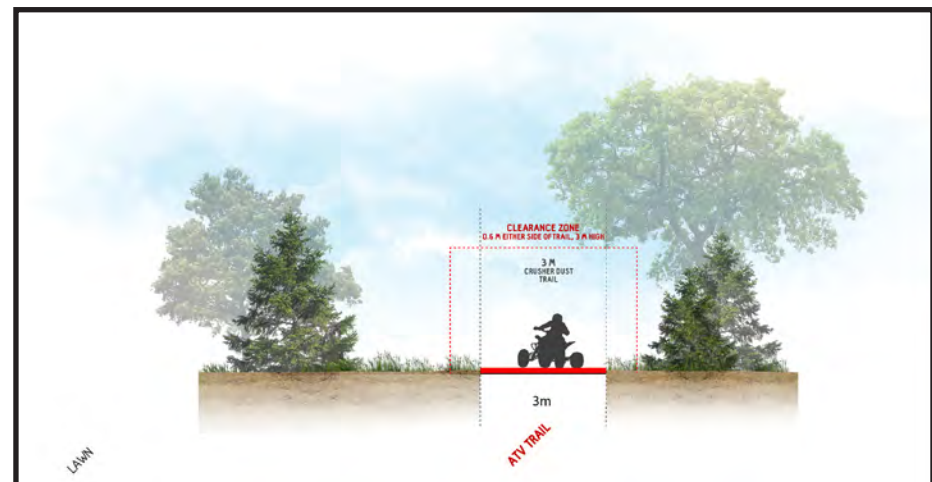


General Principles

- Rules and guidelines adopted by New Brunswick All Terrain Vehicle Federation (NBATVF) should be respected at all times
- OHV trails should have posted speed limits. Limits should be set based on the difficulty of trail, and the frequency of interactions with non-motorized users.
- Winter trails should be groomed to promote safe and responsible riding. For winter usage, there should be a minimum of 0.2m of snow coverage, to protect the trail surface.
- Due to the general maximum speed for snowmobiles (70-90km/h), the minimum sight distance is 125m. In areas where this cannot be maintained, signage is required to warn trail users.

Guidelines

- An ATV trail should have a minimum tread width and a vertical clearance of at least 3.0 m.
- A shoulder width of 0.6 m should be provided on both sides of the trail where possible.
- An ATV trail should be built with a design speed of 30 - 40 km/h.
- A 3.0 % cross slope is desirable, with a maximum cross-slope of 5.0%. Should have a sustained vertical grade no greater than 12.0%



Snowmobile Trails

Snowmobiles require different design considerations than other ATV's, due to the speed at which they travel.

General Principles

- Guidelines established by NBFSC should be respected at all times
- Snowmobile trails should be groomed to promote safe and responsible riding. For winter usage, there should be a minimum of 0.2m of snow coverage, to protect the trail surface.
- Due to the general maximum speed for snowmobiles (70-90km/h), the minimum sight distance is 125m. In areas where this cannot be maintained, signage is required to warn trail users. Stop ahead warning signs should be placed 125 m ahead of all stop signs regardless of available sight distance.

Guidelines

- Single machine trail permits two machines to pass at reduced speeds. The minimum width should be 3.0m for unidirectional travel.
- Double machine trails permit comfortable passing. The minimum width should be 4.0m wide for bidirectional travel.
- Minimum vertical clearance of the trail is 3.0m. Side cutting of the trail may be required to facilitate necessary sight lines for turning radii. There should be a minimum of a 1.0m clear zone along both sides of the trail.
- A 2.0 % cross slope is desirable, with a maximum cross-slope of 5.0%.
- Trails should have a sustained vertical grade no greater than 8.0%
- Signage should be provided along the trail in accordance with the NB Snowmobile federation's signage guidelines.





Joint-Use Trails

Joint-Use Trails can accommodate both summer or winter uses including motorized and non-motorized users. This can cause compatibility and safety issues when higher-speed motorized users occupy the same space as lower-speed non-motorized users.

Providing additional trail width and longer sight distances can help reduce these risks.

It is recommended that some form of separation be provided when possible to help separate motorized and non-motorized users along mixed-use trails.

Water-Based Facilities

Personal Watercraft Boat Launches

Launch Design

Launches need to serve a diverse range of paddlers, equipment and physical abilities. The actual “launch” is comprised of several components: the push-in, transition zone, horizontal alignment and water level or bankfill.

- The Push-In is the release or bottom section of the launch. It can be made of sand and gravel or concrete. It needs to have a nonslip finish with a minimum width of 3.6m at the

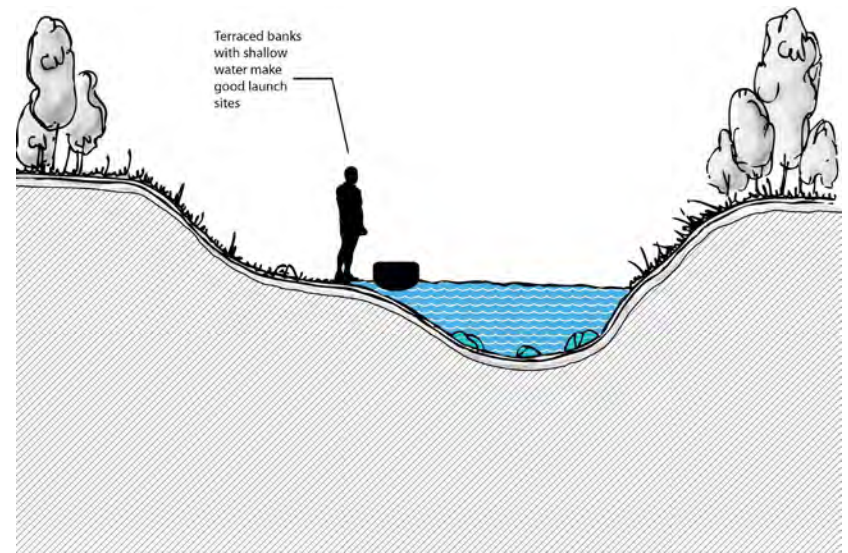
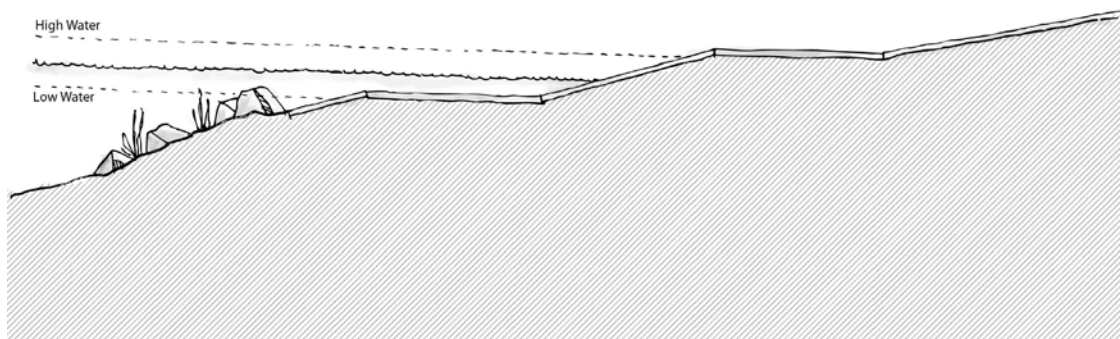
waterline and 6.0m if also used as a rafting launch. Preferred slopes for accessibility are maximum 1 in 12m or 8.3% and should never exceed 2 in 6.5m or 15%. The water level at push-in should be 0.6m to launch without damaging the boat or 1.2m for kayakers to roll their craft.

- Transition Zone happens between the land or dry section and the wet or submerged section of the launch. The slope during transition should range from 1 in 12m (8.3% to 1 in 6.5m (15%) and no steeper than 1 in 5.5m (18%).
- Horizontal Alignment is the placement of the launch compared to the shoreline. For most applications on moving water like streams and rivers

a 30-45 degree downstream angle from the flow is best. On larger bodies of water the alignment should relate to prevailing currents to achieve perpendicular access.

Water level or bankfill is the elevation along the bank where vegetation begins to grow. Any armour stone or concrete placed to protect the launch should not extend up beyond this elevation. The simplest and most economical launches are those that require minimal or zero construction. Naturally occurring features like sandy or gravel riverbanks or rock outcrops can make excellent launch sites. Flat rocks can provide a firm surface, jagged rock should be avoided. Gravel can be added to form ramps in areas that are not susceptible to wave action.

Push-In	Transfer Area	Ramp	Landing	Ramp
0.6m	2m, 2% slope	max 8-10% slope	2-3% slope	max 8-10% slope



Construction near water course should be undertaken during periods of low water and in compliance with applicable environmental regulations. Existing built features like docks, boardwalks or stable banks near bridges also make logical launch sites.

Types of Launches

Natural

The preferred launch construction material is natural soil - clay, silt, sand, loam. Natural materials are the simplest and most cost-effective. The soft but durable river bottom provides a cushion for the boat and makes for stable launches. Rounded river cobbles and even natural bedrock outcrops can serve as good launch materials. Jagged or painted rocks are not recommended as they can cause damage to boats or injury to paddlers.

- Minimum 3.6m wide at the water and tapered to 2.75m wide at the top
- Length will be determined by shoreline slope and water levels, 5m minimum
- Water level minimum 60cm deep
- Visually pleasing as they blend into the natural surroundings

Floating

Floating launches are structures such as docks or air-filled floating modules that provide access while floating above the water. The float is anchored in place, usually for seasonal use, and permits launches at fluctuating water levels.

- Unless specifically designed to endure ice formation and movement, they should be taken out before freeze up
- Water level should be 90cm
- May not be suitable in areas with floating debris, fast currents or tidal waters
- Transition decks may be required to connect floating dock to a fixed anchor point on shore
- Consider use of low handrails for increased stability at launch point on the float, 37mm dia pipe at 3m long, 30cm high

Wharves

A wharf is a fixed structure built to allow mooring boats along its side. Wharves can be used for launching if they have a floating ramp or railings to steady yourself.

Ramps

Boat ramps are often used as launch sites. Typically the ramps are formed from poured-in-place concrete or pre-cast concrete interlocking slats. Ramp slopes should not exceed 8% (1 in 12), the push-in area may be steeper. Concrete ramps set to match existing grades make it easy to remove any sediments and can better withstand eroding currents.

Concrete ramps can be highly visible from the water making launch sites easier to locate.

UNIVERSAL DESIGN/ACCESSIBILITY

Universal Design is a foundational aspect of Active Transportation planning. It ensures all parts of the transportation network are accessible to people of all ages, mobility and cognitive levels. It is an inclusive approach to design that considers every user. The following section outlines a number of universal design principles which should be applied to the design and construction of the AT Routes.

Accessibility Challenges include:

- Mobility
- Vision
- Hearing
- Comprehension
- Strength
- Dexterity

Universal Design in Active Transportation

Universal Design considerations outlined by TAC and CSA should be reviewed and applied where necessary. While designs should always strive for the highest level of accessibility, this is not always attainable. There are 3 levels of accessibility:

Basic Access Requirements - meets safety and liability standards

Inclusive Access Requirements - addresses important accessibility challenges. Aims to improve accessibility for all spectrums of disability.

Full Access Strategy - a best practices approach to accessible design with attention to specific project needs.

Universal design should consider all forms of restrictive participation. For example children are limited because they are smaller, move slower and have developing cognition.

Mobility Considerations

- Hand rails
- Drop curbs
- Frequent rest stops with seating
- Accessible slopes and grades
- Ramps instead of or as well as stairs

Vision Considerations

Limited vision means difficulty identifying objects for safety and navigation such as signs and signals. They also impact one's depth perception and judgement of speed of objects. Persons with vision impairments rely on touch, auditory cues and visual contrast to navigate. Tactile indicators act as warnings of danger or change in travel conditions.

Tactile indicators should be located in the following locations:

- Base of curb ramp
- Edge of depressed corners
- Border of medians
- Border of raised crosswalks and intersections
- Edge of transportation platforms
- Rail crossings

Score lines are also commonly used in similar conditions. Audible pedestrian signals are another effective tool for assisting the visually impaired navigate transportation networks.

Hearing Considerations

Hearing impairments make it more difficult for individuals to interact with others and detect other road and trail users.

Strength and Dexterity

Examples of design solutions that are challenging for people with strength and dexterity issues include pedestrian signals with pressure resistance or non-graspable handrails.

Comprehension Considerations

Individuals with comprehension difficulties may be unable to read signs. Directions and notifications should be intuitive and easy to interpret.

SITE-SPECIFIC SAFETY SOLUTIONS

In addition to typical design standards, there are often individual locations that require site-specific solutions. The following section outlines solutions for a number of individual transportation safety concerns in the city.

King St./ Highway 11 Crossing

Students from James M. Hill Memorial High School have created a habit of crossing Highway 11 to access the gas stations and fast food outlets at Highway 11/ King St. Students take a short cut to their destination by crossing the highway at the end of Henderson St. and then walking along the

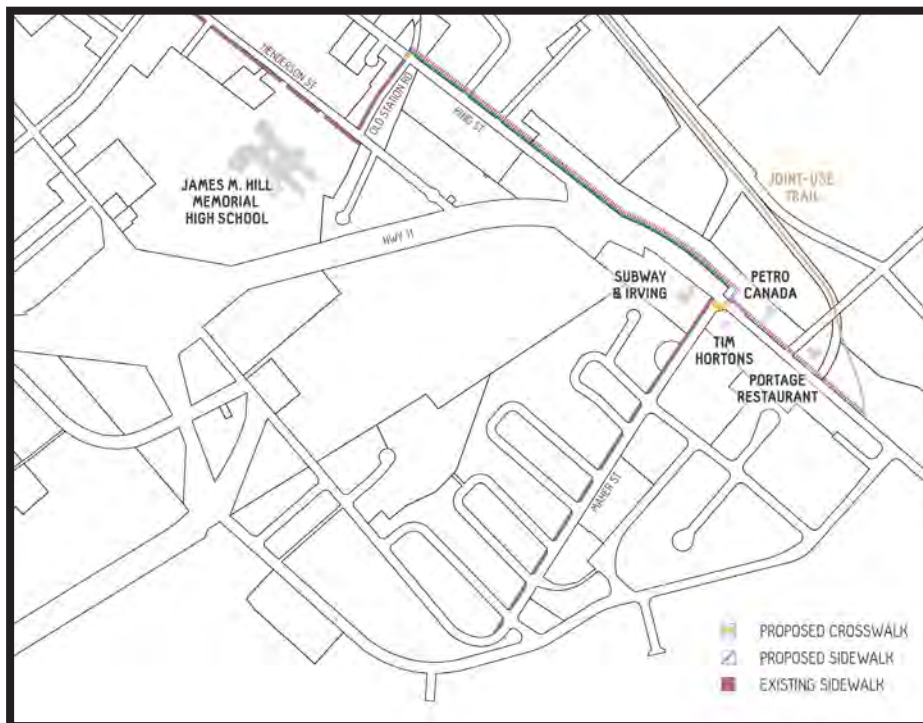
highway shoulder. This is an unsafe habit which could result in a tragic accident. The city would like to eliminate this behaviour. In order to do so, an alternative must be offered which is convenient and will therefore encourage compliance among the students.

Since crossings cannot happen at collector lanes or highway exits, it is recommended the crossing happens before and after the intersection of King St./ Highway 11. A crosswalk at Old Station Rd/ King St will get students across the road in order to be able to access the highway commercial zone without interacting with vehicles at

the highway intersection. A second set of crosswalks will be located at Maher St, once the traffic pattern has returned to a two-lane road. It allows students to get from the school to their destination without interacting with the highway travelers. It also provides a route for employees at the businesses on the north side of the road to access the same fast food outlets .

It will be important for the school to take responsibility for encouraging and enforcing the proper route as well.

An added benefit of these new sidewalks is that they provide a safe crossing for residents of Retirement Miramichi to connect to the Joint-Use Trail. This will allow them a more extensive trail network for recreation and a route into Downtown Chatham.



Intersection of Highway 11/Maher St.



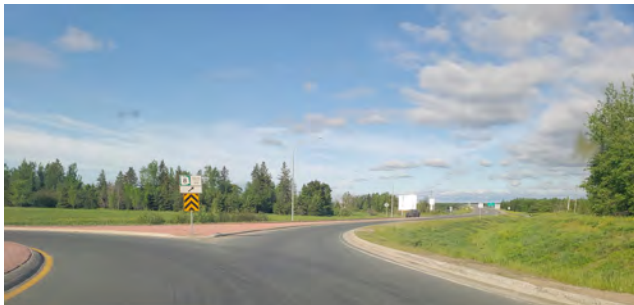
Highway 8/ Water St. Roundabout

The roundabout at highway 8/ Water St. has annexed Nelson from Chatham Head and the rest of the city. Residents want safe access to services across the highway. Because Highway 8 is a provincial road, plans for a crossing must be presented to and approved by DTI.

Because of the speed of travel, the highway crossing would have to be located at the roundabout. This would serve as the crossing for both Water St. and the walking trail which would double back from the water to reach the crossing. RRFB lighting would need to be installed as well. However, it runs on solar power, so would be relatively cost- effective.

With the consideration of the Nelson Mill site for a marina and park, this connection becomes increasingly important not only for residents of Nelson, but also as an extension of the trail network from other areas of the city as well.

Side of Highway 8 - Proposed Trail/Accessible Shoulder Location



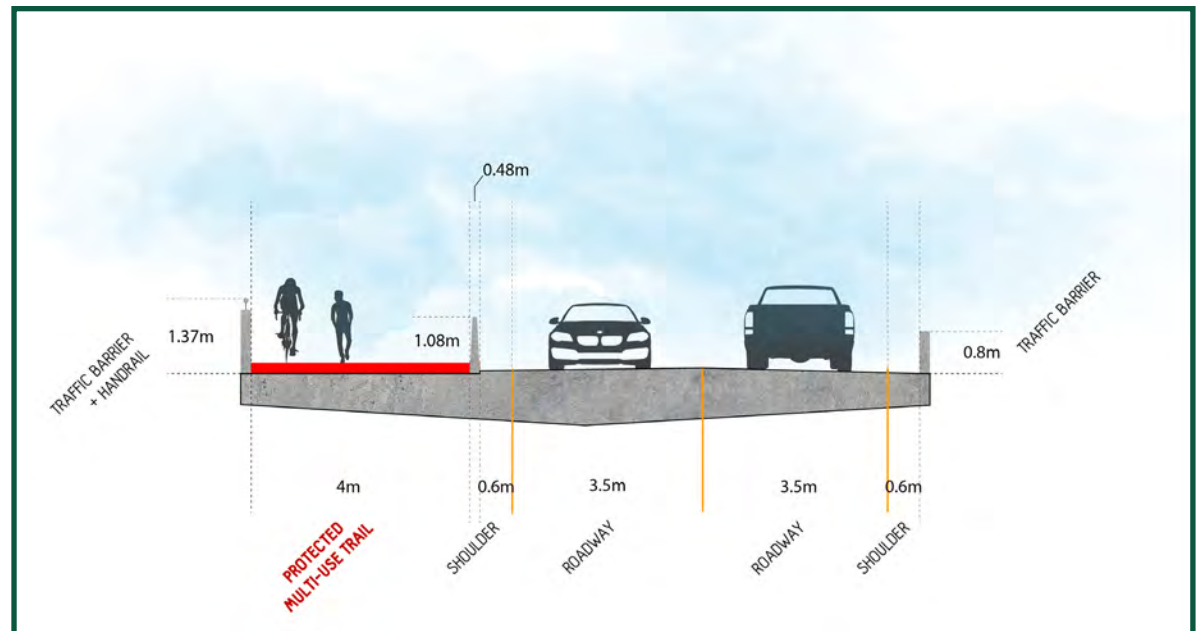
Centennial Bridge Access

At the time of this report, the pedestrian crossing solution for the new Centennial Bridge was not determined. As identified in the survey, roughly 20% of the population cross the Centennial Bridge, mostly to commute to work or to get essential goods such as groceries. Most of those who rely on the Centennial Bridge are the percentage of the population who do not have access to alternate means of transportation. For those working at many of the businesses in Douglastown, the bus stops running before their shift ends. To take a taxi often means they are working to pay for their ride.

Access to cross the Centennial Bridge is critical.

The ideal pedestrian/ cyclist solution would be a protected multi-use trail on the south side of the bridge.

A 4 m wide protected multi-use trail would effectively allow for two way crossing on one side of the bridge, accommodating both pedestrians and cyclists.



Multi-Use Trail Highway Crossings

There are a few locations where the multi-use trail (pedestrians, cyclists, ATVs) crosses a designated highway, namely along Wellington St. (Route 117) at St. Andrews St., just south of Lebreton Dr. and at the private road north of Dorothy Ln.

As a two lane highway, especially in the more rural section, drivers are not anticipating pedestrians or other recreational user intersections. Therefore the motorist has the right of way, and the trail users will be required to stop at the crossing and wait for a safe opportunity to cross. Appropriate signage should be posted on the trail to warn trail users of the approaching intersection and to stop and wait for a break in vehicular traffic before crossing.

Illumination of the trail highway crossing should be considered as non motorists will not be anticipated by drivers.



CHAPTER 6 - IMPLEMENTATION

IMPLEMENTATION PLAN

This report builds on the long term vision for active transportation in Miramichi that was developed in the 2010 Active Transportation Plan. It represents a response to the goals of the city and the needs of residents as expressed in the consultation phase of the process. It responds to the unique and specific challenges faced by the community today. This report is intended to be an action-oriented document.

The AT Plan was prepared to optimize existing conditions.

The Waterfront Loop Trail was developed by connecting existing transportation routes around the river. Linking existing destination trails to the Spine, allows users to commute to their destination rather than requiring them to drive to their desired trail. Educational institutions, recreation complexes and greenspaces are linked to the system. Linking existing infrastructure and maintaining pre-existing routes, help minimize costs and maximize impact.

Because Miramichi is an amalgamation of cities and communities, development guidelines have varied in the numerous communities over the years and there is limited availability of space. Additionally, the city is challenged to maintain its existing trails and recreation infrastructure. Cost effective solutions are solutions that will be developed. One primary example of this is the decision to recommend mixed use accessible shoulders instead of bike lanes on major routes such as the Waterfront Loop.

PHASING

This report describes both a long-term 20-year vision and achievable short to medium term 10-year plan for Active Transportation in Miramichi. The plans and proposals are consistent with the objectives described in both the public consultation component of this project, and many previous studies and reports.

Initiatives with a high profile and ease of implementation should be given the highest priority, especially where cost is not prohibitive. Larger and more complex projects will require time and further study to work out all the details required for implementation.

Setting priorities for implementation should be based on the following criteria:

- Immediate economic impact;
- Best probable funding opportunity;
- Timeline for possible environmental, infrastructure, and land acquisition issues;
- Potential for greatest positive impact;
- Ability to link to other open spaces and sites;
- Status of land ownership or construction readiness;
- Opportunity for partnerships with the private sector;

- Coordination with other on-going municipal projects;
- Logical design and construction sequence.

Phase I: Establishing the Spine

The top priority for the AT Plan should be to establish the Spine- the Waterfront Loop Trail. The primary focus should be the accessible shoulders along King George Highway and Water St.

The Planned Sidewalks identified by the Department of Engineering should also be implemented early in the process as the connectivity of the plan assumes these routes are being developed.

Phase I should also include formalization of the groomed winter trails at French Fort Cove. This requires no infrastructure development and will establish a winter AT product.

A long-term agreement should be formalized with the ATV club for permanent seasonal access to the multi-use trail to Loggieville. This will connect their network and does not require infrastructure development.

Another low cost, easy to implement development would be to install the waterway signage at all existing boat launches.

The crosswalk network at King St./ Highway 11 should be considered immediately as it is a safety issue.

The Roundabout crossing at Highway 8/ Water St. will continue to annex Nelson from the AT Network. The city should aim to have this implemented early in the process, despite the fact that detailed planning and DTI approval are required. It is imperative that all neighbourhoods of the city be included and connected through the AT network.

Phase II: Connecting the Network and Enhancing Services

There are minimal secondary trails which connect the existing trails to the spine. These should be addressed once the spine is complete. (Alexis St. only needs to be addressed if and when the Multiplex site is developed).

First/Last Mile Bike racks should be implemented as part of closing the connections.

A serious exploration of the potential relationship with the MCCSC should be explored as there is a lot of potential recreational value to developing this site for all residents of the city.

Once the Water Trail has gained traction through signage and promotion, additional facilities should be considered such as installing kayak lockers and at least one accessible kayak dock facility. Development of the Fraser St PWC launch and upgrades to the Strawberry Marsh site could happen at this time as well.

Long Term Goals

Paving of the Multi- Use Trail to Loggieville is a costly initiative. Because the trail already exists and is accessible, paving is more of an enhancement than a necessity. The trail can be paved in phases as identified in Appendix IV, with the first section being the stretch from Water St. to the Portage Restaurant.

The river crossing solution for snowmobiles has significant economic implications to both the city and the province. This discussion should continue, but it is realized that it may take a number of years to reach an agreement with all parties.

COSTS

As the projects will be implemented over time and each project may be broken down into smaller phases, the best way to cost the projects is unit price costing. The following costs can be used as a current guideline for budgeting purposes. The tables in Appendix IV outline estimates of individual projects.

Trail Type	Cost/km
3 m wide crusher dust Trail	\$17,000
3 m wide Paved Trail	\$70,000
1.8 m wide Paved Shoulder (Paving existing gravel shoulder)	\$120,000 (\$50,000)
2- Lane Road (RLU 80)	\$1,100,000
Concrete Sidewalk	\$240/lm
Asphalt Sidewalk	\$120/lm
Concrete Curb	\$100/lm

Depending on when each project is tackled, an appropriate factor for inflation will need to be added to the cost of any project.

Some projects will require further studies of traffic counts or ground truthing to identify anomalies which may need to be addressed on a case-by-case basis. These costs are preliminary estimates only.

The following considerations should be made for each project:

Waterfront Loop Trail

- Detailed engineering studies will be required to identify where space restrictions exist
- Deviations from typical trail typologies may be required. Estimate assumes standard typologies. Any deviation from the typical would be an additional cost which cannot be estimated at this time
- Additional costs may include infill of ditches, installation of culverts, relocation of guard rails or utility poles
- The budget for this portion should be considered a minimum. Further costs, based on a detailed engineering study should be expected

Water Trail

- Many existing sites require signage only
- There is opportunity to expand offerings at a number of sites over time such as the addition of more docks or accessible PWC docks
- Miramichi Boating and Yacht Club, as a private facility may wish to add additional services. However, as a minimum the city should pay to install trail signage at the marina
- The future Downtown Newcastle Docks and Nelson Marina require concept development in order to develop budgets.
- No Wake buoys could be added or removed as the PWC activity evolves.

Highway 8/ Water St. Roundabout Crosswalk

- This site will require detailed engineering
- Will require approval by DTI

Centennial Bridge Approaches

- This estimate is for the bridge approaches only. Bridge design is by DTI
- This design is based on the assumption that a buffered multi-use trail will be located on the south side of the bridge. At the time of this report the final pedestrian solution for this bridge was unresolved

Highway 11/ King St. Crossing

- Will require engineering
- Will require approval by DTI

MAINTENANCE

With maintenance, it is critical when planning for new infrastructure to include maintenance requirements manual operational budgets. Maintenance of any infrastructure is costly and has a lifespan. Typically, roads are resurfaced every 12-15 years for collector and arterial, 25-30 years for local; sidewalks 20 years and curbs every 25-30 years, asphalt sidewalks 30 years. Off road facilities such as multi-use trails require resurfacing every 10-15 years for asphalt and 5-7 years for topping up crusher dust. Maintenance requirements and programs should be established for all facilities during the design phase.

Partnerships

Partnerships can go a long way in assisting with the maintenance demands of trail facilities. This is a big factor in considering these partnerships in order to progress the AT Plan for Miramichi. The local and provincial ATV and snowmobile clubs maintain their own trails. However, if a section of trail was to become joint-use with non-motorized users, the city should consider some value of contribution to these organizations. The city may find it most beneficial to let these clubs continue to manage maintenance of their trails. Conversely, if ATVs are to be

allowed access to municipal trails such as the rail line from Chatham to Loggieville, the maintenance needs are going to increase for the city.

Ultimately, maintenance needs to be factored in to the cost of any new trails. T

In order to truly develop an active transportation network for the city, there needs to be appropriate funds for seasonal, and a few full-time trail staff. The condition of the trails is going to have a big impact on user experience, the attractiveness of the trails to prospective visitors and residents and also to the perceived and actual safety of trail users.

Inspection

All trails should be inspected regularly to identify any needed repairs. It would be beneficial to conduct a full network inspection at in the spring and fall to identify any seasonal damage and to restore trails to their optimal conditions prior to the summer/ winter operational seasons. Throughout the season, regular inspections should be carried out by trail staff during routine maintenance activities. Additionally, an audit should be conducted after a major weather event.

As-Needed Repairs

Maintenance staff should be vigilant of any attention required on trails or their facilities. Repairs should be assessed based on their associated risk or hazard and addressed accordingly. It is a good idea to post a contact number for trail users to report issues to the city.

Regular routine Maintenance

A Trails Team should be assigned to conduct regular ongoing maintenance to ensure safe, attractive trails throughout the city. Regular maintenance includes:

- Selective vegetation pruning and clearing
- Mowing on trail shoulders, where deemed necessary. Appropriate trail mowing should be part of the regular city wide mowing schedule.
- Trail Clearing. Including
 - Litter pick up
 - Leaf blowing
 - Sweeping where required
 - Emptying waste bins

Seasonal Maintenance

Seasonal Maintenance includes such things as:

- Spring cleaning
 - Removal of debris
 - Seasonal repairs as identified
- Snow clearing on designated trails
- Treatment of Icy areas
 - The method of treatment will depend on the location and type of trail. Icing may be acceptable in some areas and alternative methods may be required in others.
- Posting/ Removal of seasonal trail condition signs

Ongoing Repairs and Maintenance

Ongoing repairs and maintenance include servicing that is required over the lifespan of a trail network but which occur on a frequency beyond one year. These may include:

- Line and symbol painting
- Surface and edge repairs

ATV Trail Maintenance Considerations

ATVs cause more wear and tear on trails than any other user. This is less of an issue on designated ATV trails. However, it needs to be taken into consideration on the joint-use trails. For the past two seasons the municipality has piloted a project allowing ATVs on a section of the multi-use trail through England's Hollow. If the trail bed is to become the primary off-road multi-use trail and also be joint use with ATVs, it will incur more significant wear.

It is recommended that the season for ATVs on the trail be limited from April 15 to December 15 to minimize wear and tear.

Because the trail will be joint-use, speed limits will be enforced which will also help diminish the wear on the trail. Sections of trail that are paved will also wear less; however, they will be more difficult to repair as well.

The Ottawa Valley Recreational Trail is a great precedent to emulate. Although at a much larger scale, its principles are sound. *"The Ottawa Valley Recreational Trail Management Plan"* is a worthy reference for trail management, signage and maintenance.

The objective should be to preserve the trail in a usable state for all permitted users. Every effort should be made to

maintain the trail in a state that is safe and creates a positive experience for all trail users while also following environmental stewardship practices. In addition to general trail maintenance, the following should be considered where ATVs are permitted access to the trail.

- Properly signed-
 - Speed limits should be posted at regular intervals along the trail. A speed limit of 30 km/hr is recommended where sharing the trail with non-motorized users.
 - Trail etiquette and safety consideration should be posted at all trail entrances
 - Seasons should be clearly identified to ensure ATVs do not use the trail outside of their designated season as this causes undue damage to the trail network.
- Tread
 - The trail surface should be prepared each spring and fall to anticipate ATV traffic and repair it following the close of the season.
- Rights-of-way
 - All rights-of-way should be determined on a case by case basis and clearly and appropriately marked.

Winter Trail Maintenance Considerations

There are a number of different winter trail scenarios which need to be considered and which require different forms of maintenance.

Walking trails will need to be groomed regularly throughout the winter by city staff.

The sections of trail at the cross country ski club (MCCSC) which may be designated for pedestrians will be groomed by the club, should the city enter into an agreement with the club. Appropriate budget contribution should be considered, but labour and materials most likely do not need to be accounted for. Of course they will also groom snowshoe and cross country ski trails at the facility.

A similar relationship should be struck with the fatbike club to continue to groom the fatbike trails at French Fort Cove. The city may pay for signage but can likely develop an arrangement whereby the club maintains the trails both for fatbikes and potentially a separate pedestrian/ snowshoe trail as well.

As different trail types require different equipment for winter grooming and add to the costs, this would leave only the waterfront trail and one groomer to the responsibility of municipal staff.

Partnerships (Construction + Maintenance)

As identified earlier in this section and other parts of the report, partnerships are strongly encouraged in order to maximize the network and minimize both the financial and labour burden on the city. Miramichi will be able to grow and maintain its active transportation network much quicker by engaging in these partnerships.

Examples of partnerships include the following. However, there is potential to identify new partnerships in the future as well.

ATV Trails

Local and provincial clubs regulate their own members, construct and maintain their trails, are responsible for trail signage, lobbying government and entering into agreements with private land owner. The city should not duplicate or contradict these efforts. On joint-use trail owned by the city, a formal agreement should be met to define which party has responsibility over these elements.

Snowmobile Trails

Similar to ATV trails, local and provincial clubs are responsible for regulation of membership, construction and maintenance of trails, posting, maintaining and removing

signage, lobbying government and negotiating agreements with private land owners. Where the city would like to consider joint-use of snowmobile trails, a formal agreement should be struck with the clubs to divide responsibility. In the case of snowmobile trails, the city must recognize that these trails are snowmobile trails first and that any other users should respect the rules of the provincial snowmobile federation.

Fatbike Trails

The Miramichi Bike Club got permission to groom sections of French Fort Cove last year. The city did not partner on the development of pedestrian trails. However, there is a demand for groomed winter trails for walkers and snowshoers. The reality is that, if the trails are groomed they will be used. This poses problems for fatbikes as pedestrians and dogs create ruts that interfere with the fatbikers. It is recommended that the city formalize an agreement with the club going forward- negotiation cost and labour to maintain and sign trails. It is also recommended that pedestrian/ snowshoe trails be designated to discourage these individuals from using the fatbike trails.



Cross Country Ski Club

There is infinite potential to partner with the MCCSC to develop a year-round recreational destination for resident of Miramichi. The club currently has 24 km of trail including a 4 km lit loop and 6 km of snowshoe trails in addition to their cross country ski trails. They have a biathlon range which draws athletes from across the maritimes. Two clubhouses also offer additional event space and services

for site users. There is potential to develop many more kilometers of trail here. The club is open to expanding its offering to include fatbike trails and paved trails among other opportunities. The club requires support to grow. However, if supported, the facility could offer something for everyone in the city and the responsibility could be divided between the club and the city.

Private Marinas

There is a clear demand for additional boat access to the river, docking space and trailer parking. This plan explores opportunities to expand, but there is potential for existing private marinas (such as the Miramichi Boating and Yacht Club) to cater to this demand as well. With the development of a water-based trail, signage for the Water Route including informational signage, trail map, trail etiquette should be posted at private access points as well as public ones in order to educate all river users. There is also opportunity for these businesses to offer additional PWC launches including accessible docks and kayak lockers and even PWC rentals.

The water routes may also benefit from opportune connections to downtowns and services by including stops at private marinas.

Private Operators

The development of an Active Transportation network provides a number of opportunities for small business operators.

- Bike, kayak, canoe, SUP, etc. rentals
- Bike and kayak tours
- Shuttle service
- River boat tours
- Markets
- Dining patios fronting trails or adding dock space along the river

The city can be active in promoting these opportunities.

Volunteerism

A number of volunteer initiatives could be engaged to help with trail maintenance such as city-wide clean up days, school or club engagement or adopt-a-trail programs

APPENDIX

APPENDIX I: DEFINITION OF TERMS

Definitions in this section were taken from a number of leading sources. Not all terms are found throughout the report. However, a familiarity with the selected words and their meaning is beneficial to having a sound understanding of Active Transportation planning.

Absolute Minimum Width

The lowest end of a design domain value for a bicycle facility component (e.g. lane, buffer), beyond which a bicycle facility component would be rendered unsafe and unusable. The absolute minimum should only be used for short distances, when reasonable consideration has been given to local context, and if maintenance equipment is able to fit within this width.

Active Transportation Facility

Features such as sidewalks, bicycle lanes, multi-use pathways, and pedestrian bridges that both promote and enhance active transportation.

Bicycle Accessible Shoulder

Bicycle accessible shoulders are paved spaces on the right side of rural roads and highways, and along certain urban streets, that can be used by people riding bicycles as well as by other street users.

Bicycle Facility

A roadway, part of a roadway, or off-street pathway intended for the use of bicycles and sometimes skateboards, in-line skates, scooters, or other active modes, either exclusively or shared with vehicular traffic or pedestrians.

Bicycle Lane

A lane intended for the exclusive use of bicycles and sometimes skateboards, in-line skates, scooters, or other active modes, within a roadway used by motorized vehicles.

Bicycle Pathway

A bicycle facility, physically separated from roadways, where motor vehicle traffic, except maintenance vehicles, is excluded.

Design Speed

A speed selected for purposes of design and correlation of the geometric features of a road.

Clear Zone

The roadside area immediately adjacent to the outer traveled lane, clear of hazards, which may be used safely by errant vehicles.

Crime Prevention Through Environmental Design (CPTED)

A multi-disciplinary approach for reducing crime through urban and environmental design and the management and use of built environments. For more information, visit: www.cpted.net/

Crosswalk

(a) a portion of the roadway at an intersection or elsewhere distinctly indicated for pedestrian crossing by signs or by lines or other markings on the surface, or

(b) the portion of a highway at an intersection that is included within the connection of the lateral lines of the sidewalks on the opposite sides of the highway, or within the extension of the lateral lines of the sidewalk on one side of the highway, measured from the curbs, or in the absence of curbs, from the edges of the roadway.

Curbside Activity

Uses of the street immediately adjacent to the curb that can have an impact on the function and design of bicycle and pedestrian facilities, and which may present challenges to people with disabilities. Curbside activities include motor vehicle parking, loading, and transit stops.

Design Speed

A speed selected for purposes of design and correlation of the geometric features of a road.

Design User

The target user or user group for which a bicycle facility is designed. For example, a design professional may want to design a facility that serves the 'interested but concerned' segment of the population (see Bicycle Rider Spectrum) or a AAA facility (see All Ages and Abilities (AAA) Bicycle Facility).

Design Vehicle

The vehicle whose dimensions and speed potential are used to dictate the minimum design requirements for a given street or facility. When designing a bicycle facility, the bicycle is used as the design vehicle. Bicycles are not uniform in size or operating style, so variations in bicycle design must be considered.

Desire Lines

A desire line (or desire path) is a path created by erosion from human or animal traffic. The desire line typically represents the most direct or easily navigated route between two destinations.

Desired Width

The recommended design domain value for a bicycle facility component (e.g. lane, buffer) that is likely to provide optimum operational performance and user experience. Design professionals are encouraged to design bicycle facilities using the desired width whenever feasible.

Detectable Warning Surface

A surface that is detectable underfoot or by a cane. Detectable warning surfaces can alert and/or guide people with blindness or low vision. tactile walking surface indicators (TWSI) are recommended by the CSA as the standardized detectable warning surface treatment. Changes in surface material, such as providing a strip of softscape (e.g. grass) or textured surface material next to hardscape (e.g. concrete) can also function as a detectable warning surface.

Furnishing Zone

The space that provides physical separation between the sidewalk and the bicycle lane.

Grade Separation

Vertical separation of two intersecting roadways or a roadway and a railway.

Highway

Synonymous with roadway but generally limited to higher-speed roadways in rural areas. However, in the B.C. MVA, 'highway' includes:

- (a) every highway within the meaning of the Transportation Act,
- (b) every road, street, lane or right of way designed or intended for or used by the general public for the passage of vehicles, and
- (c) every private place or passageway to which the public, for the purpose of the parking or servicing of vehicles, has access or is invited, but does not include an industrial road.

Joint-Use Trail

A trail that is shared by multiple users on the same section of trail at the same time, during the same season. Joint-use trails are intended for short distances.

Local Street Bikeway

A local street bikeway or bicycle boulevard is a bike route located on a local (often residential) street. These are typically provided on streets where motor vehicle traffic volumes and speeds are low. This allows cyclists to share the road comfortably with motor vehicle traffic without requiring designated bicycle lanes.

Mixed-Use Trail

A path with multiple users of different types (e.g., pedestrians, bicycles, and similar user types); Mixed-Use Trails may be shared (all users share the same pathway space, with or without a marked centre line) or may be separated (e.g., the pathway is separated into parallel travelled ways, e.g., one exclusively for pedestrians and one exclusively for bicycles, skateboards, and other active transportation users).

Motor Vehicle

A vehicle, not run on rails, that is designed to be self-propelled or propelled by electric power obtained from overhead trolley wires but does not include mobile equipment or a motor assisted cycle.

Multi-Use Pathway

A path with multiple users of different types (e.g., pedestrians, bicycles, and similar user types); MUPs may be shared (all users share the same pathway space, with or without a marked centre line) or may be separated (e.g., the pathway is separated into parallel travelled ways, e.g., one exclusively for pedestrians and one exclusively for bicycles, skateboards, and other active transportation users).

Off-Road Vehicle (ORV)

Any two- or three-wheeled motorized vehicle, as well as specific vehicles with four or more wheels as prescribed by regulation, intended for recreational use. Examples of off-road vehicles include all terrain vehicles (ATVs), side-by-sides, utility terrain vehicles (UTVs), amphibious ATVs, off-road motorcycles and dune buggies.

Operating Speed

The 85th percentile speed of vehicles at a time when traffic volumes are low and drivers are free to choose the speed at which they travel.

Pedestrian

A person walking, including people using mobility aids such as canes, walkers, manual wheelchairs, electric wheelchairs, and mobility scooters.

Pedestrian Through Zone

This is the most important area of the street for safe, accessible, and efficient movement of pedestrians. The width of this zone depends on the street context and the volume of pedestrian activity anticipated for the corridor or block. This area should be entirely free of permanent and temporary objects.

Posted Speed

A speed limitation introduced for reason of safety, economy, traffic control and government regulatory policy aimed at encouraging drivers to travel at an appropriate speed for surrounding conditions

Protected Bicycle Lane

A protected bicycle lane is a dedicated bicycle facility for the exclusive use of people cycling that is physically separated from motor vehicles and pedestrians by vertical and horizontal elements.

Public Realm

The collection of outdoor spaces between buildings that is publicly accessible, comprising streets, squares, courtyards, pathways, parks, and open spaces.

Road

Synonymous with road/roadway, but generally used in contexts that prioritize motor vehicle travel, such as highways. Streets and roads are generally classified based on their typical functional and operational characteristics.

Roadway

The portion of the highway that is improved, designed or ordinarily used for vehicular traffic, but does not include the shoulder, and if a highway includes two or more separate roadways. The term 'roadway' refers to any one roadway separately and not to all of them collectively.

Shared Lane

Designated shared-use lanes (also referred to as marked wide curb lanes) are lanes on a street designed to allow sufficient width for a motor vehicle to safely overtake a bicyclist, without crossing over into the adjacent or oncoming motor vehicle lane. Shared lanes are located on streets with higher motor vehicle volumes and speeds (as opposed to bicycle boulevards).

Shared Mobility

Systems that allow people to access a network of shared vehicles that have been spread across a community or portion of a community, as opposed to privately owned vehicles or vehicle rental companies based in a single location. Shared mobility systems currently include shared motor vehicles, shared bicycles/electric bicycles (including docked and dockless systems), and shared electric kick scooters.

Shared Street

A shared space is a street designed to be shared by pedestrians, cyclists, and slow-moving motorists, with no physical separation of modes and typically an emphasis on use as a livable public space.

Shared- Use Trail

A shared use trail is one that is used by different users at different times. For example, part of the walking trail in Strawberry Marsh is a designated snowmobile trail in winter.

Shoulder

That part of a roadway contiguous with the traveled way intended for emergency stopping, and/or lateral support of the roadway structure. It may also be configured to be accessible for bicycle travel.

Sidewalk

HA traveled way intended for pedestrian use, following an alignment generally parallel to that of the adjacent roadway.

Street

Synonymous with road/roadway but generally limited to lower speed roads in urban areas and implies multimodal use. Streets and roads are generally classified based on their typical functional and operational characteristics.

Street Buffer Zone

The space that provides physical separation between the bicycle lane and motor vehicle lane.

Tactile Attention Indicators

A tactile walking surface indicator comprising truncated domes that alert people of an impending change in elevation, conflicts with other transportation modes, and other potential hazards.

Tactile Direction Indicators

A tactile walking surface indicator that uses elongated, flat-topped bars to facilitate wayfinding in open areas. The elongated bars indicate the travel direction.



Traffic Control Device

A sign, signal, line, metre, marking, space, barrier or device placed or erected by authority of the minister responsible for the administration of the B.C. Transportation Act, the council of a municipality or the governing body of a Treaty First Nation or a person authorized by any of them to exercise that authority.

Traffic Control Signal

A traffic control device, whether manually, electrically or mechanically operated, by which traffic is directed to stop and to proceed.

Traffic Zone

A street zone that accommodates users traveling through a road or accessing destinations along the road. Traffic Zone uses can include motor vehicle through traffic, transit, goods movement, and bicycle travel. The Traffic Zone can be divided into multiple lanes that are shared by multiple users or dedicated to certain vehicles (such as exclusive transit lanes). Medians and refuge areas can also be included within this zone.

Universal Design

The design of products, environments, programs, and services to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design. 'Universal design' shall not exclude assistive devices for a particular group.

Vehicle

A device in, on, or by which a person or thing is, or may be, transported or drawn on a highway, but does not include a device designed to be moved by human power, a device used exclusively on stationary rails or tracks, mobile equipment, or a motor assisted cycle.

APPENDIX II: PUBLIC SURVEY SUMMARY

Community Survey

SURVEY RESPONSE REPORT

12 April 2021 - 05 May 2021

PROJECT NAME:

Miramichi Active Transportation Plan 2021

REGISTRATION QUESTIONS

SURVEY QUESTIONS

Q1 | Please identify the trails in the City that you use the most. (Top three)

Screen Name Redacted

French Fort Cove

4/13/2021 09:07 AM

Screen Name Redacted

French Fort Cove

4/13/2021 12:45 PM

Screen Name Redacted

French Fort Cove and Wellington
Street Trail

4/13/2021 01:48 PM

Screen Name Redacted

Morrison Cove - Chatham Waterfront
Trails - Middle Island Trails

4/13/2021 01:57 PM

Screen Name Redacted

French Fort Cove, Strawberry Marsh,
trail from Rodd to Loggieville

4/13/2021 02:00 PM

Screen Name Redacted

Loggieville to chatham trail and many
of connecting atv and snowmobile
trails. All trails at french fort cove

4/13/2021 02:04 PM

Screen Name Redacted

French Fort Cove

4/13/2021 02:16 PM

Screen Name Redacted

I walk/hike at French Fort Cove.

4/13/2021 02:16 PM

Screen Name Redacted

Ones on wellington street, in
riverside drive, french fort cove

4/13/2021 02:20 PM

Screen Name Redacted

French fort cove

4/13/2021 02:33 PM

Screen Name Redacted

French fort trails, strawberry marsh,
England's hollow

4/13/2021 02:37 PM

Screen Name Redacted

French fort cove, strawberry marsh,
middle island

4/13/2021 02:40 PM

Screen Name Redacted

FF Cove , KGH , Chatham trails

4/13/2021 02:47 PM

Screen Name Redacted

French fort cove. Strawberry marsh

4/13/2021 03:01 PM

Screen Name Redacted

French fort cove, strawberry marsh

4/13/2021 03:02 PM

Screen Name Redacted 4/13/2021 03:08 PM	Train trails in Loggieville, French Fort Cove, Middle Island
Screen Name Redacted 4/13/2021 03:18 PM	FFC
Screen Name Redacted 4/13/2021 03:18 PM	Strawberry Marsh(including down around the square and back), French Fort Cove, Newcastle Pump it Gym to Covid testing place in Chatham
Screen Name Redacted 4/13/2021 03:19 PM	Mountain Bike trails that are in and around French fort cove. Most of the single track is not part of the cove but we need the cove trails to access them. I also snowshoe and hike the advanced trails at FFC.
Screen Name Redacted 4/13/2021 03:38 PM	I walk/hike/run at French Fort Cove. I run,walk or bike on the shoulder of the road on a daily basis. This is a very challenging thing to do in Miramichi though as the motoring public is not accommodating. I have almost been hit several times.
Screen Name Redacted 4/13/2021 03:43 PM	I hike and snowshoe at French Fort Cove, I often walk on sidewalks and road shoulder in Nelson along the waterfront. I use the mountain bike trails at and around french fort cove.
Screen Name Redacted 4/13/2021 03:51 PM	French Fort Cove, Strawberry Marsh
Screen Name Redacted 4/13/2021 03:52 PM	French fort cove, strawberry marsh, pipeline
Screen Name Redacted 4/13/2021 03:53 PM	Strawberry Marsh, French Fort Cove, Private land trails, Waterfront Trail in Chatham
Screen Name Redacted 4/13/2021 04:10 PM	French fort cove, the one from Chatham to Napan, Strawberry Marsh.
Screen Name Redacted 4/13/2021 04:23 PM	Miramichi ski trails, and French fort cove

Screen Name Redacted 4/13/2021 04:26 PM	French Fort Cove
Screen Name Redacted 4/13/2021 04:27 PM	French fort cove mountain bike trails, the old NBTrail from loggieville to chatham
Screen Name Redacted 4/13/2021 04:48 PM	French fort cove, Loggieville trails, Marsh Trail
Screen Name Redacted 4/13/2021 05:00 PM	French Fort Cove; Nelson; Middle Island
Screen Name Redacted 4/13/2021 05:07 PM	Trail around middle island, French fort cove
Screen Name Redacted 4/13/2021 05:17 PM	French fort cove, strawberry marsh, Waterford green
Screen Name Redacted 4/13/2021 05:18 PM	I don't use trails, I don't feel safe.
Screen Name Redacted 4/13/2021 05:19 PM	French fort cove, Strawberry Marsh, old railroad tracks
Screen Name Redacted 4/13/2021 05:44 PM	French Fort Cove
Screen Name Redacted 4/13/2021 05:53 PM	Cove, loggieville trails
Screen Name Redacted 4/13/2021 06:17 PM	French fort cove
Screen Name Redacted 4/13/2021 06:38 PM	French Fort Cove
Screen Name Redacted 4/13/2021 06:42 PM	French Fort Cove, Strawberry Marsh, Middle Island
Screen Name Redacted 4/13/2021 06:50 PM	In Chatham
Screen Name Redacted 4/13/2021 06:54 PM	French Fort cove, city streets

Screen Name Redacted 4/13/2021 07:13 PM	French Fort Cove & surrounding trails to Gretna Green
Screen Name Redacted 4/13/2021 07:20 PM	French Fort Cove
Screen Name Redacted 4/13/2021 07:27 PM	French fort cove, middle island,
Screen Name Redacted 4/13/2021 07:38 PM	French Fort Cove
Screen Name Redacted 4/13/2021 07:42 PM	French for cove
Screen Name Redacted 4/13/2021 08:03 PM	Railbed in Taintville south of Wellington Street and Millbank trails
Screen Name Redacted 4/13/2021 08:08 PM	Loggieville, French fort cove, city water front
Screen Name Redacted 4/13/2021 08:21 PM	French Fort Cove
Screen Name Redacted 4/13/2021 08:37 PM	French Fort Cove, trail in Nelson (Papa Joe's, ski club), Chatham waterfront trail/ rails to trail
Screen Name Redacted 4/13/2021 09:07 PM	Strawberry Marsh
Screen Name Redacted 4/13/2021 09:12 PM	French fort cove, power line trail, loggieville trail
Screen Name Redacted 4/13/2021 09:13 PM	Trails at the cove
Screen Name Redacted 4/14/2021 02:42 AM	Sidewalks/Road Shoulder, French Fort Cove, Chatham Waterfront
Screen Name Redacted 4/14/2021 04:47 AM	French fort cove, strawberry marsh
Screen Name Redacted 4/14/2021 05:00 AM	French Fort Cove, Stawberry Marsh

Screen Name Redacted 4/14/2021 05:19 AM	French Fort Cove, Strawberry Marsh, Range Road
Screen Name Redacted 4/14/2021 07:20 AM	Side of road trail in Nelson, trail from Road down towards middle island, along leaden and Ritchie wharf.
Screen Name Redacted 4/14/2021 07:42 AM	French Fort Cove, Middle Island, trail in Taintville
Screen Name Redacted 4/14/2021 08:32 AM	French fort Cove, trail by papa joes, Chatham head+ bridges
Screen Name Redacted 4/14/2021 08:35 AM	Short tra
Screen Name Redacted 4/14/2021 08:47 AM	French Fort Cove
Screen Name Redacted 4/14/2021 09:22 AM	French fort cove
Screen Name Redacted 4/14/2021 09:29 AM	French Fort Cove
Screen Name Redacted 4/14/2021 09:35 AM	French Fort Cove, JMH Track, City Streets
Screen Name Redacted 4/14/2021 09:35 AM	Strawberry march, trail beside Rodd, French fort cove
Screen Name Redacted 4/14/2021 10:19 AM	French fort cove, strawberry Marsh, club 18 atv trails
Screen Name Redacted 4/14/2021 11:09 AM	Islandview Dr
Screen Name Redacted 4/14/2021 11:21 AM	French Fort Cove Trails, Miramichi Cross Country Ski Trails, Riverside trail from Chatham waterfront towards Middle Island
Screen Name Redacted 4/14/2021 12:04 PM	Main sidewalk
Screen Name Redacted	French fort cove, Chatham waterfront

4/14/2021 12:07 PM	trail
Screen Name Redacted 4/14/2021 12:19 PM	French Fort cove, Waterfront Green down to East Point, Middle island, Ritchie wharf, strawberry marsh
Screen Name Redacted 4/14/2021 12:37 PM	Nelson area
Screen Name Redacted 4/14/2021 01:01 PM	French Cove
Screen Name Redacted 4/14/2021 01:26 PM	Middle Island, french fort Cove
Screen Name Redacted 4/14/2021 02:26 PM	Chatham Waterfront
Screen Name Redacted 4/14/2021 04:07 PM	Cross country trails in Nelson ,
Screen Name Redacted 4/14/2021 05:41 PM	Cove, Stawberry Marsh, Newcastle Blvd/Gladstone Loop
Screen Name Redacted 4/14/2021 05:45 PM	Middle Island, Strawberry Marsh, Enclosure
Screen Name Redacted 4/14/2021 05:50 PM	French Fort Cove, Strawberry Marsh, Middle Island
Screen Name Redacted 4/14/2021 06:06 PM	French Fort Cove
Screen Name Redacted 4/14/2021 06:20 PM	Trail in Loggieville, French Fort Cove, Loggieville sidewalks
Screen Name Redacted 4/14/2021 06:57 PM	Miramichi Cross Country Ski Club
Screen Name Redacted 4/14/2021 07:09 PM	Chatham to Loggieville
Screen Name Redacted 4/14/2021 09:36 PM	French Fort Cove

Screen Name Redacted 4/15/2021 12:52 AM	French fort cove
Screen Name Redacted 4/15/2021 01:43 AM	French Fort Cove, Strawberry Marsh, Trans Canada Trail
Screen Name Redacted 4/15/2021 02:12 AM	Loggieville trail
Screen Name Redacted 4/15/2021 03:18 AM	French fort cove
Screen Name Redacted 4/15/2021 03:42 AM	Road, french fort cove
Screen Name Redacted 4/15/2021 04:32 AM	French fort cove
Screen Name Redacted 4/15/2021 05:03 AM	I don't use the trails in the city; just the roads to walk. I find trails unsafe with ATV use
Screen Name Redacted 4/15/2021 05:24 AM	French Fort Cove, Chatham trails from Rodd Miramichi to Taintville/Loggieville, Millbank trails at NB Power site
Screen Name Redacted 4/15/2021 07:34 AM	Miramichi Cross Country Ski Club, French Fort Cove, Strawberry Marsh, Snowmobile trails
Screen Name Redacted 4/15/2021 07:43 AM	Chatham Waterfront, England's Hollow
Screen Name Redacted 4/15/2021 07:49 AM	French Fort Cove, Rodd to Middle Island, Miramichi Ski Trails, Golf course in the off seasons.
Screen Name Redacted 4/15/2021 08:58 AM	McKinnon, Loggieville, French Fort cove
Screen Name Redacted 4/15/2021 09:04 AM	French Fort Cove
Screen Name Redacted 4/15/2021 10:22 AM	Miramichi

Screen Name Redacted 4/15/2021 10:59 AM	French fort cove, to and along middle island
Screen Name Redacted 4/15/2021 03:49 PM	Miramichi Cross country ski club
Screen Name Redacted 4/15/2021 04:06 PM	French /fort Cove,Cross country ski club, NB trail from Rodd to Loggieville
Screen Name Redacted 4/16/2021 03:47 AM	French Fort Cove, Water Street roadside, Morrison Cove, Strawberry Marsh
Screen Name Redacted 4/16/2021 04:23 AM	French fort cove, strawberry marsh
Screen Name Redacted 4/16/2021 05:22 AM	This is the issue, I am not sure where they are other then French Fort Cove and near the Rodd. Not sure where the bike trails are.
Screen Name Redacted 4/16/2021 06:39 AM	French Fort Cove
Screen Name Redacted 4/16/2021 06:42 AM	French Fort Cove, city roads,
Screen Name Redacted 4/16/2021 07:31 AM	Strawberry marsh, Morrison cove, French fort cove, cross country ski club
Screen Name Redacted 4/16/2021 07:52 AM	French fort cove, strawberry marsh
Screen Name Redacted 4/16/2021 08:40 AM	Cove
Screen Name Redacted 4/16/2021 09:12 AM	I frequent French Fort Cove trails in the winter for snowshoeing and in the summer for hiking/walking
Screen Name Redacted 4/16/2021 10:06 AM	No 1 is trails at the Miramichi Cross Country Ski Club for x-c skiing, walking, biking and running.
Screen Name Redacted 4/16/2021 10:14 AM	french fort cove, hollow, millbank

Screen Name Redacted 4/16/2021 02:20 PM	Nordin
Screen Name Redacted 4/16/2021 02:41 PM	Old railroad bed
Screen Name Redacted 4/16/2021 02:55 PM	Trail between the bridges (chatham head); french fort cove
Screen Name Redacted 4/16/2021 03:00 PM	Middle island
Screen Name Redacted 4/16/2021 03:12 PM	French Fort Cove
Screen Name Redacted 4/16/2021 03:14 PM	French Fort Cove
Screen Name Redacted 4/16/2021 03:18 PM	French fort cove
Screen Name Redacted 4/16/2021 03:28 PM	Atv Trails
Screen Name Redacted 4/16/2021 03:32 PM	Railway bed
Screen Name Redacted 4/16/2021 03:33 PM	Trail bed..... Forest road. Big dam
Screen Name Redacted 4/16/2021 03:47 PM	loggieville, along the old base,to Nelson
Screen Name Redacted 4/16/2021 03:49 PM	510, 52, 21
Screen Name Redacted 4/16/2021 04:06 PM	French fort cove and Range Rd back to Williston Dr
Screen Name Redacted 4/16/2021 04:07 PM	Loggieville
Screen Name Redacted 4/16/2021 04:44 PM	Forrest Road, Airport, Loggieville

Screen Name Redacted 4/16/2021 06:22 PM	Range road, French fort cove
Screen Name Redacted 4/16/2021 07:14 PM	Chatam waterfront, Morrison cove, middle island
Screen Name Redacted 4/16/2021 07:30 PM	French Fort cove
Screen Name Redacted 4/16/2021 10:18 PM	french fort cove... the remainder are non-existent
Screen Name Redacted 4/17/2021 07:31 AM	Napan are the most. But I try to use them all to keep things fresh
Screen Name Redacted 4/17/2021 07:49 AM	ATV trails snowmobile trails
Screen Name Redacted 4/17/2021 08:14 AM	ATV trails, sidewalk and French Fort walking trails
Screen Name Redacted 4/17/2021 08:55 AM	French fort cove, waterfront, ATV trails
Screen Name Redacted 4/17/2021 09:05 AM	Cove trail
Screen Name Redacted 4/17/2021 10:34 AM	portage to forest corner
Screen Name Redacted 4/17/2021 11:33 AM	French Fort Cove
Screen Name Redacted 4/17/2021 01:49 PM	French Fort Cove, Middle Island
Screen Name Redacted 4/17/2021 02:00 PM	French fort cove, middle island, atv trails
Screen Name Redacted 4/17/2021 02:32 PM	Trail by petro canada on chathan highway for atv
Screen Name Redacted 4/17/2021 03:01 PM	Atv trails and snowmobile trails

Screen Name Redacted 4/17/2021 03:13 PM	All Atv/ snowmobile trails
Screen Name Redacted 4/17/2021 03:50 PM	French Fort Cove
Screen Name Redacted 4/17/2021 05:15 PM	Cove,ATV Trails , Snowmobile trails
Screen Name Redacted 4/17/2021 07:12 PM	Loggieville
Screen Name Redacted 4/18/2021 06:09 AM	Atv snowmobile Nelson area and walk loggieville
Screen Name Redacted 4/18/2021 06:09 AM	French fort cove, city streets
Screen Name Redacted 4/18/2021 06:44 AM	French Fort Cove
Screen Name Redacted 4/18/2021 07:21 AM	All the old rail beds that are in City limits
Screen Name Redacted 4/18/2021 08:26 AM	Trails behind my house on the hydro line
Screen Name Redacted 4/18/2021 10:47 AM	Douglastown area. Use trail from England's Hollow to Loggieville
Screen Name Redacted 4/18/2021 12:42 PM	NBFSC trail 52, 517, Quad nb trail 1803
Screen Name Redacted 4/18/2021 04:51 PM	Behind Rodd
Screen Name Redacted 4/18/2021 05:21 PM	Douglasfield, French Fort Cove
Screen Name Redacted 4/18/2021 06:06 PM	French Fort Cove
Screen Name Redacted 4/19/2021 04:49 AM	Chatham Railbed

Screen Name Redacted 4/19/2021 05:00 AM	cove
Screen Name Redacted 4/19/2021 10:34 AM	French Fort Cove, Snowmobile Trails
Screen Name Redacted 4/19/2021 12:14 PM	Old railway, snowmobile trails, atv trails
Screen Name Redacted 4/19/2021 02:57 PM	French Fort Cove, Strawberry Marsh, Middle Island
Screen Name Redacted 4/20/2021 08:24 AM	French Fort Cove, Middle Island, Wilson's Poing
Screen Name Redacted 4/20/2021 03:14 PM	French Fort Cove
Screen Name Redacted 4/20/2021 03:51 PM	French Fort Cove, Cross country Ski Club, Middle Island
Screen Name Redacted 4/20/2021 03:54 PM	French Fort Cove, Main Roads, Strawberry Marsh
Screen Name Redacted 4/20/2021 04:00 PM	Millbank Trails, Miramichi Cross Country Ski Club, Old Airstrip trail (Douglastown)
Screen Name Redacted 4/20/2021 04:05 PM	French Fort Cove, Loggieville Trail, MCCSC
Screen Name Redacted 4/20/2021 04:32 PM	Roads, French fort cove, strawberry marsh
Screen Name Redacted 4/20/2021 04:47 PM	Trail from Rodd to Middle Island
Screen Name Redacted 4/20/2021 04:55 PM	French Fort Cove
Screen Name Redacted 4/20/2021 05:13 PM	Cove, xcountrry ski club, old rail line
Screen Name Redacted 4/20/2021 05:37 PM	French fort cove, trails behind water system in Chatham, strawberry marsh

Screen Name Redacted 4/20/2021 05:51 PM	French Fort Cove
Screen Name Redacted 4/20/2021 05:52 PM	French fort cove, strawberry marsh, ski club
Screen Name Redacted 4/20/2021 06:08 PM	French fort cove, snowmobile, fourwheeler
Screen Name Redacted 4/20/2021 06:21 PM	French fort cove, Miramichi cross country ski trails
Screen Name Redacted 4/20/2021 06:28 PM	Ski club for snowshoeing
Screen Name Redacted 4/20/2021 06:35 PM	French fort cove trails
Screen Name Redacted 4/20/2021 06:48 PM	Snowmobile trails
Screen Name Redacted 4/21/2021 02:08 AM	French Fort cove
Screen Name Redacted 4/21/2021 03:22 AM	French fort cove
Screen Name Redacted 4/21/2021 03:50 AM	French Fort Cove
Screen Name Redacted 4/21/2021 04:09 AM	French fort cove
Screen Name Redacted 4/21/2021 09:01 AM	ATV trails in the winter. The trail needs to connect the Community of Chatham Head to the trail system as presently we have no access and have to trailer our ATV to another area to enjoy the trails.
Screen Name Redacted 4/21/2021 12:12 PM	The trail that runs along hwy 126 between Papa Joes and Ski Club parking lot and along highway to my home daily walks. When I have time I like to take dog for walk at

	Strawberry Marsh or French Fort Cove.
Screen Name Redacted 4/21/2021 06:07 PM	Marsh , French fort trails
Screen Name Redacted 4/21/2021 06:09 PM	French Fort Cove
Screen Name Redacted 4/21/2021 07:06 PM	Wellington, Hwy 11, Chatham
Screen Name Redacted 4/22/2021 07:18 AM	French Fort Cove trails
Screen Name Redacted 4/22/2021 08:04 AM	French Fort cove
Screen Name Redacted 4/22/2021 11:16 AM	Usually walk on sidewalks around Newcastle. Sometimes sue the Cove Trails.
Screen Name Redacted 4/22/2021 11:32 AM	French fort cove, Waterford green, ritchies wharf
Screen Name Redacted 4/22/2021 12:10 PM	Loggieville to Chatham Trail
Screen Name Redacted 4/22/2021 12:19 PM	Loggieville to Chatham Trail, Chatham to Middle Island Trail, French Fort Cove
Screen Name Redacted 4/22/2021 03:53 PM	Cross Country Ski Trails
Screen Name Redacted 4/23/2021 07:50 AM	ski club, Morrison Cove, Miramichi Marsh
Screen Name Redacted 4/23/2021 08:05 AM	French forte cove , mccsc. Strawberry marsh
Screen Name Redacted 4/23/2021 08:10 AM	Cove, Strawberry Marsh, and Miramichi Cross Country Ski Club in winter
Screen Name Redacted 4/23/2021 08:26 AM	Frenc Fort Cove, miramichi cross country club,roads

Screen Name Redacted 4/23/2021 08:27 AM	French fort cove, miramichi ski club
Screen Name Redacted 4/23/2021 09:39 AM	French Fort Cove, Xcountry club, Strawberry Marsh
Screen Name Redacted 4/23/2021 09:44 AM	French fort cove
Screen Name Redacted 4/23/2021 09:49 AM	French Fort Cove trails
Screen Name Redacted 4/23/2021 10:30 AM	Miramichi Cross Country Ski Club, French Fort Cove
Screen Name Redacted 4/23/2021 11:56 AM	STRAWBERRY MARSH - FRENCH FORT COVE
Screen Name Redacted 4/23/2021 11:59 AM	MCCSC, Barnaby River, road cycling around the City vicinity
Screen Name Redacted 4/23/2021 03:22 PM	French Fort Cove and the Miramichi Cross County Ski Club
Screen Name Redacted 4/24/2021 05:02 AM	French fort cove, Chatham riverside trail (England's hollow to downtown), strawberry marsh
Screen Name Redacted 4/24/2021 06:09 AM	French fort cove, Ski club, trails around the high school
Screen Name Redacted 4/24/2021 07:01 AM	French Fort Cove
Screen Name Redacted 4/24/2021 07:30 AM	Morrison Cove, Miramichi Marsh, Ski Trails
Screen Name Redacted 4/24/2021 08:34 AM	French fort cove
Screen Name Redacted 4/24/2021 08:51 AM	Strawberry marsh, French fort cove
Screen Name Redacted 4/24/2021 09:01 AM	French Fort Cove

Screen Name Redacted 4/24/2021 09:06 AM	French fort cove
Screen Name Redacted 4/24/2021 09:09 AM	Cove trails
Screen Name Redacted 4/24/2021 10:11 AM	Douglas town, Chatham near Rodd
Screen Name Redacted 4/24/2021 10:21 AM	Strawberry Marsh, French Fort cove
Screen Name Redacted 4/24/2021 10:41 AM	French Fort Cove
Screen Name Redacted 4/24/2021 11:08 AM	Taintville into Chatham, French Fort Cove, trail to Loggieville
Screen Name Redacted 4/24/2021 11:47 AM	Water Street, Wellington Street, Taintville trail
Screen Name Redacted 4/24/2021 12:07 PM	MACKINNON ROAD , FRENCH FORT AND MILLBANK POWER STATION
Screen Name Redacted 4/24/2021 12:12 PM	French fort cove Strawberry Marsh Middle Island
Screen Name Redacted 4/24/2021 12:14 PM	ATV trails
Screen Name Redacted 4/24/2021 12:23 PM	French fort cove , marsh, 126
Screen Name Redacted 4/24/2021 12:54 PM	French Fort Cove
Screen Name Redacted 4/24/2021 01:07 PM	French Fort Cove
Screen Name Redacted 4/24/2021 01:17 PM	Strawberry marsh. King George hwy and pleasant street
Screen Name Redacted 4/24/2021 01:48 PM	All trails

Screen Name Redacted 4/24/2021 03:18 PM	Chatham waterfront trail, French fort cove
Screen Name Redacted 4/24/2021 04:34 PM	French fort covr
Screen Name Redacted 4/24/2021 04:41 PM	Water street. Horridly unsafe
Screen Name Redacted 4/24/2021 04:43 PM	Strawberry marsh, French fort cove, middle island
Screen Name Redacted 4/24/2021 04:46 PM	Streets in Nelson
Screen Name Redacted 4/24/2021 05:08 PM	French Fort Cove and Taintville atv trails
Screen Name Redacted 4/24/2021 05:20 PM	Miramichi
Screen Name Redacted 4/24/2021 05:45 PM	Chatham water front, French fort cove trails, wellington st to England's Hollow
Screen Name Redacted 4/24/2021 06:12 PM	French fort cove
Screen Name Redacted 4/24/2021 06:26 PM	Newcastle waterfront , ritchie's wharf, french fort cove
Screen Name Redacted 4/24/2021 06:43 PM	Tantville, England Hallow, French Fort Cove
Screen Name Redacted 4/24/2021 07:03 PM	French Fort Cove
Screen Name Redacted 4/24/2021 07:22 PM	French fort cove, shoulder of rd on water st.
Screen Name Redacted 4/24/2021 07:48 PM	Cove
Screen Name Redacted 4/24/2021 08:06 PM	French fort cove

Screen Name Redacted 4/24/2021 08:09 PM	French fort
Screen Name Redacted 4/24/2021 08:11 PM	French Fort Cove
Screen Name Redacted 4/24/2021 08:25 PM	French fort cove
Screen Name Redacted 4/24/2021 08:37 PM	French Fort Cove
Screen Name Redacted 4/24/2021 08:42 PM	Strawberry marsh, cove
Screen Name Redacted 4/25/2021 05:19 AM	French fort cove .strawberry marsh
Screen Name Redacted 4/25/2021 05:32 AM	French fort cove, water front green and Wilson's point
Screen Name Redacted 4/25/2021 05:42 AM	French Fort Cove
Screen Name Redacted 4/25/2021 06:04 AM	Ritchie wharf
Screen Name Redacted 4/25/2021 06:13 AM	French Fort Cove, Strawberry Marsh and Waterford Green to Middle Island. I also use sidewalks when I can as well.
Screen Name Redacted 4/25/2021 06:37 AM	French fort cove
Screen Name Redacted 4/25/2021 06:44 AM	French Fort Cove
Screen Name Redacted 4/25/2021 06:48 AM	Bridges loop (miramichi-morrissey
Screen Name Redacted 4/25/2021 07:46 AM	french fort cove, snowmobile trails in napan
Screen Name Redacted 4/25/2021 07:56 AM	french fort cove, strawberry marsh

Screen Name Redacted 4/25/2021 08:05 AM	French fort cove, strawberry marsh
Screen Name Redacted 4/25/2021 08:29 AM	French Fort Cove
Screen Name Redacted 4/25/2021 08:41 AM	Trails along Wellington (old railway)
Screen Name Redacted 4/25/2021 09:05 AM	French Fort Cove
Screen Name Redacted 4/25/2021 10:18 AM	French Fort cove, strawberry marsh
Screen Name Redacted 4/25/2021 10:29 AM	French Fort Cove for hiking including the ones far back, X-country ski club, strawberry marsh
Screen Name Redacted 4/25/2021 10:30 AM	French Fort Cove
Screen Name Redacted 4/25/2021 10:56 AM	1. Chatham/England's hollow 2. Middle island 3. Bird sanctuary
Screen Name Redacted 4/25/2021 01:36 PM	French fort cove, chatham/loggieville trail, middle island, Morrison cove
Screen Name Redacted 4/25/2021 02:34 PM	French Fort Cove
Screen Name Redacted 4/25/2021 03:31 PM	French Fort Cove, side of road in Whitney
Screen Name Redacted 4/25/2021 04:36 PM	ATV trails in Chatham area
Screen Name Redacted 4/25/2021 04:55 PM	I have used Strawberry Marsh , French Fort Cove ,Nelson ski trail the hwys
Screen Name Redacted 4/25/2021 05:17 PM	French Fort Cove, Ski Club, Strawberry Marsh
Screen Name Redacted	French fort cove, cross country ski

4/25/2021 06:24 PM	club and main roads for biking.
Screen Name Redacted 4/25/2021 06:27 PM	French fort cove, strawberry marsh and bridges.
Screen Name Redacted 4/25/2021 06:54 PM	French Fort Cove, MillBank Trail, Morrison Cove
Screen Name Redacted 4/25/2021 07:21 PM	There is No safe cycle road. I need to be safe. Right now I use the roads
Screen Name Redacted 4/25/2021 07:28 PM	French Fort Cove and Miramichi Cross country ski club. My own bike, fast bike and snowshoe trails at home. I also use some mini linked trails around the city with sections of road.
Screen Name Redacted 4/25/2021 07:29 PM	French fort cove
Screen Name Redacted 4/25/2021 07:51 PM	French Fort Cove, Miramichi Cross Country Ski club, Strawberry Marsh
Screen Name Redacted 4/25/2021 08:10 PM	ATV, snowmobile and walking(hiking)
Screen Name Redacted 4/25/2021 08:19 PM	Schooner point ,portage,loggville
Screen Name Redacted 4/25/2021 08:28 PM	Douglastown trails (near Walmart), French Fort Cove, Engels Hallow trail in Chatham.
Screen Name Redacted 4/25/2021 08:41 PM	French Fort Cove, Middle Island, Miramichi Nature Trail
Screen Name Redacted 4/25/2021 09:09 PM	French Fort Cove
Screen Name Redacted 4/26/2021 03:26 AM	Chatham waterfront, marsh
Screen Name Redacted 4/26/2021 04:24 AM	Loggieville, French Fort Cove, Chatham Waterfront down towards Middle Island and Middle Island.

	Strawberry Marsh,
Screen Name Redacted 4/26/2021 04:44 AM	Between Chatham and Loggieville
Screen Name Redacted 4/26/2021 05:09 AM	from Taintville to Chatham and French Fort Cove
Screen Name Redacted 4/26/2021 05:12 AM	Streets in Nelson, snowshoe trails at cross country club, French fort cove, waterfront in Chatham
Screen Name Redacted 4/26/2021 05:12 AM	STRAWBERRY MARSH
Screen Name Redacted 4/26/2021 05:15 AM	FRENCH FORT COVE, MORRISON COVE, MIDDLE ISLAND
Screen Name Redacted 4/26/2021 05:24 AM	French Fort Cove and NB snowmobile trails
Screen Name Redacted 4/26/2021 05:51 AM	French Fort Cove
Screen Name Redacted 4/26/2021 06:00 AM	Road shoulder
Screen Name Redacted 4/26/2021 06:01 AM	French fort cove, Loggieville, NB trail
Screen Name Redacted 4/26/2021 06:17 AM	French fort cove and the adjoining park across the road.walking trail by mill bank power plant.
Screen Name Redacted 4/26/2021 06:24 AM	Taintville, loggieville,
Screen Name Redacted 4/26/2021 06:27 AM	cove
Screen Name Redacted 4/26/2021 07:13 AM	French fort cove, cross country ski club
Screen Name Redacted 4/26/2021 07:13 AM	French Fort Cove
Screen Name Redacted	French fort cove, my neighbourhood

4/26/2021 07:16 AM	(shoulder), cross country ski club
Screen Name Redacted 4/26/2021 07:19 AM	French Fort Cove, Millbank Nature Trail, Chatham Waterfront
Screen Name Redacted 4/26/2021 08:09 AM	There are no trails in my immediate area so we are forced to walk on the side of the highways.
Screen Name Redacted 4/26/2021 08:44 AM	French Fort Cove
Screen Name Redacted 4/26/2021 08:47 AM	French fort cove, "blue" trails in loggieville/taintville
Screen Name Redacted 4/26/2021 08:52 AM	Trail behind my house(Lawlor Lane)
Screen Name Redacted 4/26/2021 09:15 AM	The ones that run from Chatham to Loggieville.
Screen Name Redacted 4/26/2021 12:49 PM	ski club french fort cove road and ducks unlimited
Screen Name Redacted 4/26/2021 01:38 PM	Skiing/road biking
Screen Name Redacted 4/26/2021 03:18 PM	French Fort Cove

Optional question (312 response(s), 28 skipped)

Question type: Single Line Question

Q2 | What areas should be linked/ and/or require additional trails?

Screen Name Redacted 4/13/2021 09:07 AM	Waterfront trail from Rodd to Middle Island
Screen Name Redacted 4/13/2021 11:05 AM	The original Active Transportation plan had numerous connections; those should be established and are still valid.
Screen Name Redacted 4/13/2021 01:48 PM	Wellington Street trail going by airport right to Newcastle and paved

	would be out of this world.
Screen Name Redacted 4/13/2021 01:57 PM	Morrison Cove Trails to Downtown - Waterfront connections
Screen Name Redacted 4/13/2021 02:00 PM	Loggieville trail should be extended and paved. It would be great if it could be extended all the way up to St. Patrick's drive.
Screen Name Redacted 4/13/2021 02:04 PM	Chatham, newcastle and douglastown should all be connected
Screen Name Redacted 4/13/2021 02:37 PM	There should be a paved bike/walk trail that connects Newcastle to Chatham, around the River
Screen Name Redacted 4/13/2021 02:40 PM	Strawberry marsh linked with River view trail. Chatham head trail extended or somehow linked with the Chatham river front trail
Screen Name Redacted 4/13/2021 03:02 PM	Newcastle to Douglastown
Screen Name Redacted 4/13/2021 03:08 PM	All the old train track trails through Chatham, Taintville and Loggieville
Screen Name Redacted 4/13/2021 03:18 PM	FFC and Ritchie wharf
Screen Name Redacted 4/13/2021 03:18 PM	Traffic circles need bike lanes, and trails through out the city. Sides of the road are not wide enough to allow for bikes! Drivers have come to close when we are biking!
Screen Name Redacted 4/13/2021 03:19 PM	The downtowns of Chatham and Newcastle should be linked. Douglastown can easily be linked from top of Williston road to Nordin and on to Newcastle through the old trans Canada trail that was started and then gone cold. .
Screen Name Redacted 4/13/2021 03:38 PM	Chatham to Douglastown via the Centennial Bridge
Screen Name Redacted	To begin, I want to see the

4/13/2021 03:38 PM

downtowns linked by a paved trail system. It's imperative that it be paved in order to be wheelable. Wheelable = accessible for ALL! Additionally, bike lanes need to be integrated into main city streets.

Screen Name Redacted

4/13/2021 03:43 PM

Miramichi Cyclists for Healthy Living group has created a great plan. The trails connect downtown Chatham to downtown Newcastle. Off road trails from top of Williston Road to Nordin to Newcastle, old trans canada trail that was abandoned years ago.

Screen Name Redacted

4/13/2021 03:51 PM

Strawberry Marsh

Screen Name Redacted

4/13/2021 03:53 PM

Chatham to Newcastle via Nelson

Screen Name Redacted

4/13/2021 04:10 PM

It would be great to have longer trails. And a safe place to ride a bike along the KGHWY area.

Screen Name Redacted

4/13/2021 04:23 PM

I do not know

Screen Name Redacted

4/13/2021 04:27 PM

There should be a multiuse trail from loggieville to Newcastle

Screen Name Redacted

4/13/2021 04:48 PM

It would be nice to see a trail system to link both down town areas and eventually connect to the trail system through out the province.

Screen Name Redacted

4/13/2021 05:00 PM

Chatham to Newcastle via a distance trail; Waterfront Trails

Screen Name Redacted

4/13/2021 05:07 PM

A paved trail around the city would be unreal. I have seen this in other city's and always see people on them

Screen Name Redacted

4/13/2021 05:17 PM

Strawberry marsh needs to connect (via bike lanes) to Ritchie wharf and French Ft cove

Screen Name Redacted

4/13/2021 05:18 PM

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Screen Name Redacted 4/13/2021 05:44 PM	Former towns of Newcastle and Chatham
Screen Name Redacted 4/13/2021 05:53 PM	It would be amazing to have a trail around the river
Screen Name Redacted 4/13/2021 06:42 PM	Downtown Newcastle to Chatham,
Screen Name Redacted 4/13/2021 06:54 PM	We need paved trails for road bikes
Screen Name Redacted 4/13/2021 07:38 PM	Chatham Newcastle
Screen Name Redacted 4/13/2021 08:03 PM	Downtown areas, outlying neighbourhoods
Screen Name Redacted 4/13/2021 08:08 PM	Former Newcastle to Chatham, going through Nordic Douglastown bushville and Nelson , create a loop and loggieville
Screen Name Redacted 4/13/2021 08:21 PM	Biking
Screen Name Redacted 4/13/2021 08:37 PM	I love the idea of a trail linking the downtowns. Would love to be able to cross the river on bike, with kids in bike trailer. Would LOVE to be able to get from Islandiew Dr to St Patrick Dr!!! Used to be able to cut thru old mill property off Flett
Screen Name Redacted 4/13/2021 09:12 PM	All neighbourhoods should be linked. Loggieville to Chatham to Newcastle to nelson
Screen Name Redacted 4/13/2021 09:13 PM	A trail that connects both sides of the river
Screen Name Redacted 4/14/2021 02:42 AM	As a resident of Douglastown there are almost no trails here, and there are no bike lanes or sidewalks connecting us to Newcastle/Chatham. As someone who uses biking as a preferred

	method of commuting in the summer this can be dangerous.
Screen Name Redacted 4/14/2021 05:19 AM	Along the river Newcastle to Douglastown
Screen Name Redacted 4/14/2021 07:20 AM	I'd like to see French Fort Cove open in winter, plus an indoor walking space for seniors and physically challenged.
Screen Name Redacted 4/14/2021 07:42 AM	A trail looping the river would be nice
Screen Name Redacted 4/14/2021 08:32 AM	Island view drive is located vwithin city limits and does not have a sidewalk safe enough for walking, it is also not connected to nelson st (papa joes)
Screen Name Redacted 4/14/2021 08:47 AM	Cove
Screen Name Redacted 4/14/2021 09:35 AM	Paved Trail Proposal
Screen Name Redacted 4/14/2021 09:35 AM	I would like to see strawberry march made into a loop.
Screen Name Redacted 4/14/2021 10:19 AM	Need a river crossing for atvs, bikes and walking.
Screen Name Redacted 4/14/2021 11:08 AM	Newcastle to Chatham
Screen Name Redacted 4/14/2021 12:19 PM	Morisey Bridge, Douglastown, Chatham to Chatham head
Screen Name Redacted 4/14/2021 01:26 PM	Waterford Green to Middle Island and Strawberry Marsh to downtown
Screen Name Redacted 4/14/2021 05:41 PM	Downtown Newcastle, waterfront, MV High School Area, bridge loop
Screen Name Redacted 4/14/2021 05:45 PM	We need the Morrissey Bridge adapted for safe crossing of the river for pedestrians, snowmobiles and

	ATVers. This would also preserve this historic site.
Screen Name Redacted 4/14/2021 05:50 PM	Chatham to Nelson and Douglastown to Newcastle
Screen Name Redacted 4/14/2021 06:06 PM	Douglastown waterfront
Screen Name Redacted 4/14/2021 06:20 PM	Not sure
Screen Name Redacted 4/14/2021 09:36 PM	Should be able to bike around the river
Screen Name Redacted 4/15/2021 01:43 AM	Walking on either side of the river means taking the shoulder of the road at certain points. Having a safer connection would be nice.
Screen Name Redacted 4/15/2021 02:12 AM	Everywhere in the city
Screen Name Redacted 4/15/2021 03:18 AM	Would love to be able to walk around the river
Screen Name Redacted 4/15/2021 03:42 AM	River
Screen Name Redacted 4/15/2021 04:32 AM	King George hwy needs sidewalks from bridge to bridge. There is room to develop sidewalks to make it safer for the community to get from douglastown to Newcastle
Screen Name Redacted 4/15/2021 05:24 AM	Trails that allow for commute from Chatham to Newcastle and from Newcastle to Douglastown. Water Street and King George Highway are unsuitable for commuting.
Screen Name Redacted 4/15/2021 07:49 AM	Miramichi River trail system
Screen Name Redacted 4/15/2021 08:58 AM	Douglastown to Newcastle
Screen Name Redacted	ski club trails to other accessible

4/15/2021 04:06 PM	trails, French Fort cove to Mckinnonn road updated trail, Loggieville to Nelson
Screen Name Redacted 4/16/2021 03:47 AM	Water Street (Hospital to Chatham) requires bike lanes/sidewalk.
Screen Name Redacted 4/16/2021 05:22 AM	Douglastown area needs more trails as we have to go on route 11 or route 8 to go biking.
Screen Name Redacted 4/16/2021 06:42 AM	See 13 b
Screen Name Redacted 4/16/2021 09:12 AM	The focus needs to be on increasing sidewalks and improving the current ones. The trails at the Cove are fine
Screen Name Redacted 4/16/2021 10:14 AM	so many people walk in chatham and the cross walks and sidewalks are terrible.
Screen Name Redacted 4/16/2021 02:41 PM	All areas of trails should be linked
Screen Name Redacted 4/16/2021 03:28 PM	Trails should be linked across the Miramichi river for atvs. Allow bridge usage
Screen Name Redacted 4/16/2021 03:32 PM	South to North side of river
Screen Name Redacted 4/16/2021 03:33 PM	Across river by morsey bridge etc
Screen Name Redacted 4/16/2021 04:06 PM	Should have better connections from Newcastle to Douglas town. There are no sidewalks and side of road is mud and not enough room to walk or bike safely.
Screen Name Redacted 4/16/2021 04:07 PM	Chatham to Douglastown
Screen Name Redacted 4/16/2021 04:44 PM	Chatham head to Nelson, and the North side of the river to the south side
Screen Name Redacted 4/16/2021 07:14 PM	Middle island to Maurie's ice cream

Screen Name Redacted 4/16/2021 10:18 PM	north south east west..
Screen Name Redacted 4/17/2021 07:31 AM	Being able to get to the Rodd on ATV's is something I believe should be done. Both to improve tourism in our area, and to increase access for local residents.
Screen Name Redacted 4/17/2021 07:49 AM	River crossing for ATV's
Screen Name Redacted 4/17/2021 08:14 AM	ATV trails. Should be link through Morrissey bridge. More access to local restaurants and hotels could help the economy in the city. Beautiful summer and winter trail will bring peiple to Miramichi
Screen Name Redacted 4/17/2021 08:55 AM	We need more trails for ATVs to be able to travel all over the city of and avoid travelling on roads, snowmobiles also beee to be able to safely cross the river, it's a huge industry, a safe crossing is necessary, ATVs need to cross as well safely
Screen Name Redacted 4/17/2021 10:34 AM	nelson to newcastle
Screen Name Redacted 4/17/2021 11:33 AM	French Fort Cove to downtown Newcastle
Screen Name Redacted 4/17/2021 01:49 PM	Bridges are not user friendly for pedestrians or cyclists and should be addressed for year round accessibility
Screen Name Redacted 4/17/2021 02:00 PM	Chatham to Newcastle
Screen Name Redacted 4/17/2021 02:32 PM	For atv, chatham head should be linked with newcastle by the old bridge if its safe to cross and also on chatham side to improve atv trails
Screen Name Redacted	ATV trail to Nelson and a river

4/17/2021 03:01 PM	crossing
Screen Name Redacted 4/17/2021 03:13 PM	Water crossings
Screen Name Redacted 4/17/2021 05:15 PM	From one end to the other
Screen Name Redacted 4/18/2021 06:09 AM	Nelson to Newcastle and derby to cassilis should use the Anderson Bridge for off rd vehicles
Screen Name Redacted 4/18/2021 06:09 AM	There are a lot of streets without sidewalks.
Screen Name Redacted 4/18/2021 10:47 AM	Should be able to loop all around the city. Use the Morris Bridge for adverse, snowmobiling, biking and walking
Screen Name Redacted 4/18/2021 12:42 PM	We should have bridge access, from east to west and north south (anderson bridge and morrissey bridge).
Screen Name Redacted 4/18/2021 06:06 PM	Ideally link the three “epicenters” of Chatham, Newcastle and Douglastown
Screen Name Redacted 4/19/2021 04:49 AM	Chatham to Nelson
Screen Name Redacted 4/19/2021 10:34 AM	Former towns of Newcastle/ Nordin / Douglastown
Screen Name Redacted 4/19/2021 12:14 PM	Connection to downtown centres
Screen Name Redacted 4/19/2021 01:57 PM	Down town to restaurants and gas for atv and trails from eel ground to nordin to get on the trail
Screen Name Redacted 4/19/2021 02:57 PM	I like the idea of linking Chatham to Newcastle. Or Douglastown to Newcastle.
Screen Name Redacted 4/20/2021 03:51 PM	Nelson... I love to run but I don't feel like I have a safe place to do so. There are no paved shoulders.

Screen Name Redacted 4/20/2021 03:54 PM	A general biking route around the river would be amazing. Perhaps connect it to the Acadian coastal route with paved trails.
Screen Name Redacted 4/20/2021 04:05 PM	Trails designated for bikers/walkers/runners only that are not on roads. In winter trails that are designated only for fat biking/snow shoeing.
Screen Name Redacted 4/20/2021 04:47 PM	Unsure
Screen Name Redacted 4/20/2021 05:13 PM	Area(s) Close to river, link to connect north and south side of river
Screen Name Redacted 4/20/2021 05:37 PM	All trails should be linked... over a 15 year time period
Screen Name Redacted 4/20/2021 06:28 PM	Along the water
Screen Name Redacted 4/20/2021 11:13 PM	In Chatham the trail by the river end up
Screen Name Redacted 4/21/2021 02:08 AM	Ideally all areas of the city to be linked in one large scale trail system.
Screen Name Redacted 4/21/2021 03:22 AM	Anywhere in the city that can have trails should and all should be linked if possible
Screen Name Redacted 4/21/2021 09:01 AM	Winter ATV trails should be linked to all Communities including Chatham Head. Also both side of the river should be connected using the Morrissey Bridge. This would raise the amount of traffic and attract out of town folks. Keep people off the ICE
Screen Name Redacted 4/21/2021 12:12 PM	Nelson walking trail along highway could be continued further back and feels disconnected from rest of city, sidewalk ends at Old Line Ave. Also trail needs a small culvert as water overflows in spring and has been

	rutted worse in those areas
Screen Name Redacted 4/21/2021 06:07 PM	Ability to bike or walk around The river on the bike lanes or sidewalks
Screen Name Redacted 4/21/2021 07:06 PM	Chatham to Newcastle
Screen Name Redacted 4/22/2021 07:18 AM	More groomed trails for walkers and hikers through the winter months
Screen Name Redacted 4/22/2021 11:16 AM	Link Richie Wharf trails to Frenchfort Cove. Utilize any old out of use rail lines to link trails. Link to Cross Country ski trails for summer bike use. link the Marsh trails to Richie Wharf . Do similar setup in Chatham. Then link both sides of Rive
Screen Name Redacted 4/22/2021 11:32 AM	Should be able to walk entire river if you want - connect morrissy bridge to a waterfront trail through Chatham head/Chatham to Newcastle!!
Screen Name Redacted 4/22/2021 12:19 PM	Chatham to Chatham Head
Screen Name Redacted 4/22/2021 03:53 PM	Around the river trail
Screen Name Redacted 4/23/2021 07:50 AM	newcastle waterfront, bridges access
Screen Name Redacted 4/23/2021 08:05 AM	A river side route
Screen Name Redacted 4/23/2021 08:10 AM	Newcastle to Chatham, both sides of the river.
Screen Name Redacted 4/23/2021 08:26 AM	Link to the acadian peninsula trail system
Screen Name Redacted 4/23/2021 08:27 AM	Newcastle and douglastown
Screen Name Redacted 4/23/2021 09:39 AM	It would be great to have a trail system surrounding river, as well as

	connections to the bike trails already established in Acadian Peninsula
Screen Name Redacted 4/23/2021 10:30 AM	I would love more ski/walking trails.
Screen Name Redacted 4/23/2021 11:56 AM	RIVER CROSSING - TRAIL CONNECTIVITY
Screen Name Redacted 4/23/2021 11:59 AM	As cyclists we should not be afraid to ride on the streets, reality is much different but better then it was years ago, not so much middle fingers from drivers while cycling
Screen Name Redacted 4/23/2021 03:22 PM	Bike lanes and sidewalks should be the first priority along water street and king George highway
Screen Name Redacted 4/24/2021 05:02 AM	I would like to see a paved trail network linking the Chatham and Newcastle downtown areas, to start.
Screen Name Redacted 4/24/2021 06:09 AM	More link trails connecting to french fort cove. Please do something about the aggressiveness of the mountain bike club. Bullying people for using shared use trails is not appropriate. The trails are for everyone not just for biking.
Screen Name Redacted 4/24/2021 07:30 AM	A loop joining the Miramichi and Morrissy bridges - I know...in my dreams unless the Morrissy becomes a crossing for snowmobiles.
Screen Name Redacted 4/24/2021 08:34 AM	Newcastle Blvd to french fort cove.
Screen Name Redacted 4/24/2021 09:01 AM	A waterfront trail around the river
Screen Name Redacted 4/24/2021 09:09 AM	We need a half marathon pathways around the Miramichi river.
Screen Name Redacted 4/24/2021 09:20 AM	Hwy 11. There should be a safe way to cross this hwy especially for students crossing from Jmh school to walk to subway. Someone is going to

	get hurt running across hwy.
Screen Name Redacted 4/24/2021 10:11 AM	?
Screen Name Redacted 4/24/2021 10:21 AM	Newcastle to douglastown trail
Screen Name Redacted 4/24/2021 11:08 AM	Biking and walking paved trail from Chatham to Middle Is., share a path bikers/walkers around the river.
Screen Name Redacted 4/24/2021 11:47 AM	Crosswalks at road trail entrances,
Screen Name Redacted 4/24/2021 12:07 PM	Many people walk on McKinnon road, it needs a sidewalk. Safe bike lanes around the city
Screen Name Redacted 4/24/2021 12:12 PM	French for cove is great but not exactly safe we need a good trail that is not so seckuded
Screen Name Redacted 4/24/2021 12:14 PM	Chatham
Screen Name Redacted 4/24/2021 01:07 PM	Bike/walking trail around the river king George and water street
Screen Name Redacted 4/24/2021 01:48 PM	Sunny corner
Screen Name Redacted 4/24/2021 04:34 PM	Retirement miramichi
Screen Name Redacted 4/24/2021 04:41 PM	Chatham side of river needs more and safer walking/Cycling side of road paths
Screen Name Redacted 4/24/2021 04:43 PM	All
Screen Name Redacted 4/24/2021 06:43 PM	Provide dog poop bags, better lights
Screen Name Redacted 4/24/2021 07:22 PM	Water st. from Chatham head t o loggieville is a beautiful riverside view, we should utilize this with a

	wide shoulder for
Screen Name Redacted 4/24/2021 07:48 PM	Waterfront
Screen Name Redacted 4/24/2021 08:06 PM	I would just like to see new trails that could link to trails such as french fort cove, a waterfront trail would be ideal
Screen Name Redacted 4/24/2021 08:09 PM	Shore road
Screen Name Redacted 4/24/2021 08:42 PM	Waterfront in Newcastle, Chatham head and bridges
Screen Name Redacted 4/25/2021 05:19 AM	Douglas town
Screen Name Redacted 4/25/2021 05:32 AM	A paved waterfront network trail, that links both sides of the river.
Screen Name Redacted 4/25/2021 06:04 AM	More sidewalks in the city. Ridiculous how many main streets in the city have little to no side walks
Screen Name Redacted 4/25/2021 06:13 AM	The end goal would be to have the entire city connected
Screen Name Redacted 4/25/2021 06:44 AM	French Fort Cove Strawberry Marsh
Screen Name Redacted 4/25/2021 07:56 AM	everywhere
Screen Name Redacted 4/25/2021 08:29 AM	All around the river
Screen Name Redacted 4/25/2021 10:18 AM	I
Screen Name Redacted 4/25/2021 10:29 AM	Trails created and linked around the river and into business/shopping districts
Screen Name Redacted 4/25/2021 10:30 AM	Trails around the city.

Screen Name Redacted 4/25/2021 10:56 AM	Outdoor gym equipment would be excellent, like they have in riverview.. Help those who can't afford gym membership
Screen Name Redacted 4/25/2021 04:36 PM	King George Highway and Water Street from Newcastle to Douglastown and Chatham to Nelson
Screen Name Redacted 4/25/2021 04:55 PM	Nelson , Newcastle , Chatham
Screen Name Redacted 4/25/2021 06:24 PM	Link Newcastle to chatam and off road through city to avoid traffic.
Screen Name Redacted 4/25/2021 06:24 PM	Water street needs a trail along it or a sidewalk, please.
Screen Name Redacted 4/25/2021 06:27 PM	French fort cove to Beaverbrook
Screen Name Redacted 4/25/2021 06:54 PM	Big Potential to to link an overall Trail System. For example from Okeefe Road to French fort Cove and then to Strawberry Marsh. From Chatham side from the loggieville trail to the Retirement Miramichi Trail - Then a path via Resevor to Nelson Ski Clu
Screen Name Redacted 4/25/2021 07:21 PM	Anything would help
Screen Name Redacted 4/25/2021 07:28 PM	It would be great to be able to circle the city. To go from Strawberry Marsh through to Ritchie Wharf, over to Douglastown (perhaps with Range road being used). To go from there out to Gordon's wharf and safely to Chattham to link to Loggieville & Nelson.
Screen Name Redacted 4/25/2021 07:51 PM	1. Chaplin Island Road-Strawberry Marsh-Ritchie Warf-Douglastown-Gordons Warf 2. Nelson-Chatham 3. Connect 1 to2 similar to Moncton and Fredericton. Might make our place more attractive to new people and might help locals become more

Screen Name Redacted 4/25/2021 08:10 PM	active.
Screen Name Redacted 4/25/2021 08:19 PM	Throughout the City is a necessity and trail to connect both sides of the City.
Screen Name Redacted 4/25/2021 08:28 PM	From Chatham to Newcastle
Screen Name Redacted 4/25/2021 08:28 PM	There's lot of areas in Douglastown that would be a great place for trails. I often walk on the snowmobile trails in the summer (by NBCC) but it would be amazing to have some a designated walking trails nearby.
Screen Name Redacted 4/26/2021 04:24 AM	Side trail around waterfront circling down from Chatham Head to Centennial bridge. Around and up to Newcastle. To make a complete circle around the water. This would encourage commuting and exercise in our community. People do what they see.
Screen Name Redacted 4/26/2021 05:12 AM	Nelson, especially Sutton road, requires side walks for safety. We also need an improved and safer crosswalk at the intersection of Sutton road and Nelson street.
Screen Name Redacted 4/26/2021 06:01 AM	Link the trails across the river, bike lanes needed on King George highway very u
Screen Name Redacted 4/26/2021 06:17 AM	The area across from french fort cove could be a nice spot with a new look out towards the left side. The only problem is traffic is so bad to try and cross from french fort cove is a nightmare.we usually use the tiny parking lot full of venders.
Screen Name Redacted 4/26/2021 07:13 AM	Strawberry marsh
Screen Name Redacted 4/26/2021 07:16 AM	ANY additional trails would be great. Waterfront obviously ideal. ANY trails that are linked up would be great.
Screen Name Redacted	A paved section of the Miramichi

4/26/2021 08:09 AM	cross country Ski trails would be a great asset for the people of this city.
Screen Name Redacted	Need trails for ATV (side by side).
4/26/2021 08:44 AM	Winter and summer
Screen Name Redacted	Along water
4/26/2021 08:47 AM	
Screen Name Redacted	Middle island to main trails, French fort cove to strawberry
4/26/2021 09:15 AM	
Screen Name Redacted	make miramichi trail friendly for example like ottawa
4/26/2021 12:49 PM	
Screen Name Redacted	Biking
4/26/2021 01:38 PM	

Optional question (189 response(s), 151 skipped)

Question type: Single Line Question

APPENDIX III: DRAFT CODE OF CONDUCT

TRAIL CODE OF CONDUCT

City of Miramichi- Joint-Use Trails

This Code of Conduct pertains to all Joint-Use trails within the city of Miramichi shared by non-motorized user and Quad vehicles or Snowmobiles.

We ask that all trail users enjoy the trail while being respectful to other trail users, private land owners, and the environment. Please follow our Trail Use Code of Conduct while on the trail.

- Non-motorized users have the right-of-way at all times.
- Respect the privacy of people living along the trail.
- Respect neighbouring property by staying on the designated. Do not make new trails or traverse on unmarked and unauthorized trails.
- Expect and respect other trail users, and obey trail signs
- Stay to the right of trail and pass on the left
- Alert slower moving users to your presence, slow down and proceed with caution as you pass them
- Bike riders yield to hikers/ walkers; ATV/Snowmobile users yield to all
- Motorcycles, of any kind, are not allowed on the trail.
- Obey all barricades and closures along the trail.
- If you and/or your mode of transportation produces over 10cm of track depth, do not use the joint-use trail. This will occur most frequently in the Spring and Fall or after a heavy rain.
- Motorized vehicles (other than snowmobiles with a valid New Brunswick Federation of Snowmobile Clubs [NBFSC] permit) are prohibited in the winter season
- Please keep pets on a leash at all times; Clean up after pets
- Do not block trail entrances or park on the trail at any time
- Leave the trail cleaner than you found it - Please carry out litter
- Obey all Federal, Provincial, and Municipal regulations pertaining to the operation of your mode of transportation (including, but not limited to, licensing, insurance, age limits, and vehicle condition).

APPENDIX IV: OPINION OF PROBABLE COSTS

Opinion of Cost (Class D)

2051 MIRAMICHI ACTIVE TRANSPORTATION PLAN

Prepared: July 2021

GLENN GROUP LTD.



Item	Qty.	Unit	Unit Cost	Item Cost
WATERFRONT LOOP TRAIL				
Accessible Shoulder- KG Hwy.	6.8	km	\$ 50,000.00	\$ 340,000.00
Accessible Shoulder- French Fort Rd.	2.4	km	\$ 50,000.00	\$ 120,000.00
Accessible Shoulder- Water St.	14.0	km	\$ 50,000.00	\$ 700,000.00
Accessible Shoulder- Old Ferry Rd to Fraser St.	1.2	km	\$ 50,000.00	\$ 60,000.00
Crusher Dust Multi-Use Trail- Goat St. to Dirt Rd.	0.4	km	\$ 17,000.00	\$ 6,800.00
Refurbishment of Lagoon Trail	0.8	km	\$ 15,000.00	\$ 11,250.00
Waterfront (former Anderson Mill Property)	0.8	km	\$ 17,000.00	\$ 12,750.00
Bridge Connection from Miramichi Bridge to Lagoon	0.1	km	\$ 50,000.00	\$ 5,000.00
			Subtotal	\$ 1,255,800.00
			** Contingency (10%)	\$ 125,580.00
			Subtotal	\$ 1,381,380.00
			Soft Costs (15%)	\$ 207,207.00
			Subtotal	\$ 1,588,587.00
			Hst	\$ 238,288.05
			TOTAL	\$ 1,826,875.05

Item	Qty.	Unit	Unit Cost	Item Cost
SECONDARY TRAILS				
Accessible Shoulder-St Patrick's Drive	4.4	km	\$ 50,000.00	\$ 220,000.00
Asphalt Sidewalk- Alexis St	300.0	lm	\$ 120.00	\$ 36,000.00
			Subtotal	\$ 256,000.00
			** Contingency (10%)	\$ 25,600.00
			Subtotal	\$ 281,600.00
			Soft Costs (15%)	\$ 42,240.00
			Subtotal	\$ 323,840.00
			Hst	\$ 48,576.00
			TOTAL	\$ 372,416.00

Item	Qty.	Unit	Unit Cost	Item Cost
PAVED TRAILS				
Chatham to Loggville- (Hwy 11 to Water St.)	3.4	km	\$ 70,000.00	\$ 238,000.00
Chatham to Loggville- (Waterford Green to Dirt Rd.)	1.8	km	\$ 70,000.00	\$ 126,000.00
Chatham to Loggville- (Dirt Rd. to Wellington St. @ Lebreton Dr.)	2.0	km	\$ 70,000.00	\$ 140,000.00
MCCSC Walking Loop 1 km	1.0	km	\$ 70,000.00	\$ 70,000.00
MCCSC Walking Loop +1.5 km	0.5	km	\$ 70,000.00	\$ 35,000.00
MCCSC Walking Loop +2 km	0.5	km	\$ 70,000.00	\$ 35,000.00
MCCSC Walking Loop +2.5 km	0.5	km	\$ 70,000.00	\$ 35,000.00
MCCSC Walking Loop +3 km	0.5	km	\$ 70,000.00	\$ 35,000.00
MCCSC Walking Loop +4 km	1.0	km	\$ 70,000.00	\$ 70,000.00
			Subtotal	\$ 784,000.00
			** Contingency (10%)	\$ 78,400.00
			Subtotal	\$ 862,400.00
			Soft Costs (15%)	\$ 129,360.00
			Subtotal	\$ 991,760.00
			Hst	\$ 148,764.00
			TOTAL	\$ 1,140,524.00
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WATER TRAIL

Item	Qty.	Unit	Unit Cost	Item Cost
STRAWBERRY MARSH- PWC LAUNCH				
Gravel launch	1	ea	\$ 2,000.00	\$ 2,000.00
Access road remediation- gravel	250	lm	\$ 80.00	\$ 20,000.00
Kayak locker	1	ea	\$ 5,000.00	\$ 5,000.00
Trail Marker	1	ea	\$ 150.00	\$ 150.00
Information Kiosk with Map	1	ea	\$ 2,500.00	\$ 2,500.00
Safety Sign	1	ea	\$ 150.00	\$ 150.00
			Subtotal	\$ 29,800.00
			** Contingency (10%)	\$ 2,980.00
			Subtotal	\$ 32,780.00
			Soft Costs (15%)	\$ 4,917.00
			Subtotal	\$ 37,697.00
			Hst	\$ 5,654.55
			TOTAL	\$ 43,351.55

Item	Qty.	Unit	Unit Cost	Item Cost
RITCHIE WHARF- PWC LAUNCH				
Kayak locker	1	ea	\$ 5,000.00	\$ 5,000.00
Accessible Kayak Dock	1	ea	\$ 25,000.00	\$ 25,000.00
Trail Marker	1	ea	\$ 150.00	\$ 150.00
Information Kiosk with Map	1	ea	\$ 2,500.00	\$ 2,500.00
Safety Sign	1	ea	\$ 150.00	\$ 150.00
			Subtotal	\$ 32,800.00
			** Contingency (10%)	\$ 3,280.00
			Subtotal	\$ 36,080.00
			Soft Costs (15%)	\$ 5,412.00
			Subtotal	\$ 41,492.00
			Hst	\$ 6,223.80
			TOTAL	\$ 47,715.80

MIRAMICHI BOATING + YACHT CLUB (PRIVATE)

Item	Qty.	Unit	Unit Cost	Item Cost
Trail Marker	1	ea	\$ 150.00	\$ 150.00
Information Kiosk with Map	1	ea	\$ 2,500.00	\$ 2,500.00
Safety Sign	1	ea	\$ 150.00	\$ 150.00
			Subtotal	\$ 2,800.00
			** Contingency (10%)	\$ 280.00
			Subtotal	\$ 3,080.00
			Soft Costs (15%)	\$ 462.00
			Subtotal	\$ 3,542.00
			Hst	\$ 531.30
			TOTAL	\$ 4,073.30

STATION WHARF- PWC LAUNCH

Item	Qty.	Unit	Unit Cost	Item Cost
Gravel Boat launch	1	ea	\$ 2,000.00	\$ 2,000.00
Kayak locker	1	ea	\$ 5,000.00	\$ 5,000.00
Trail Marker	2	ea	\$ 150.00	\$ 300.00
Information Kiosk with Map	2	ea	\$ 2,500.00	\$ 5,000.00
Safety Sign	2	ea	\$ 150.00	\$ 300.00
			Subtotal	\$ 12,600.00
			** Contingency (10%)	\$ 1,260.00
			Subtotal	\$ 13,860.00
			Soft Costs (15%)	\$ 2,079.00
			Subtotal	\$ 15,939.00
			Hst	\$ 2,390.85
			TOTAL	\$ 18,329.85

Item	Qty.	Unit	Unit Cost	Item Cost
FRASER ST. - PWC LAUNCH				
Access road (7m wide)	50	lm	\$ 160.00	\$ 8,000.00
Gravel Parking Lot (4 stalls)	1	ea	\$ 3,000.00	\$ 3,000.00
Gravel Launch	1	ea	\$ 2,000.00	\$ 2,000.00
Kayak locker	1	ea	\$ 5,000.00	\$ 5,000.00
Trail Marker	1	ea	\$ 150.00	\$ 150.00
Information Kiosk with Map	1	ea	\$ 2,500.00	\$ 2,500.00
Safety Sign	1	ea	\$ 150.00	\$ 150.00
			Subtotal	\$ 20,800.00
			** Contingency (10%)	\$ 2,080.00
			Subtotal	\$ 22,880.00
			Soft Costs (15%)	\$ 3,432.00
			Subtotal	\$ 26,312.00
			Hst	\$ 3,946.80
			TOTAL	\$ 30,258.80

Item	Qty.	Unit	Unit Cost	Item Cost
MIDDLE ISLAND- PWC LAUNCH				
Trail Marker	1	ea	\$ 150.00	\$ 150.00
Information Kiosk with Map	1	ea	\$ 2,500.00	\$ 2,500.00
Safety Sign	1	ea	\$ 150.00	\$ 150.00
			Subtotal	\$ 2,800.00
			** Contingency (10%)	\$ 280.00
			Subtotal	\$ 3,080.00
			Soft Costs (15%)	\$ 462.00
			Subtotal	\$ 3,542.00
			Hst	\$ 531.30
			TOTAL	\$ 4,073.30

Item	Qty.	Unit	Unit Cost	Item Cost
WILSONS POINT- PWC + BOAT LAUNCH				
Trail Marker	1	ea	\$ 150.00	\$ 150.00
Information Kiosk with Map	1	ea	\$ 2,500.00	\$ 2,500.00
Safety Sign	1	ea	\$ 150.00	\$ 150.00
			Subtotal	\$ 2,800.00
			** Contingency (10%)	\$ 280.00
			Subtotal	\$ 3,080.00
			Soft Costs (15%)	\$ 462.00
			Subtotal	\$ 3,542.00
			Hst	\$ 531.30
			TOTAL	\$ 4,073.30

Item	Qty.	Unit	Unit Cost	Item Cost
BEAUBEAR'S ISLAND- DOCK + PWC LAUNCH				
Trail Marker	1	ea	\$ 150.00	\$ 150.00
Information Kiosk with Map	1	ea	\$ 2,500.00	\$ 2,500.00
Safety Sign	1	ea	\$ 150.00	\$ 150.00
			Subtotal	\$ 2,800.00
			** Contingency (10%)	\$ 280.00
			Subtotal	\$ 3,080.00
			Soft Costs (15%)	\$ 462.00
			Subtotal	\$ 3,542.00
			Hst	\$ 531.30
			TOTAL	\$ 4,073.30

Item	Qty.	Unit	Unit Cost	Item Cost
GORDON'S WHARF- PWC + POWER BOAT LAUNCH				
Trail Marker	1	ea	\$ 150.00	\$ 150.00
Information Kiosk with Map	1	ea	\$ 2,500.00	\$ 2,500.00
Safety Sign	1	ea	\$ 150.00	\$ 150.00
			Subtotal	\$ 2,800.00
			** Contingency (10%)	\$ 280.00
			Subtotal	\$ 3,080.00
			Soft Costs (15%)	\$ 462.00
			Subtotal	\$ 3,542.00
			Hst	\$ 531.30
			TOTAL	\$ 4,073.30

Item	Qty.	Unit	Unit Cost	Item Cost
Highway 8/ Water St. Roundabout Crosswalk				
Crusher Dust Multi-Use Trail	0.7	km	\$ 17,000.00	\$ 11,900.00
Bike Accessible Shoulder	0.3	km	\$ 50,000.00	\$ 15,000.00
RRFB Crosswalk	2.0	ea	\$ 2.00	\$ 4.00
Culvert	3.0	ea	\$ 3.00	\$ 9.00
Finish Grading	900.0	m2	\$ 3.50	\$ 3,150.00
Sod and Topsoil	900.0	m2	\$ 15.00	\$ 13,500.00
			Subtotal	\$ 43,563.00
			** Contingency (10%)	\$ 4,356.30
			Subtotal	\$ 47,919.30
			Soft Costs (15%)	\$ 7,187.90
			Subtotal	\$ 55,107.20
			Hst	\$ 8,266.08
			TOTAL	\$ 63,373.27

Item	Qty.	Unit	Unit Cost	Item Cost
CENTENNIAL BRIDGE APPROACHES				
Crusher Dust Multi-Use Trail	0.1	km	\$ 17,000.00	\$ 1,700.00
Concrete Sidewalk	300.0	km	\$ 240.00	\$ 72,000.00
Signed Crosswalk	1.0	ea	\$ 2,000.00	\$ 2,000.00
RRFB Crosswalk	1.0	ea	\$ 20,000.00	\$ 20,000.00
			Subtotal	\$ 95,700.00
			** Contingency (10%)	\$ 9,570.00
			Subtotal	\$ 105,270.00
			Soft Costs (15%)	\$ 15,790.50
			Subtotal	\$ 121,060.50
			Hst	\$ 18,159.08
			TOTAL	\$ 139,219.58
*represents approaches only, bridge by DTI				

Item	Qty.	Unit	Unit Cost	Item Cost
HIGHWAY 11/ KING ST. CROSSING				
Buffered sidewalk	1250.00	lm	\$ 240.00	\$ 300,000.00
Concrete Sidewalk	50.00	lm	\$ 240.00	\$ 12,000.00
concrete curb	1300.00	lm	\$ 100.00	\$ 130,000.00
Signed Crosswalk	2.00	ea	\$ 2,000.00	\$ 4,000.00
RRFB Crosswalk	1.00	ea	\$ 20,000.00	\$ 20,000.00
			Subtotal	\$ 466,000.00
			** Contingency (10%)	\$ 46,600.00
			Subtotal	\$ 512,600.00
			Soft Costs (15%)	\$ 76,890.00
			Subtotal	\$ 589,490.00
			Hst	\$ 88,423.50
			TOTAL	\$ 677,913.50
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FACILITY UNIT COSTS

Item	Unit	Unit Cost
TRAILS		
3m wide Crusher Dust Trail	km	\$ 17,000.00
3m wide Paved Trail	km	\$ 70,000.00
1.8m Paved Shoulder	km	\$ 120,000.00
Pave Existing Shoulder	km	\$ 50,000.00
2 Lane Road (RLU 80)	km	\$ 1,100,000.00
Concrete Sidewalk	lm	\$ 240.00
Asphalt Sidewalk	lm	\$ 120.00
Concrete Curb	lm	\$ 100.00
CROSSWALKS		
Signed Crosswalk	ea	\$ 2,000.00
RRFB Crosswalk	ea	\$ 20,000.00
Crosswalk with Overhead Lights	ea	\$ 45,000.00
WATER TRAIL		
Boat Ramp- Gravel	ea	\$ 2,000.00
Boat Launch- Dock	ea	\$ 5,000.00
Accessible Kayak Launch	ea	\$ 25,000.00
Kayak Locker	ea	\$ 5,000.00
Trail Marker	ea	\$ 150.00
Information Kiosk with Map	ea	\$ 2,500.00
Safety Sign	ea	\$ 150.00
No Wake Bouys (with anchor)	ea	\$ 2,000.00



APPENDIX V: ENDNOTES

- 1 City of Miramichi Municipal Plan, Page 37
- 2 City of Miramichi Municipal Plan, page 39
- 3 City of Miramichi Municipal Plan, page 79
- 4 City of Miramichi Municipal Plan, Page 48
- 5 Taken from "Interim Report Structural Assessment of Morrissey Bridge Newcastle, 2008 Valron Engineering p.3

