

**REGION OF QUEENS MUNICIPALITY
SPECIAL COUNCIL
MONDAY, MAY 30, 2016
9:00 A.M.**

PRESENT: Mayor Christopher Clarke, Chair
Councillor Darlene Norman
Councillor Bruce Inglis
Councillor Brian Fralic
Councillor Susan MacLeod
Councillor Raymond Fiske
Councillor Jack Fancy
Councillor Peter Waterman
Richard MacLellan, Chief Administrative Officer
April Whynot-Lohnes, Municipal Clerk
Christine Watson, Recording / Management Secretary

1.0 CALL TO ORDER:

Mayor Clarke called the meeting to order at 9:00 a.m.

2.0 CHANGES / APPROVAL OF AGENDA:

It was moved by Councillor Waterman and seconded by Councillor Inglis that the Agenda be approved with the following additions:

Add: Public Question / Comment Session

Add: Item 3.2 Best Western Plus Liverpool Hotel Request

MOTION CARRIED unanimously.

PUBLIC QUESTION / COMMENT SESSION:

Leon Robertson, 45 College Street, Liverpool – Mr. Robertson enquired under Item 3.1 Trestle Trail Bridge if the proposed \$750,000 funding has been approved already to which Mayor Clarke stated it has not and that the motions will give direction to staff to apply for funding.

Mr. Robertson also asked for confirmation if the proposal is accepted, for the trail to be used as a shared use trail, to which Mayor Clarke confirmed yes.

David Dagley, 9 Meadow Pond Lane, Liverpool – Mr. Dagley stated that in previous council discussions concerning the costs to repair the Trestle Trail Bridge, the costs was in the range of \$1 million and would not be known until Phase II was completed. He enquired how the Region determined the amount of \$750,000 as stated in the report. Mayor Clarke indicated that the funding would be discussed during the presentation by the CAO.

3.0 OTHER:

3.1 Trestle Trail Bridge

It was moved by Councillor Inglis and seconded by Councillor Fancy:

THAT the Council of the Region of Queens Municipality:

- 1. Approve, in principle, the Queens County Shared Use Trail Feasibility and Master Plan, as contained in Attachment One of this report; and**
- 2. Direct staff to prepare funding applications for the remedy of the Trestle Trail Bridge as outlined in the Discussion Section of this Report.**

Richard MacLellan, CAO, gave a presentation on the Trestle Trail Bridge: Shared Use (copy attached to original set of Minutes).

Highlights included:

- Background – Region became owners in 1996 and converted to pedestrian bridge in 1999.
- Engineering Studies – Done on April 13, 1999, June 26, 2002 and November 24, 2014, and showed photographs showing the deterioration of the piers.
- Reviewed recommendations – visual report from AMEC to have pedestrians and all types of vehicles to be prevented from using the bridge until further analyses.
- Council direction on February 24 and March 10, 2015 meetings; discussions with the community for alternative suggestions for trail use as well as funding partners.
- Ultimate choices were reviewed – repair or remove the bridge
- October 13, 2015 staff was directed to investigate financial assistance.
- Options to reconsider policy direction regarding shared use trails; to begin preliminary discussions with ACOA, Off Highway Vehicle Fund and Provincial staff.
- Explained \$750,000 was for preliminary discussions as per the costing of the repair work for the French River Bridge (could be more or less).
- The benefits of having a shared use trail, i.e. economic, environmental and social.
- Possible available funding i.e. Off Highway, ACOA Infrastructure Funding, other levels of government.
- Public Engagement – If approval given, staff will work with stakeholders, i.e. Rails to Trails Association, to develop detailed implementation plans.

Council voiced their support for the motion as presented, but noted that there will need to be public consultation as concerns in the past were raised related to noise and safety, in particular the areas near development and the numerous road crossings. Mr. MacLellan confirmed that with the approval of the recommendations, it would allow staff to prepare funding applications from Atlantic Canada Opportunities Agency (ACOA), Nova Scotia Off Highway Vehicles Fund and the Province of Nova Scotia, as the Region is unable to fund this project on its own.

With the approval of the trails plan, access of Off Highway Vehicles on the trail will create connectivity between Lunenburg and Shelburne, as presently ATVs are not allowed on many sections of this trail i.e. the Trestle Trail Bridge. With the implementation of a shared use trail, roles and responsibilities will need to be clarified as there are multiple stakeholders and land owners involved.

MOTION CARRIED unanimously.

3.2 Best Western Plus Liverpool Hotel & Conference Centre

It was moved by Councillor Norman and seconded by Councillor Fralic:

THAT the Council of the Region of Queens Municipality request staff to work with Best Western Plus Liverpool Hotel & Conference Centre on a temporary arrangement in response to their letter of May 27, 2016 requesting permission to incorporate landscaping in a strip of land eight (8) feet wide and three hundred and seventy-five (375) feet in length on the adjacent developable land (PID #70260203).

Jill Cruikshank, Economic Development Officer, stated that a letter had been received from Best Western Plus Liverpool Hotel & Conference Centre asking to landscape on a small strip of land owned by the Region, to improve the esthetic view. There will be no cost to the region, if Council agrees to the request.

MOTION CARRIED unanimously.

4.0 IN-CAMERA

It was moved by Councillor MacLeod and seconded by Councillor Fiske that the proceedings go “In-Camera” at 9:54 a.m. to discuss the following:

4.1 In-Camera, Personnel Matter, MGA 22(2)c

MOTION CARRIED unanimously.

It was moved by Councillor Fancy and seconded by Councillor Fiske that the proceedings come out of "In-Camera" at 10:28 a.m.

MOTION CARRIED unanimously.

4.1 Personnel Matter

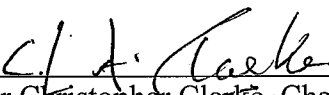
It was moved by Councillor Fralic and seconded by Councillor Fancy:

THAT the Council of the Region of Queens Municipality submit a Letter of Intent to the Department of Communities, Culture, and Heritage indicating its commitment to the Municipal Physical Activity Leadership Program for a five-year period and allot \$10,000 from the 2016-17 fiscal year for the Physical Activity Coordinator's salary position beginning in September.

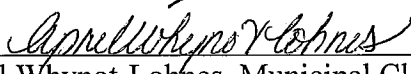
MOTION CARRIED with 7 in favor and 1 against.

5.0 **ADJOURNMENT**

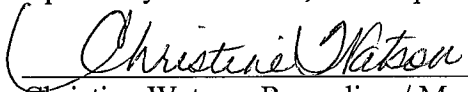
There being no further business, the meeting adjourned at 10:30 a.m.



Mayor Christopher Clarke, Chair

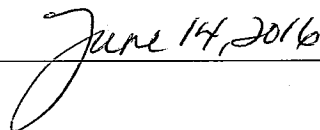


April Whynot-Lohnes, Municipal Clerk



Christine Watson, Recording / Management Secretary

Date Approved:



June 14, 2016

Recommendation Report: Trestle Trail Bridge

Submitted by: Richard MacLellan, Chief Administrative Officer

Origin: Funding Options, Trestle Trail Bridge

Legislative Authority: Municipal Government Act, Part IV, Finance, Power to expend money, 65, (ag)

Recommendation: *It is recommended that the Council of the Region of Queens Municipality:*

1. *Approve, in principle, the Queens County Shared Use Trail Feasibility and Master Plan, as contained in Attachment One of this report; And,*
2. *Direct staff to prepare funding applications for the remedy of the Trestle Trail Bridge as outlined in the Discussion Section of this Report.*

Background: In November 2014, following inspection of the bridge, and the resulting recommendations from the engineering firm, the Trestle Trail Bridge was closed.

In October 2015, staff provided an update to Council on work on the bridge. It was presented that a large project is facing Region of Queens Municipality. Either the bridge needs to be repaired or it will need to be removed. . The direction from Council was to undertake efforts to identify potential funding solutions.

Discussion: Staff have investigated funding solutions. The strongest candidate appears to be an application which would seek funding from Atlantic Canada Opportunities Agency, Nova Scotia Off Highway Vehicles Fund, and the Province of Nova Scotia (as well as participation from the Region of Queens Municipality).

For purposes of conversation, seeking potential eligibility, the following funding schedule has been proposed:

Total Project Value	\$750,000
ACOA	\$375,000
Off Highway Vehicles Fund	\$150,000
Province of Nova Scotia	\$25,000 to \$75,000
Region of Queens Municipality	\$150,000 to \$200,000

Indications are that the funding schedule is conceivable.

The prerequisite would be the approval of a trails plan that allows access of Off Highway Vehicles on the trail, creating connectivity between Lunenburg and Shelburne. Currently, ATVs are not allowed on many sections of this trail, particularly the Trestle Trail Bridge. As such, without it – funding could not be proposed.

The general benefits of approving a shared use trail plan are:

- **Economic:** This trail would provide connectivity for off highway vehicles from Lunenburg to Shelburne. Currently, ATV's are unable to make this trip due to the distance between fuel stations and capacity to carry fuel. As such, the new trail connectivity would provide direct and indirect tourism dollars. The Report on Direct Spending, Attachment Two, overviews the potential economic benefit to the Region.
- **Environmental:** The trail provides an active transportation solution, recreational amenity, and increased access to the natural environment.
- **Social:** The trail provides connectivity for residents, particularly from Milton / Main Street area to the centre where grocery stores are located.

The progress from a restricted use trail to a shared use trail may have dissenting views from the public. In 2012, the Council of the Region of Queens Municipality rejected the proposed plan.

Benefits of Shared Use Trail:

- Accommodates needs of the most users
- Disperses users across system
- Builds trail community
- Unites users to cooperate to preserve and protect a common resource
- Encourage responsible experienced users to educate
- Offers the opportunity to meet and establish mutual respect and courtesy
- Most cost effective trails for land managers
- Requires less resources for monitoring and enforcement
- Requires fewer signs
- Provides opportunity for bigger joint force voluntary trail crews
- Increase peer regulation of the shared resource

In the case of the Trestle Trail Bridge, the decision to change the policy direction of the asset will change the potential user group from approximately 180 homes and tourist residents visiting town to a regional catchment area and connectivity of tourism opportunities across the entire region, connecting from Lunenburg to Shelburne. From a funding aspect, the broadening of the catchment area from a local recreational or limited active transportation asset to a regional asset makes the case for funding from much more logical. Funding the restoration of the Trestle Trail Bridge from an area rate is not feasible. More users = more value = more funding options.

Approval, in principle, of the Shared Use Trail Feasibility and Master Plan: With the long term implementation of a shared use trail, there are multiple stakeholders, land owners, and roles and responsibilities to be clarified. The purpose of the Approval in Principle is to give staff the overarching strategic direction to work with stakeholders.

Next steps will include development of an agreement with the Trails Association and development of funding applications and development of a project to renew the Trestle Trail Bridge as required for reopening.

Potential Funding Sources:

Off Highway Vehicles Fund

<http://novascotia.ca/natr/ohv/fund.asp>

Goals of the OHV Infrastructure Fund (Trails) are:

- to provide funding for OHV trail and riding area development
- to support the planning and design associated with these facilities
- to provide funding to help maintain OHV accessible infrastructure

ACOA

Canada 150 Community Infrastructure Program: <http://www.acoa->

[apeca.gc.ca/eng/ImLookingFor/ProgramInformation/Pages/Canada-150-Infrastructure-Program.aspx](http://www.acoa-apeca.gc.ca/eng/ImLookingFor/ProgramInformation/Pages/Canada-150-Infrastructure-Program.aspx)

The Canada 150 Community Infrastructure Program (CIP 150) supports projects that rehabilitate existing community facilities across Canada. The program is part of the Government of Canada's celebration of our country's 150th anniversary of Confederation. The program will be in effect until March 31, 2018.

Province of Nova Scotia <http://novascotia.ca/dhw/pasr/grants-and-incentives.asp>

Trail funding programs provide support to trail groups who are involved in all aspects of trail development; from regular trail maintenance and emergency trail repair, to building leadership capacity to building large structures that require engineering expertise.

The Trail Maintenance Program provides funding to community trail groups who are involved in regular and on-going maintenance on their trails, as well as emergency funding for major maintenance issues due to fire, flooding, hurricanes, etc.

The Community Trails Leadership Fund supports trail development in Nova Scotia through the provision of funds for leadership, organizational development, and capacity building to community trail groups. The fund helps organizations to offer training and educational opportunities for volunteers and the trail professionals who support them. It also helps the organizations acquire the expertise needed for specific aspects of trail projects.

The Engineering Assistance Grant Program is designed to provide trail builders and managers with funding to help them hire engineering expertise when it is required. This could include the building of bridges or other large structures or components that require expertise to ensure they are safe and pose no risk to the environment.

Public Engagement Plan: With the approval in principle, the direction from council is established. Staff will be able to work with stakeholders, particularly Queens Rails to Trails Association, to develop more detailed implementation plans to achieve the connectivity of the trail as per the master plan.

Financial Implications: Currently there are no funds established for the remedy of the Trestle Trail Bridge. Development of projects will impact future year budgets.

Attachments:

1. Queens County Shared Use Trail Feasibility and Master Plan
2. Off Highway Vehicle, Report on Direct Spending

Alternatives:

- Council may choose to not approve the plan in principle

Report Author: Richard MacLellan

CAO Approval:

A handwritten signature in black ink, appearing to read 'R. MacLellan', is written over the 'CAO Approval:' text.



Queens County Shared Use Trail

Feasibility and Master Plan

Final Report



EKISTICS PLANNING & DESIGN

Queens County Shared Use Trail
Feasibility and Master Plan

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EKISTICS PLANNING & DESIGN Spring 2012



1: Origins

A shared use trail is designed to accommodate multiple users. In some circumstances these users may be motorized or not; the commonality lies in promoting access to the trail for a variety of user groups. Developing a shared use trail is a complicated undertaking, as it must consider not only the physical design of the trail, which must be maximized to accommodate multiple user groups, but also the policy decisions required to manage the trail in perpetuity. As such, a shared use trail master plan is really a vision of how a trail might work. In order to achieve that vision, a public process oriented approach must be taken, to ensure that the resulting plan reflects the needs and wants of not only the anticipated trail users, but the entire community. This master plan documents one community's journey towards that vision.



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Queens County Shared Use Trail Feasibility and Master Plan

1.1 PURPOSE OF THE PLAN

In response to numerous discussions between the Queens County All Terrain Vehicle Association (QCATVA) and the Region of Queens Municipality (RQM), the QCATV commissioned Ekistics Planning and Design to undertake a comprehensive planning study examining the feasibility of a shared use trail across Queens County. Specifically, the study will fulfill the following objectives:

- Examples of motorized and non-motorized trail users sharing trails and whether separation is a necessary safety concern.
- Operating hours that are reasonable and speak to safety.
- Route layout from the Lunenburg - Queens County Line to the Queens - Shelburne County Line.
- Schematic design to illustrate trail design to access the Trestle Trail Bridge on the Eastern End.
- Options for access to the Western End of the Trestle Trail Bridge including highway usage.
- Projected costs associated with an engineering certification of the Trestle Trail Bridge deck, rails and abutments to ensure safety and integrity.
- A policy and management strategy to ensure use of the trail is restricted to All Terrain Vehicle Association of Nova Scotia permit holders.
- Speed control measures.
- General trail construction guidelines and measures.
- General maintenance guidelines.
- Proposal(s) should take into account not only what is being done in Nova Scotia but also include proactive examples of what is being done in other jurisdictions to deal with similar situations.
- Liability insurance coverage provided by the Queens County ATV Association.

The resulting Queens County Shared Use Trail Feasibility and Master Plan builds upon the goals and objectives identified by the QCATVA and information compiled from other engaged groups to establish an objective and comprehensive approach to evaluate the feasibility of this trail development. Community consultation including stakeholder interviews, public forums, direct consultation, and an online survey helped to develop an understanding of the context and the history of the project. Background and best practices research outlined the technical aspects of the project, and an economic impact assessment provided a brief overview of the broader implication of this development. A summary of the process, context, and findings are included in the following sections.

1.2 STUDY PROCESS

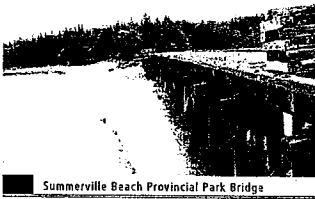
This report was prepared by Ekistics Planning & Design (in association with SNC-Lavalin, and Solutions Inc), and is the culmination of a 4 month transportation planning and urban design process commissioned by the Queens County ATV Association.

The resulting Queens County Shared Use Trail Feasibility and Master Plan is reflective of the ideas and community dialogue heard throughout this project. The vision for the Plan came into focus during a series of stakeholder interviews and public workshops, where participants identified and agreed upon specific issues to address. The need for the QCATVA, the Municipality, and the various stake-holders to come together and work collectively toward similar goals was seen as the best way to successfully address these issues and move a vision forward. This collection of voices ultimately spoke to the need for a plan that would allow the stakeholder groups to champion their ideas.

This study was organized into four phases that were framed by a public engagement process, and designed to generate a new vision for the future of trail development in Queens County, in collaboration with a wide range of stake-holders.



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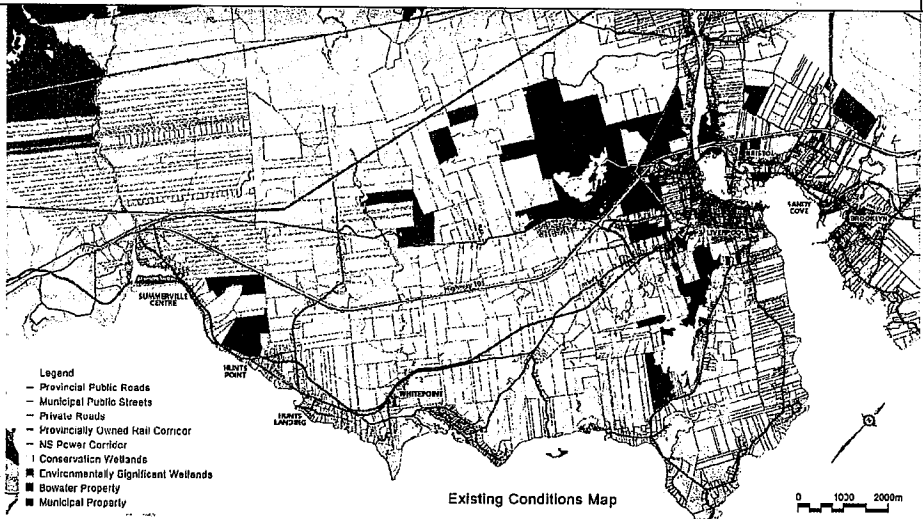
Summerville Beach Provincial Park Bridge



Trestle Trail Bridge



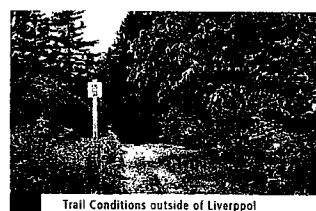
Existing Rail Bed Corridor in Liverpool



Existing Conditions Map



Trail Conditions outside of Liverpool



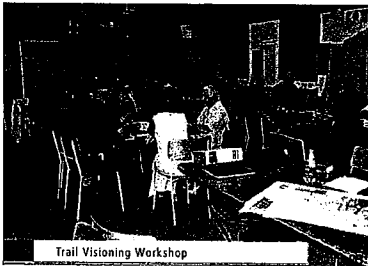
Trail Conditions outside of Liverpool



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3

Queens County Shared Use Trail Feasibility and Master Plan



Trail Visioning Workshop



Trail Visioning Workshop



Phase 1: Understanding and Information Gathering

Phase one began with a project initiation meeting in August 2011 where the Consultant Team met with members of the Queens County ATV Association to review the timeline, deliverables, and protocol of the study. A site visit was completed, looking at the existing context, trail connections, and current trails infrastructure. During this initial project phase, policy information, past studies, and base maps were thoroughly reviewed to inform the study process. At the end of phase one, an opportunities and constraints exercise was completed.

Phase 2: Consultation

In order to achieve the sense of realism and uniqueness necessary for implementation, a successful master plan must be based on the needs, wishes, and desires of the community. For this trail study, phase two of the program consisted of a multi-faceted consultation program, comprised of stakeholder interviews, a public workshop, and an online survey.

Interviews

The steering committee provided a list of approximately five stakeholders for the Consultants to interview. The interviews were completed in person and over the phone throughout the study. During this process, an additional ten stakeholders were consulted and provided input and feedback into this process. A summary of the public consultation findings is included below.

Workshop

The results of the interviews formed the basis for the public workshop questions. A public workshop was held on the evening of Tuesday, August 9th, at the Ground Search and Rescue Hall in Liverpool. The session was very well attended, with more than 35 people. The overall response and activity generated during this process was generally positive and successful, especially during the public workshop. Workshop participants were divided into groups of six to eight people, with each group working

together to answer a series of questions. Each group was given about 45 minutes to prepare their answers, and then summary presentations were made to all in attendance.

The issue topics and questions posed to participants were:

- Identify where you live on the map.
- Identify potential conflict points on the map, and if possible, discuss solutions.

Ideas and discussions from the workshop were plentiful. Responses to the questions were varied but centred around a number of common themes. The most common issue was the proposed alignment travelling through the Village of Summerville and across Summerville Provincial Park Beach. Several Summerville residents were present at the meeting, and felt that any trail development through Summerville would be inappropriate, and that they would be opposed to a proposed route through either the Village or the Park.



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Online Survey

In order to further solicit public input, an online survey was developed to gather additional information on the issues surrounding this trail connection. Over a six week period, the survey yielded over 175 respondents, who commented on their commuting and transportation preferences and comfort levels. The full survey results can be found in Appendix A.

The majority of the respondents to the online survey were between the ages of 35 and 64 with an equal representation of male and female respondents.

Public Meeting

A follow-up public meeting was held at the West Queens Community Centre in Port Mouton on Wednesday, September 14th, 2011. The goal of this meeting was to update the public on the study findings to date, and to offer an additional opportunity for questions and feedback. This meeting was well attended by approximately 50 individuals, and while response to the proposed route options varied, in general the outcomes of this event were positive.

Written Comments

As an additional forum for comment on this study, numerous e-mails and other written correspondence were received and documented. At the completion of the draft plan, over forty individuals had provided specific written input towards the proposed trail alignment and plan.



Phase 3: Technical Review & Analysis

Phase three of the study process consisted of the technical review and analysis. The study team identified and investigated candidate routes, based on the information gathered to date from the study goal and objectives, the inventory and analysis, and the public consultation. The various route options were assessed, based on public input and best practices generated criteria. The potential routes have been summarized in terms of their opportunities and constraints for implementation, and no preferred route has been identified.

Phase 4: Reporting

Based on the preceding three phases, and the outcomes of the technical review and analysis, an overall trail plan was completed. The draft plan was presented to the Steering Committee for review and comment in March 2012.



1.3 COMMUNITY ECONOMIC DEVELOPMENT

In evaluating the overall feasibility of a shared use trail for Queens County, it is important to consider a strategy for Developing ATV Use Infrastructure & Trails as a tool to leverage Local Economic Benefits. The following is a summary of the general economic benefits of trails, and does not directly relate to the immediate study context.

The Trail is an Economic Resource.

ATV trails and their supporting infrastructure are an economic resource for those communities that are able to effectively leverage the associated traffic along these trails for local economic benefits.

In the same way that communities market and position themselves to attract road and highway traffic through their business districts, an ATV trail can provide another source for traffic that creates a variety of unique opportunities for local businesses offering goods and services that are in demand by ATV users.

Viewing ATV trail development as a strategic opportunity for leveraging local economic opportunity, ongoing trail development and trail promotion becomes a two pronged exercise with equal priority targeting both:

Good recreation linkages – those connections that maximize the local and regional “see and do” activities (i.e., trail programming).

Good economic linkages – establishing connections to availability and proximity of locally based goods and services providers so that trails are fully leveraging the potential for local economic benefits (i.e., servicing of trail users).

Economic Benefits

A study of the economic impacts of trail use is not possible within the scope of this current study. However, existing studies of the economic benefits of ATV use provide analogs that illuminate the range of potential impacts.

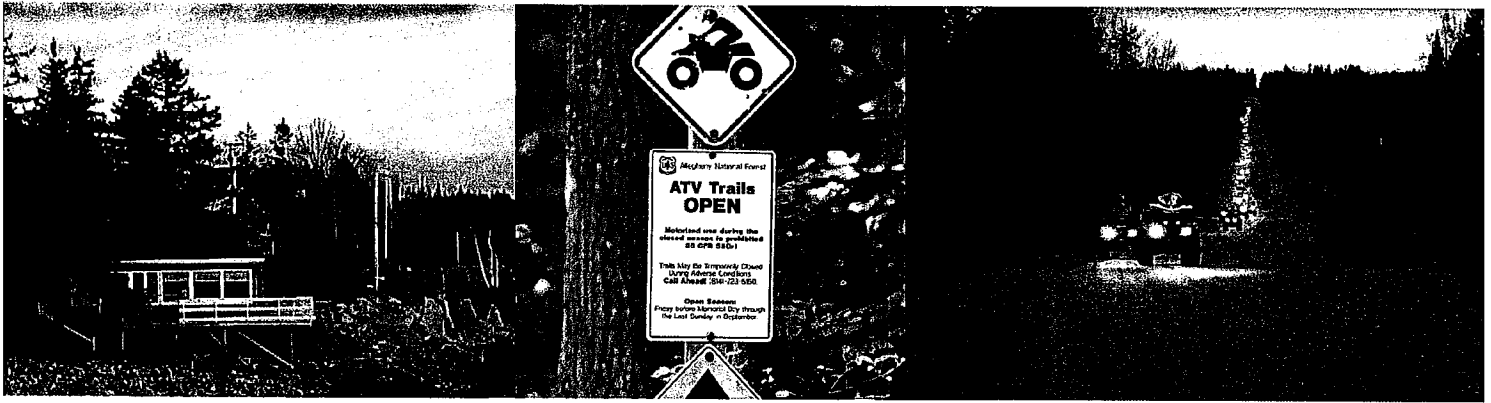
Impacts will depend on:

- » The number of trail users,
- » The duration of their trail use (i.e., from day trips to longer multi-day excursions),
- » Where the trail users are from (local, regional, or out-of-province),
- » The nature of their spending on goods and services (i.e., fuel, meals, overnight accommodations, recreation and entertainment, etc).

There are potentially two categories of trail users – those who use trails for day use, and those that use trails as part of longer runs, taking advantage of local services and enjoy multi-day trail uses. The longer-run multi-day trail users seem to be increasing, with local clubs receiving more enquiries concerning the potential for multi-day trail use from those outside the immediate areas.

Trail use is more likely to increase during the so called “shoulder” seasons – during a time of year other than the summer months when high volume of pedestrian uses occur. Therefore, ATV trail use is likely to be higher in the





spring, fall and winter months relative to the summer months, thereby offering an extension of the season to 'tourism' service providers who are able to leverage local trail infrastructure.

A recent (January 2009) survey by Isle Madame ATV Riders Association of 165 ATV Trail users identified an average of \$96/user in total individual spending to attend and participate in a one-day association event. Expenses tracked include Food/Drink (36%), Fuel/Supplies (19%), Accommodations (14%), and Registration fee (31%).

This suggests that 500 day trip ATV riders per year will directly contribute \$50,000 in total daily spending and 800 riders per year can directly contribute as much as \$77,000 through direct expenditures (spinoff impacts have not been factored into this estimate).

A US study (2005) for the Cooperative Tug Hill Council identified average daily expenditures per person for non-resident ATV (US\$48.25) and resident ATV spending Per Day (US\$31.92), considerably less impact per day. On the basis of these per diems, 500 to 800 local riders

would contribute between \$27,000 and \$42,000 in direct spending.

With a promising trend in "day trips" evolving into weekend and longer-run trips, daily and local spending will increase, if not due to an escalation in per day spending, then through a longer 'stay' in the local area. If 500 ATV riders stayed in the local area for 3 nights, their spending would increase to as much as \$78,000.

Based on discussions with sector representatives, we understand that ATV trails and infrastructure are left un-met, meaning there remains an element of "build it, and they will come". Regardless, there is a population of locally based day-use ATVs – conservatively, 500 per year, and as many as 800. With positioning and marketing, the opportunity could be expanded to include more local and more non-resident, multi-day trail users.

The Trail Development Process

Development of ATV trails is an ongoing and evolutionary process – it does not simply end with the creation of a trail. In the longer-term development of the trail, good planning and implementation will continue to add recreational linkages (i.e., lateral connections to main-line trails that create connections to more "see and do" activities) as well as continued development and enhancement of economic linkages (i.e., developing pathways and start-and-stop points that afford convenient access between trail users and the local goods and services providers in the region).

The ongoing dimensions of this strategy include:

- Trail development – adding laterals to the main trail to take in more terrain, add more sites of interest, and improve the appeal of the trail network by offering current users more things to see and do and by making the trail more attractive to ATV riders who visit from other regions or from outside NS.

Development of stopping/starting/resting locations – sites that are welcoming and secure so that ATV users (particularly those from outside the region) can avail themselves of short-term storage of support vehicles. Also,



Queens County Shared Use Trail Feasibility and Master Plan



these sites need to be located within convenient distance of economic services areas. Trail stopping/starting/resting points that offer convenient access to goods and services opportunities will generate the highest opportunity for capturing local economic benefits.

- "Asset Inventory" of ATV-ready and near ready services along ATV trails – this is an exercise to inventory
- Bed and Breakfasts and places to stay along the trail,
- Recreation & Entertainment venues/services,
- Food Services – restaurants,
- Food Services – grocery,
- Accommodations services,
- ATV equipment related services,
- Other retail services,

This information can be used to plan for future trail development and meaningful economic linkages, as well as to communicate with local goods and services providers the various business opportunities, and to develop collaborative strategies to leverage these opportunities.

Inventory of things to see and do along trails – identifying those sites that can be linked into the trail now, in the near term and in the long term and developing an action plan to do so.

Promotion and Marketing – Increasing trail use requires awareness. Awareness, ongoing trail development, and trail promotion will require targeting good recreation linkages (connections to see and do activities) with good economic linkages (availability and proximity of goods and service providers along the trail and its laterals).

Within this study, the concept of good recreational linkages have been integrated with a strategy for creating conditions and opportunities for immediate economic linkages, as well as setting the foundation for an ongoing strategy to continue to improve the economic linkages.



2: Approach

2.1 NOVA SCOTIA CONTEXT

The following legislation provides the structural foundation for the development of active transportation plans and facilities within the Province of Nova Scotia.

Municipal Government Act (MGA) - 1998, c.18, s.1. (Consolidated 2004)

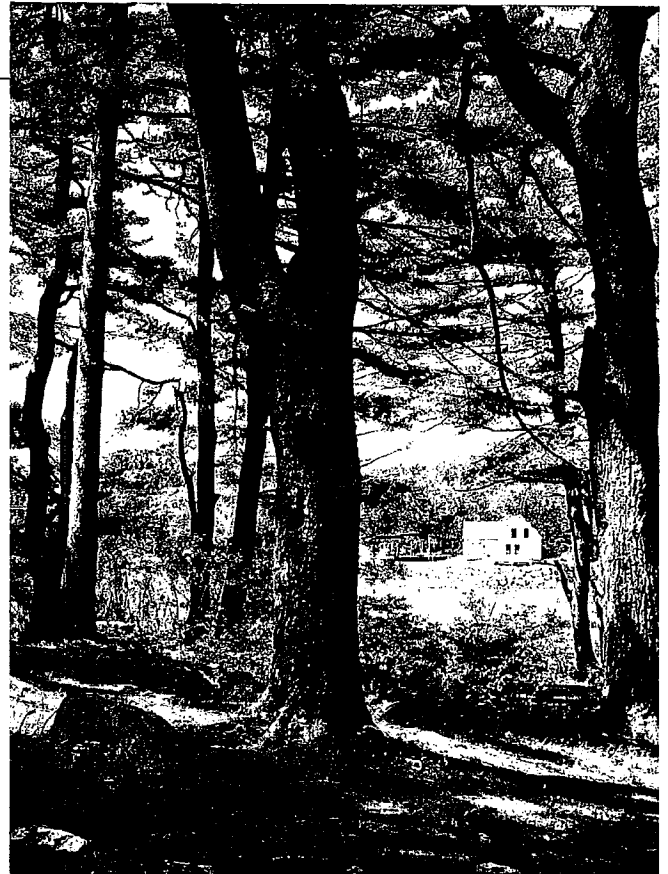
The Nova Scotia Municipal Government Act outlines the roles and responsibilities of the Province's municipalities. With respect to active transportation, the MGA allows the municipality to identify property for the expansion, development, diversion, or improvement of a roadway or trail, to prepare a Municipal Planning Strategy that may require specific AT provisions for development agreements, and to designate a traffic authority that has the power to establish pedestrian promenades or other restricted access streets.

Motor Vehicle Act (MVA) - R.S., c 293, s.1. (Consolidated 2005)

The Motor Vehicle Act of Nova Scotia restricts cyclists off of sidewalks, with the exception of children, or in locations where the local traffic authority has declared any portion of the sidewalk as a trail. The MVA also outlines the operation of bicycles along provincial highways, and prohibits roller-blading and skateboarding within the highway right-of-way, unless at a designated crosswalk.

Trails Act - R.S., c. 476, s.1.

The provincial Trails Act facilitates the development of trails on Crown land. Additionally, this legislation addresses the designation of watercourses as trails, and permits the creation of trail development agreements with other levels of government. The Trails Act provides for the Minister to outline permitted uses on designated trails. Originally intended to reduce liability of private landowners for trails development, most trails are now planned and implemented without the designation of the Trails Act.



Off Highway Vehicles Act - R.S., c. 323, s.1.

The Off Highway Vehicles Act (OHV) regulates the usage of ATVs and all other motorized forms of off-road transportation in Nova Scotia. The Act prohibits the operation of OHVs on highways, highway shoulders, or highway medians, but does permit their use to either cross the highway at right angles (under specific circumstances), or to drive within the right-of-way.

When an OHV is being operated within the right-of-way from sunset to sunrise contraflow traffic is not permitted, to avoid interference of OHV headlights with oncoming traffic.

The OHV Act also prohibits the operation of a vehicle on a sidewalk, walkway, school property, utility service lane, private forest, watercourse, beach, sand dune, park, or other private property without specific written permission.

Provincial Parks Act - R.S., c. 367, s.1

The Provincial Parks Act of Nova Scotia promotes the creation and operation of provincial parks. With respect to trails development, the Act facilitates the opening or closing of any road, trail, or highway within a park. The Act also permits the regulation of permitted modes of travel within the park.

2.2 ATV REGISTRATION

ATVs within the Province of Nova Scotia generally require registration for use. Registration fees contribute to the OHV fund, which in turn is used to provide trail development grants, fund OHV organizations, and provide education and training for drivers.

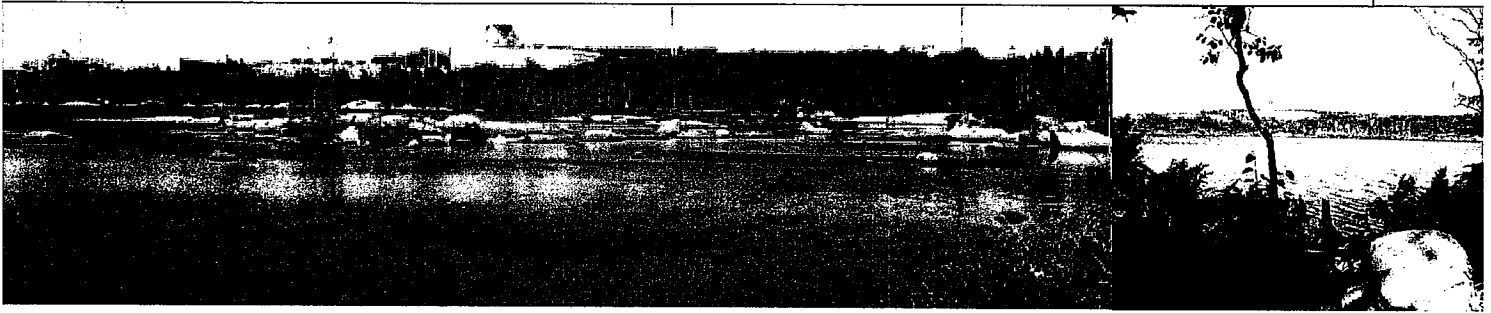
Registration of an OHV is not required only under the following circumstances:

- The driver of the OHV is NOT from Nova Scotia, and the OHV will be in the province less than 90 days.
- The driver of the OHV is a registered member of the First Nations and drives only on reserve lands.
- The driver of the OHV drives only on land owned by them, or someone related to them.

All OHV users are required to pay into the OHV fund, except in the following circumstances, applicable for OHV use for work or recreation:

- Work as a farmer, fisherman, or forestry worker.
- Law enforcement officer
- Self-employed who use their OHV for work
- Use of a golf cart on a golf course
- The driver of the OHV is a registered Member of the First Nations and drives only on reserve lands.
- The driver of the OHV drives only on land owned by them, or someone related to them.

The intent of OHV registration is to provide protection to users and to the general public. Further information on the policies and goals of OHV registration can be found in the Off Highway Vehicles Act.



2.3 MULTI-USE TRAIL CONFLICTS & SOLUTIONS

User Conflict

Conflict on motorized multi-use trails is an enduring problem in Nova Scotia. Conflict in an outdoor recreation setting has been defined as "goal interference attributed to another's behaviour".

- Trail conflict in this sense can occur among different user groups, within user groups or with landowners and residents adjacent to the trail. The greatest potential for conflict occurs on multiple use trails that include OHV users. OHVs are often perceived by other trail users and adjacent landowners to be noisy, intrusive, destructive and dangerous.
- In some areas of NS the use of OHV's on multi-use trails has become a polarizing issue.
- While non-motorized user groups may object to the presence of OHVs, in many cases it is funds generated through OHV licensing programs that make the development and maintenance of multi-use trails possible. Thus, there is incentive for coexistence between motorized and non-motorized user groups.

Sustained coexistence necessitates the balancing of the interests of all user groups; in order to manage conflict, public consultation should begin early in the trail development process. Trail management plans should consider controls on OHV use and related enforcement in order to ensure the safety and well-being of adjacent landowners and other user groups. Conflict resolution strategies should be included as a long-term component of trail management plans.

Environmental Impacts

The impact of OHV's on the natural environment are well documented including: erosion, stream sedimentation, habitat fragmentation and decreased plant biodiversity. Fortunately, Rail corridors provide optimal conditions for environmentally responsible OHV use. Most environmental damage arising from OHV use is a consequence of informal / unmanaged trails located on inappropriate soils, with poor drainage and steep slopes. Rail corridors are generally well drained, level and have a compacted sub-base which decreases erosion. The greatest threat to the environment arising from the use of OHVs on rail corridors is that they provide increased access to informal / unmanaged trail systems that are blazed through environmentally sensitive

areas adjacent to the trail. The implication is that measures should be taken to deter OHV users from straying from the rail corridor in order to prevent environmental damage.

Safety, Liability and Risk Management

Provision of a safe environment for all trail users should be a primary objective the trail design process. Special attention should be paid to bridges, road crossings and the integration of motorized and non-motorized uses. Additionally, liability and risk management are an essential component of motorized multi-use trail management strategies. Community groups and municipalities that act as trail operators owe a duty of care to trail users. Beyond precautionary safety measures they should develop a working knowledge of the legal dimensions that impact their trail. A risk management process is necessary not only to improve trail safety but to ensure that duty of care obligations are met in order to reduce the chance of litigation in the event of an accident. Standards detailed in the Nova Scotia Trails Manual should be adhered to.



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Twelve Principles to Minimize Conflict

The United States based National Recreational Trails Advisory Committee has completed a comprehensive literature review on conflicts on multi-use trails. Their 2004 report summarized research to date, and synthesized findings into twelve recommended principles to minimize conflict.

Recognize Conflict as Goal Interference

It is important to acknowledge that while conflict may occur, it is not an inherent outcome. Conflict may arise due to one group impacting another's desired goals or outcomes from their trail experience. Understanding that conflict is the interruption or interference of a specific user groups goals facilitates the development of mitigation solutions.

Provide Adequate Trail Opportunities

The provision of a range of distances, experiences, and facilities will reduce congestion, facilitate traffic flow, and support users in choosing the routes / options best suited to their desired trail goals and experiences.

Minimize Number of Contact Points In Problem Areas

In areas of high traffic or high sensitivity, use physical trail design and if possible, separation, to avoid conflict.

Involve Users as Early as Possible

Work with user groups as early in the trail development process as possible to build trust, to gain a thorough understanding of other users' perspectives and needs, and to develop meaningful partnerships.

Understand User Needs

Each user group has specific needs and motivations for their trail experience. Understanding these, and integrating them into the design process will facilitate shared use down the road.

Identify Actual Sources of Conflict

Work with user groups to determine specific and tangible causes of any existing or foreseen conflict, and eliminate emotion from the discussion to work down to the actual issue at hand.

Work with Affected Users

In situations of conflict, continue to work with affected users to develop mutually agreeable solutions. When users are cut from the process they are less likely to buy into proposed solutions.

Promote Trail Etiquette

The development of trail etiquette standards are essential in minimizing conflict. All user groups should be educated about the types of behaviours that are desirable and undesirable along the trail, and this education should be supported by trail signage, website content, and informative brochures.

Encourage Positive Interaction Among Users

Trail users are not as disparate in their desired experiences as one might initially believe. Promote shared use trail user groups to exchange ideas and work together towards a similar desired goal. This will build understanding and trust between diverse user groups.

Favour Light Handed Management

Promote freedom of choice and organic trail development by applying the most light handed management approaches necessary. This might mean more intensive management in early years, lessening off as trail development is completed and trail etiquette becomes established.

Plan and Act Locally

Always consider the local context when developing and promoting trails. Even within the local system, consider the development of sections on a microscale basis, and adjust development standards, practices, and approaches as the local context requires.

Monitor Progress

Trail development is an ongoing process. Monitor the effectiveness of educational and outreach programs throughout the development process, and adjust as required to meet the ongoing and evolving needs of all trail users.





2.5 OPPORTUNITIES AND CONSTRAINTS

Given the previous discussion of current conditions, trends in trails development, and context findings from the participation process, the following assessment of opportunities and constraints conveys the strengths and weaknesses of the Queens County shared use trail proposal.

Opportunities

- Existing Facilities: There is existing infrastructure within the study area that is ideal for trail development. The rail bed and Trestle Trail Bridge can be further developed to support use by multi-modal users.

- Engaged Community: The stake-holder groups and the public are very committed and engaged in the Active Transportation planning process. Stake-Holders provided meaningful input, public sessions were well attended, and the online survey received a high volume of responses.
- Tourism: Eco-tourism and trails-based tourism models are rapidly becoming one of the most popular tourism development models. The majority of the South Shore is linked by a trails system, with the exception of Queens County. A county-wide trails linkage would provide the foundation for a South Shore trails loop, and associated tourism spin-offs.
- Stakeholders: Often one of the key challenges in trail development is getting buy-in from the major stakeholder groups. In the case of Queens County, this study has been commissioned by such a group, so buy-in and adoption of the goals and intent of the plan is much more likely.

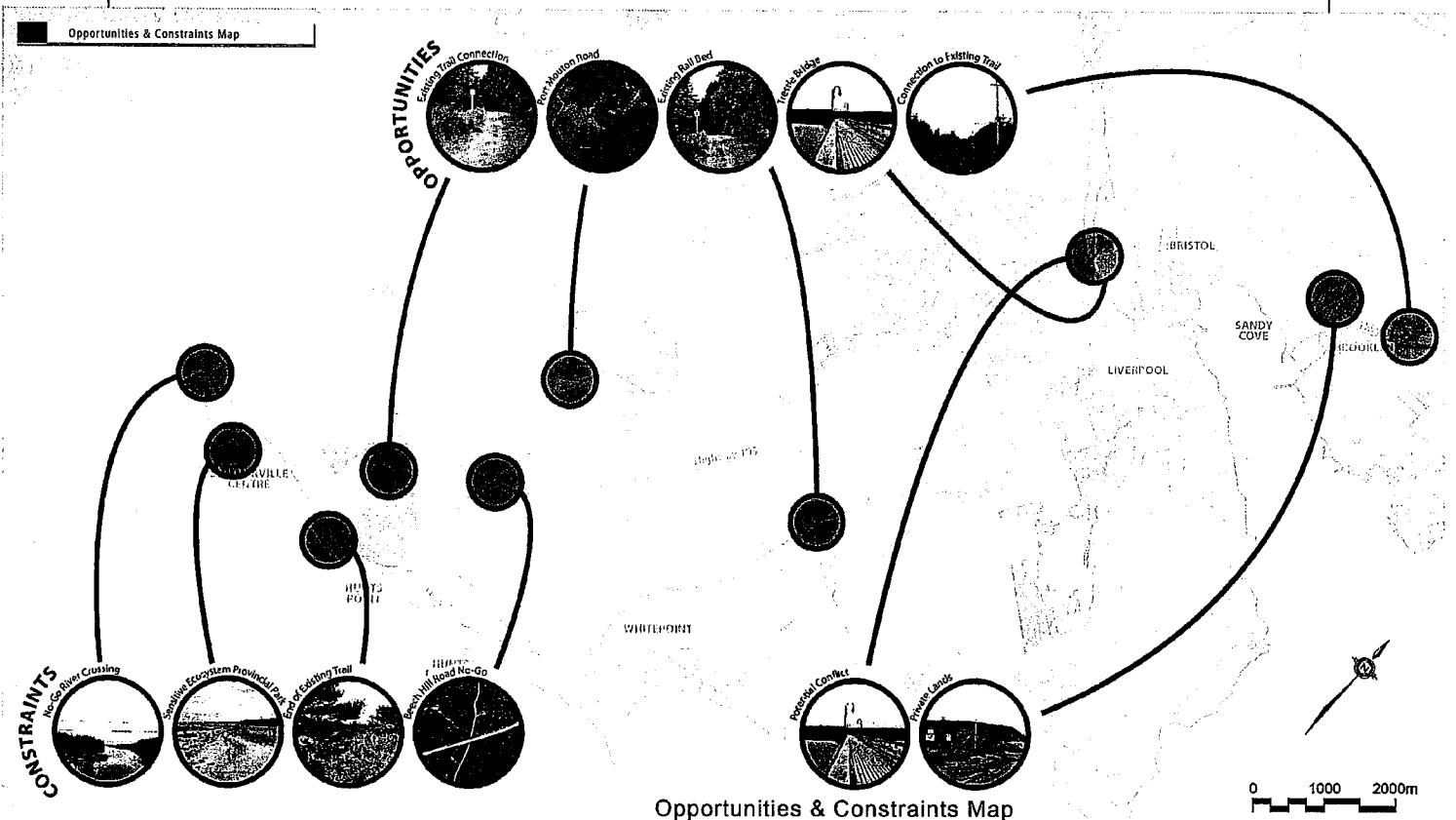
Constraints

- Public Resistance in Select Areas: There is public concern about any trail development in key pockets of the study area.
- New Infrastructure Capital Costs: The costs for new infrastructure may seem overwhelming, especially given the small population and largely rural context of the study area.
- Evolving Policy Context: The Trails Act, which currently governs the rail bed's use as a trail, may be under review, and the community development model for trails is evolving. This changing policy context brings some confusion to the necessary steps for the implementation of this project.
- Private Land: As no contiguous connection exists on public land, some private landowners may need to be approached to facilitate the development of a county wide trail connection.

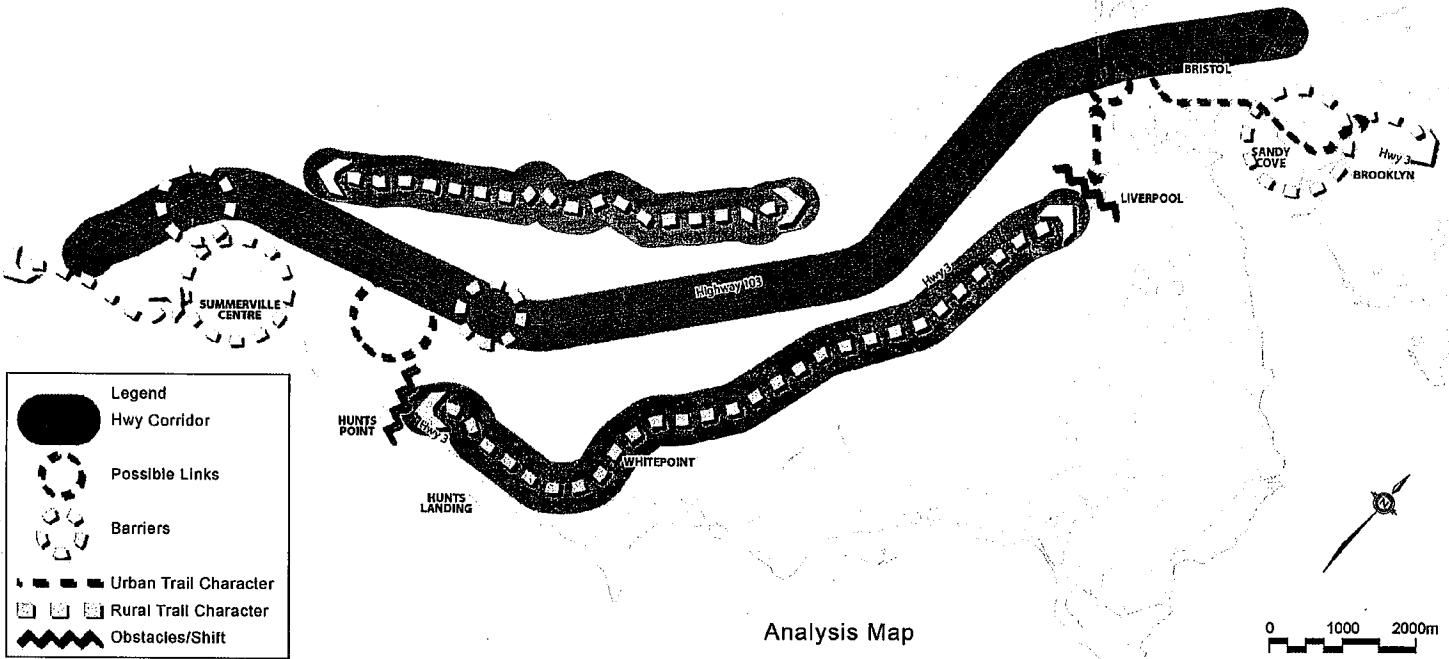


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3: The Plan

3.1 DESIGN APPROACH

This report presents a plan for the creation of a contiguous shared use trail linkage across Queens County. The design approach used to guide this process was framed by the consideration of a number of sustainable transportation values, which provided the foundation for the development of the entire plan.

Safe

The proposed facilities must be designed to be safe and comfortable for a variety of trail users, including both motorized and non-motorized.

Accessible

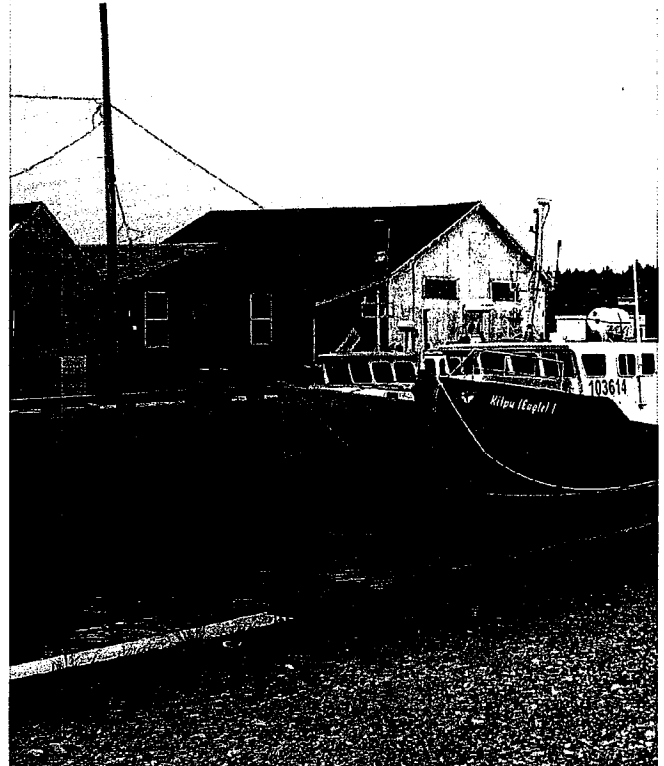
Trails facilities should be accessible from all areas of a community, by all types and skill levels of users. Effort should be made to service both rural and urban areas equitably, and to meet the greatest range of needs from the largest variety of users.

Desirable

Trails connections should be reflective of the needs and wishes of the residents. Facilities should connect to nodes and destinations that are highly sought, while taking advantage of scenic vistas and natural amenities. A trail should be an attractive asset to a community's overall transportation network.

Efficient

The planned trail should link nodes and destinations in an efficient and logical manner, integrating with existing infrastructure or alternative modes of transportation, where feasible.



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3.2 BENEFITS OF TRAILS

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

Health

Shared use trails provide an enjoyable, convenient and affordable means of exercise and recreation. Physical inactivity is a leading contributor to a number of health implications, such as heart disease, hypertension, stroke, diabetes and osteoporosis. Inactivity is also directly linked to obesity, one of Canada's most pressing health concerns. By encouraging the participation of Queens County residents in purpose-driven physical activity, trails development can aid in working towards greater overall community health and well-being.

Having a healthier community will also help with reduced health care costs. Motorized uses on trails provide a valid recreational opportunity to a key user group, which has associated health benefits. Recreation improves health by promoting a reduction in stress, exposure to the outdoors, and an opportunity to engage in associated non-motorized activities.

Transportation

Trails-based travel is a means of transportation that is efficient, affordable and accessible. It is the most energy efficient mode of transportation, and the benefits of trails-based transportation include reduced road congestion and maintenance costs, less costly infrastructure, increased road safety and decreased user costs.

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 trails-based transportation modes can result in a reduction in these roadways costs.

Economic

Trails based 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, external costs due to traffic congestion and parking subsidies. 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.

Social

Trail development provides a setting for people to leave their homes and meet and socialize with the local residents. Interacting with neighbours can help people to feel more connected and involved with their community.

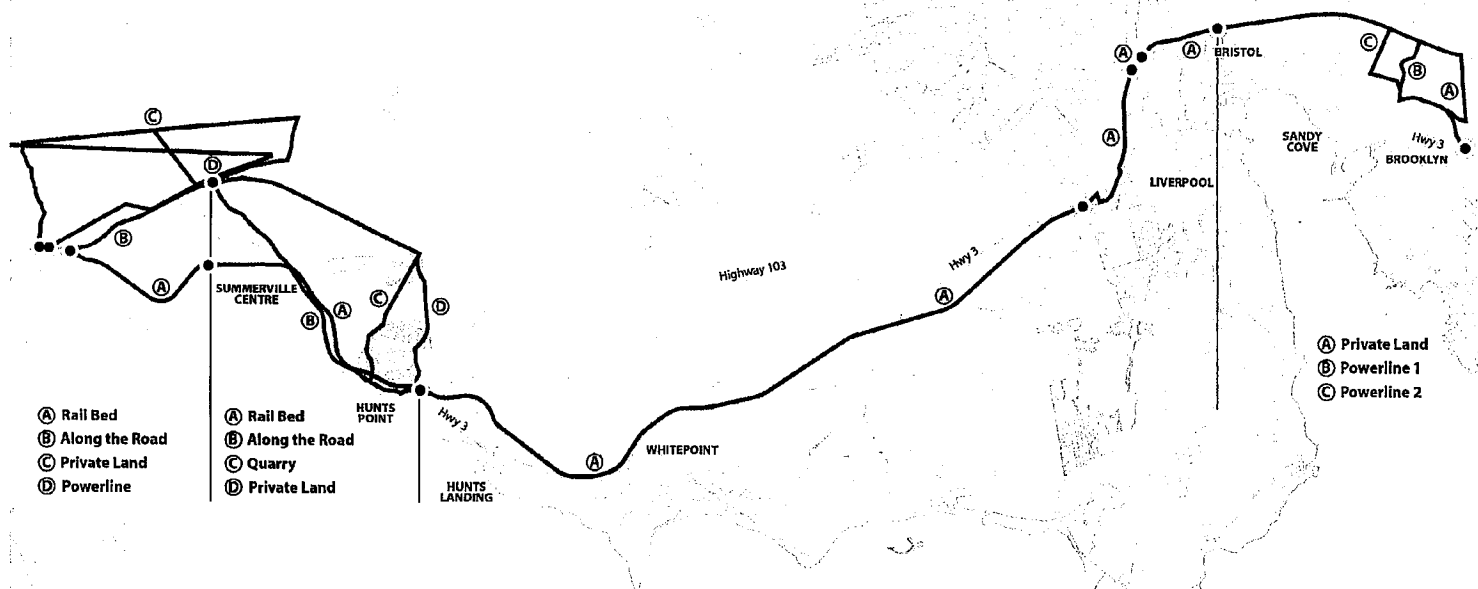
3.3 ROUTE COMPONENTS

The proposed trail has been divided into nine sections, each with up to four different linkage options. The feasibility of each section and each linkage has been evaluated based on a variety of factors, such as feasibility, capital cost, public impact, policy implications, and other contingent factors. The sections are outlined in Table 3.3.1.

Trail Section	Linkage
Brooklyn to Hwy 103	Utility corridor Utility corridor Private Lands
Hwy 103 to the Trestle Trail Bridge	Remain up to meet Trestle Trail
Trestle Trail Bridge	Modify bridge to accommodate shared use
Trestle Trail Bridge to B-g Road	Existing Rail Bed
B-g Road to Silver Rock Road	Existing Rail Bed
Summersville Centre (Silver Rock Road to Hwy 3)	Existing Rail Bed Hwy 3 Quarry Private Land
Summersville Provincial Park	Access road to rail bed
Broad River Crossing	Existing Hwy 103 Bridge (modification) Fall Line Hwy 123 Bridge Port Mouton Crossing (new bridge) Utility Corridor crossing (new bridge)
Broad River to the existing trail	Utility corridor Private Land Hwy 123 ROW Existing rail bed



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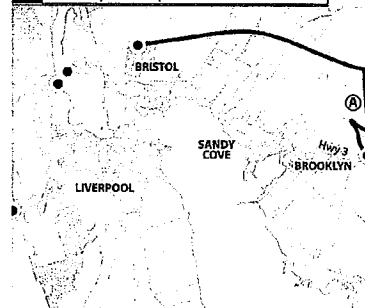
Brooklyn to Hwy 103

Starting at the existing trail and continuing through Brooklyn, three options existing for connection. Each option requires permission from Abitibi-Bowater to cross their lands. This permission could be obtained, or perhaps the right-of-way could be repurchased (by the Province) as part of the financial restructuring of mill operations.

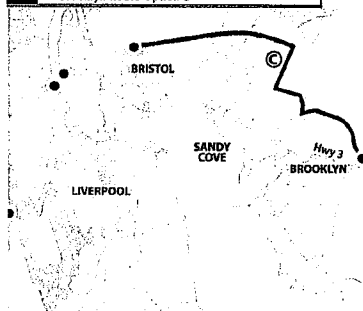
Option A: The Existing Rail Bed

Opportunities	Constraints
Connects to Hwy 103	Rail Bed Privately Owned
Connects to Existing Trail	Abitibi-Bowater Operations
	Need to obtain permission

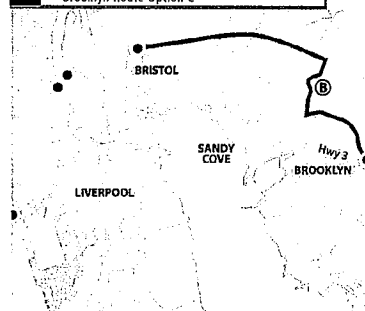
Brooklyn Route Option A



Brooklyn Route Option B

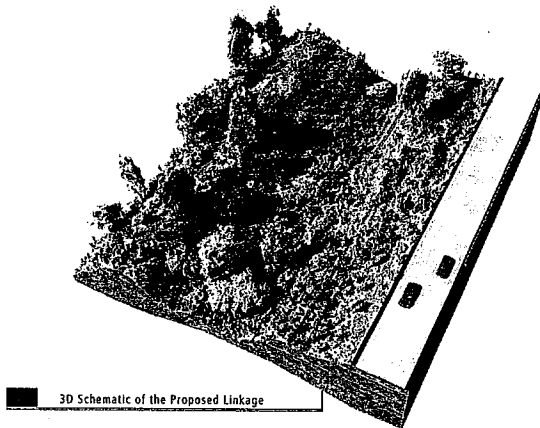


Brooklyn Route Option C

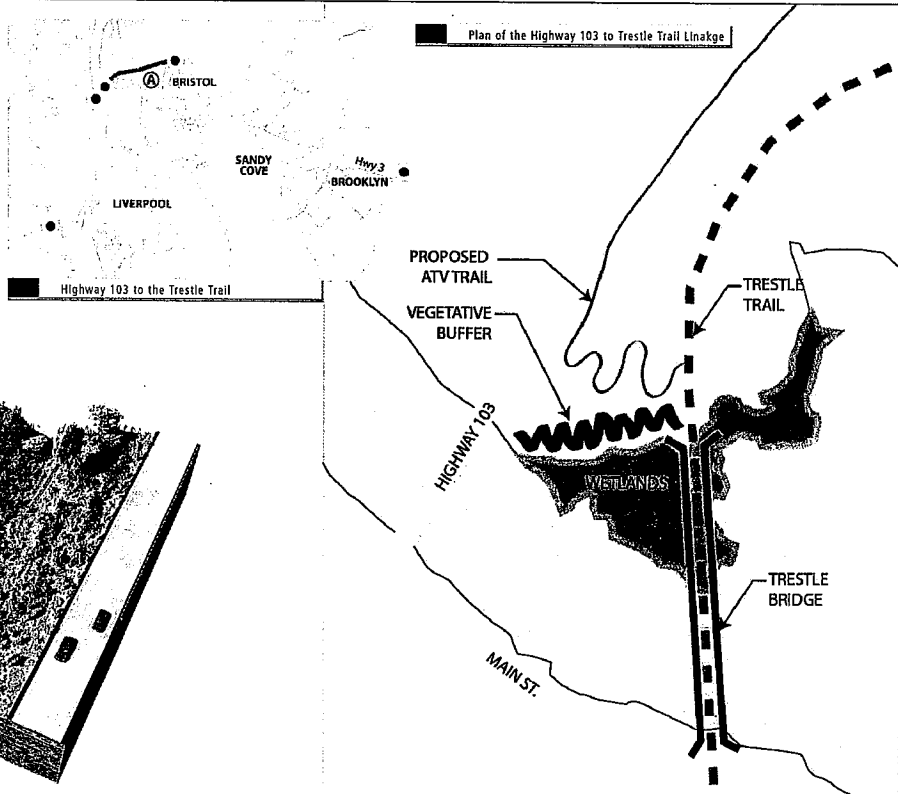


Highway 103 to the Trestle Trail Bridge

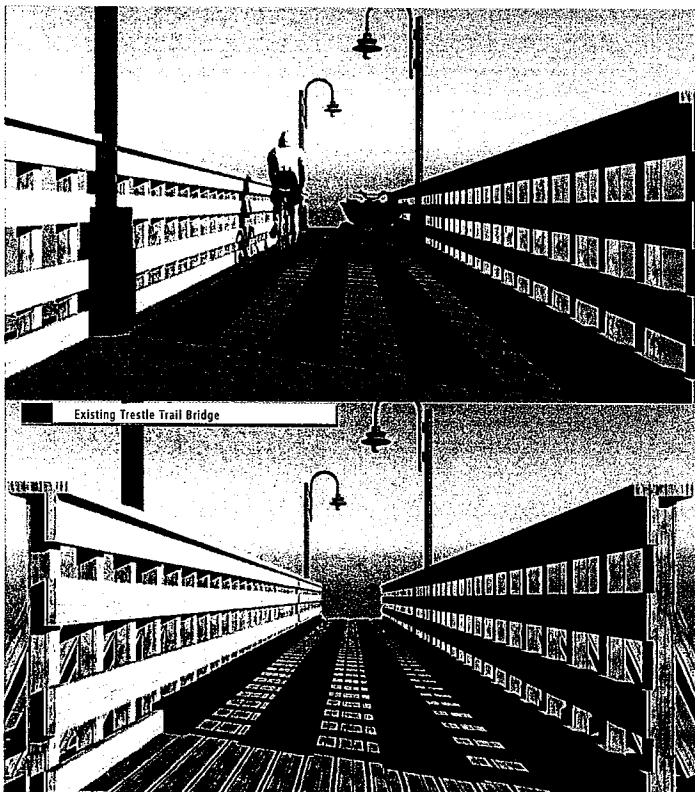
Travelling from Highway 103, the proposed trail would stay along the south side, within the right-of-way. Restricting trail traffic to one side of the highway means that ATV operation would be limited to daylight hours only. Approaching the Mersey River, the trail would travel up the grade using a series of switchbacks, staying away from the sensitive wetland areas. The ATV trail would connect to the existing Trestle Trail as close to the Bridge as possible, minimizing route overlap.



3D Schematic of the Proposed Linkage



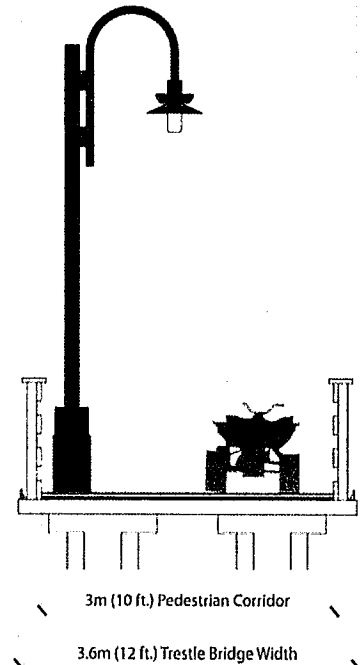
Queens County Shared Use Trail Feasibility and Master Plan



Trestle Trail Bridge

Crossing the Mersey River was initially seen as one of the challenges of a shared use trail. However, the existing bridge could likely be modified to permit shared usage, as well as improving functionality for other non-motorized users.

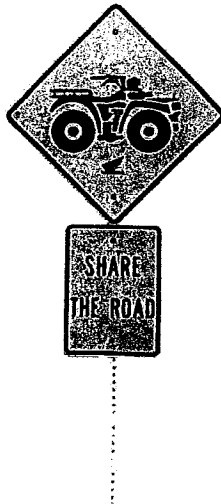
The current orientation of the bridge decking is parallel to the path of travel (as opposed to perpendicular). This increases the likelihood of stroller wheels and bicycle tires getting stuck, or veering off-course. Widening the path of travel could be accommodated without impacting the bridge foundation (contingent on an engineering assessment of the bridge structure). A wider path of travel will improve the crossing for a number of different types of users. For an additional measure of comfort to reduce potential conflict between motorized and non-motorized users, the crossing could be signalized, warning ATV users to wait while non-motorized users cross.



Proposed Trestle Trail Bridge Modifications

Trestle Trail Bridge to Bog Road

Once across the River, the trail would continue along the existing rail alignment out towards Bog Road. Additional fencing and strategically located vegetation could provide additional privacy screening for landowners. As the trail is passing through an urban area, a well defined trail policy and management plan would establish the standards for trail etiquette. Hours of use, regular monitoring and enforcement, and public education are essential components of the urban trail management.



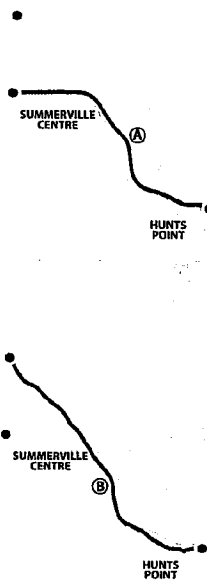
Bog Road to Silver Rock Road

Travelling out of Liverpool, the shared use trail would continue along the existing rail alignment. This linkage would require a modification of the trail's current designation under the Provincial Trails Act. As the trail is passing through a rural area, trail users should be made aware of trail policy and management for rural zones. This management plan would include hours of use, monitoring and enforcement, and public education.

The existing rail bed would likely need some improvements, including clearing and grubbing, and surfacing improvements. Vegetation and privacy fencing should be installed in sensitive areas, or where homes are close to the rail corridor.



Silver Rock Road to Highway 3 Options



Silver Rock Road to Highway 3 (Summerville Centre)

As the trail approaches the Village of Summerville Centre, there are four possible trail linkages.

Option A: The Existing Rail Bed

Opportunities	Constraints
A direct route	Public Opposition
Cost Effective	
Crown-Owned Land	

This option would connect the trail from Silver Rock Road through the Village, along the existing rail bed. The advantages to this option include its shorter distance, lower costs to construct (due to the existing rail bed foundation), and the lack of land acquisition required.

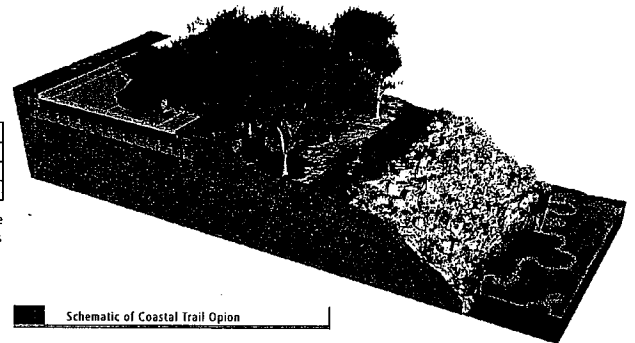
A constraint of this option is the public concern and opposition to this specific linkage.

Option B: Along the Hwy 3 Right-of-Way

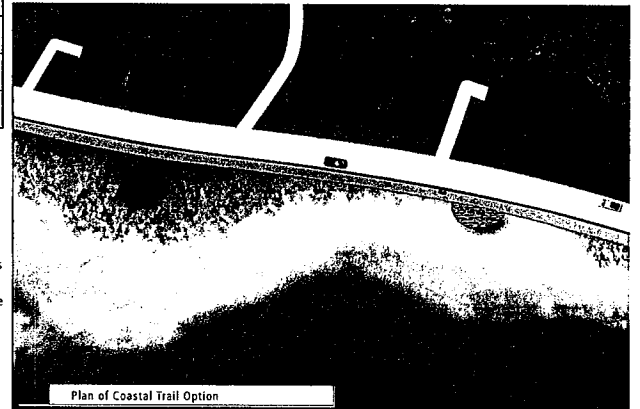
Opportunities	Constraints
Desirable & Scenic Trail Connection	Some sections would be technically challenging
Does not significantly increase length of trail	Higher development costs
Connects to Hwy 103	Requires Crossing of the Broad River

This option would connect the trail from Silver Rock Road up to Highway 103 along the right-of-way of Highway 3. The trail would travel along the road, physically separated from traffic, and would provide users with scenic views of the water. The other key opportunity of this route include the fact that it does not significantly increase the length of the trail, which is ideal for non-motorized users, and minimizes construction costs.

However, because no existing foundations are present, overall the costs to develop this section would be higher. Additionally, there are several pinch points that could prove to be technically challenging to design / construct. This route also requires crossing the Broad River, either along the existing highway bridge, or along a future bridge.



Schematic of Coastal Trail Option



Plan of Coastal Trail Option



Option C: Through the Gravel Pit

Opportunities	Constraints
Existing Informal Connection	Crosses Private Land
Bypasses Residential Areas	Requires Crossing of the Broad River
Connects to Hwy 103	Not Particularly Scenic

This option would connect the trail from the existing rail bed to Highway 103 along an existing and informal connection, through a gravel pit. The link crosses one privately owned parcel of land (the gravel pit), and two municipally owned parcels, and would require formal permission from all the landowners in the form of easements or other access agreements. This route is advantageous, as it bypasses the Village of Summerville Centre completely, and would direct trail traffic up to the Highway 103 right-of-way.

This connection is challenging because of the need to obtain private landowner permission. This route also requires crossing the Broad River, either along the existing highway bridge, or along a future bridge. There may be some technically challenging sections to construct along the Highway 103 right-of-way.

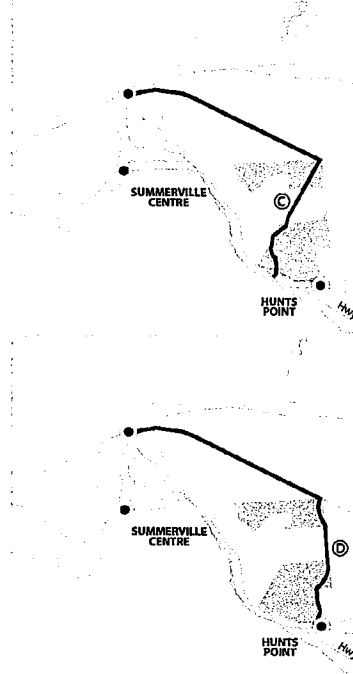
Option D: Across Private Lands

Opportunities	Constraints
Modification of Existing Informal Connection	Crosses Private Land
Bypasses Residential Areas	Requires Crossing of the Broad River
Connects to Hwy 103	Not Particularly Scenic

This option would connect the trail from the existing rail bed to Highway 103. The link crosses two privately owned parcels of land (the gravel pit), and two municipally owned parcels, and would require formal permission from all the landowners in the form of easements or other access agreements. This route is advantageous, as it bypasses the Village of Summerville Centre completely, and would direct trail traffic up to the Highway 103 right-of-way.

This connection is challenging because of the need to obtain private landowner permission. This route also requires crossing the Broad River, either along the existing highway bridge, or along a future bridge. There may be some technically challenging sections to construct along the Highway 103 right-of-way.

Silver Rock Road to Highway 3 Options

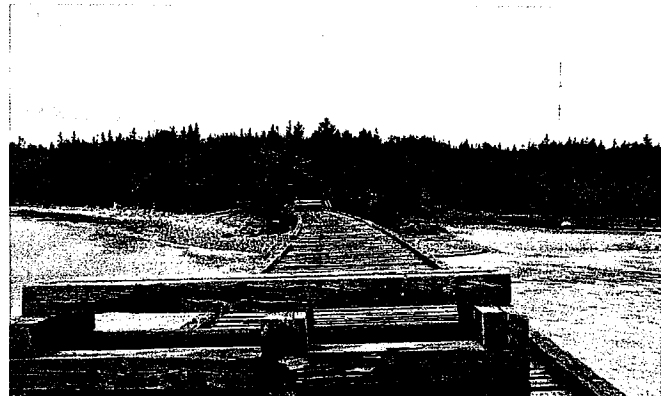


Summerville Beach Provincial Park

The opportunity to continue the trail along the existing rail bed, through Summerville Beach Provincial Park and across an existing bridge has been considered in the past. This option has the advantages of the existing rail bed as a trail foundation, the existing bridge (a structural assessment will need to be completed by a registered structural engineer), and the directness of the route.

In examining the feasibility of this option for a shared use trail, two significant constraints exist. Summerville Beach Provincial Park falls under the regulations of three legislative acts (the OHV Act, the Beaches Act, and the Parks Act) that specifically prohibit the operation of motorized vehicles in Provincial Parks or on Beaches.

The second factor is the public opposition to this linkage, specifically with respect to concerns over habitat, species at risk, and the general atmosphere of the Park.



Broad River Crossing

Five options have been identified for crossing the Broad River.

Option	
Summersville Park Bridge	Structural Capacity unknown
Existing Hwy 103 Bridge	Possible once road is downgraded to Hwy 3
Future Hwy 103 Bridge	Physically separated crossing on to be constructed bridge
Port Mouton Crossing	New Trail Bridge
Utility Corridor	New Trail Bridge

Option A: Existing Rail Bridge in the Park

These options explore the potential to modify the existing Highway 103 Bridge to include a physically separated trail crossing, or to include such a facility in a future bridge as part of the planned realignment of Highway 103. Both of these options would provide for a safe, physically separated crossing that would be accessible by all types of trail users. The downside to this option is the high capital costs, and the time frame connected to the Nova Scotia Department of Transportation & Infrastructure Renewal (TIR). However, there is precedent to request such a crossing, as other trail facilities have been included in large scale capital projects in other regions of the Province.

Options B & C: Highway Bridges

These options explore the potential to modify the existing Highway 103 Bridge to include a physically separated trail crossing, or to include such a facility in a future bridge as part of the planned realignment of Highway 103. Both of these options would provide for a safe, physically separated crossing that would be accessible by all types of trail users. The downside to this option is the high capital costs, and the time frame connected to the Nova Scotia Department of Transportation & Infrastructure Renewal (TIR). However, there is precedent to request such a crossing, as other trail facilities have been included in large scale capital projects in other regions of the Province.

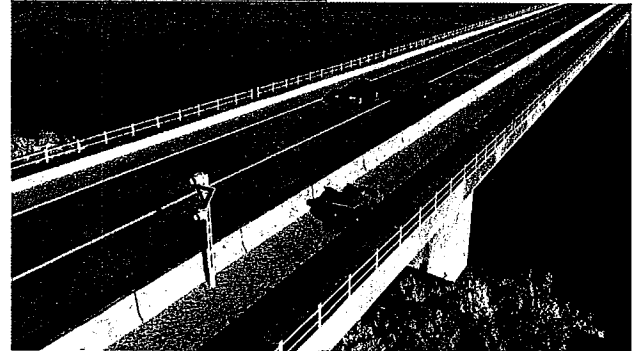
Opportunities	Constraints
Crossing in Place / Planned	Requires TIR Permission
Cost Sharing with TIR	Uncertain Time Frame
Safe Shared Crossing	Cost Prohibitive

Options D & E: New Bridges

The construction of new, dedicated trail bridges at one of the possible crossing points is favourable, because it will not require permission from either Transportation & Infrastructure Renewal (TIR) or the Ministry of Natural Resources. However, the costs of installing a trail bridge may be prohibitive. If this option is to be considered, choosing the shortest crossing, ideally in a place with existing bridge footings would reduce capital costs.

Opportunities	Constraints
Trail Specific Crossing	Cost Prohibitive
No Need for TIR Permission	
Avoids Park	

Schematic of Proposed Bridge Configuration



Queens County Shared Use Trail Feasibility and Master Plan

Broad River to the Existing Trail

Linking up the existing multi-use trail on the west side of the Broad River is the final connection in the creation of a contiguous shared use trail. Four options exist for this connection.

Option A: Rail Corridor

Continuing directly on the existing trail from the existing bridge is the most direct route. However, this connection is predicated on obtaining permission to travel through Summersville Beach Provincial Park, and ensuring the bridge is structurally able to support trail traffic.

Option B: Highway 103

If the trail makes its crossing of the Broad River on the highway bridge, a natural continuation within the Highway 103 corridor is possible, connecting into the existing rail trail.

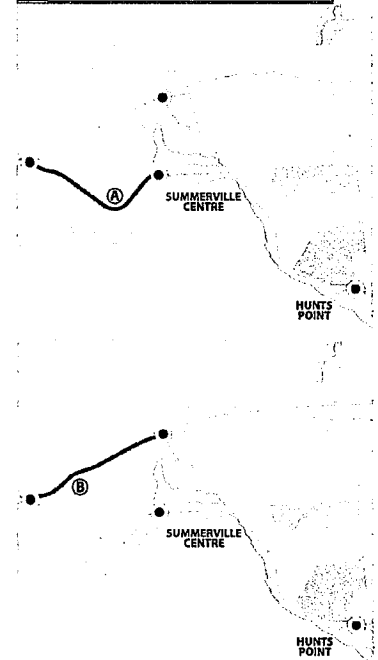
Opportunities	Constraints
Connection with Existing Trail	Not Feasible for Shared Use
	Linked to TIR bridge / realignment

Options C & D: Utility Corridor / Private Lands

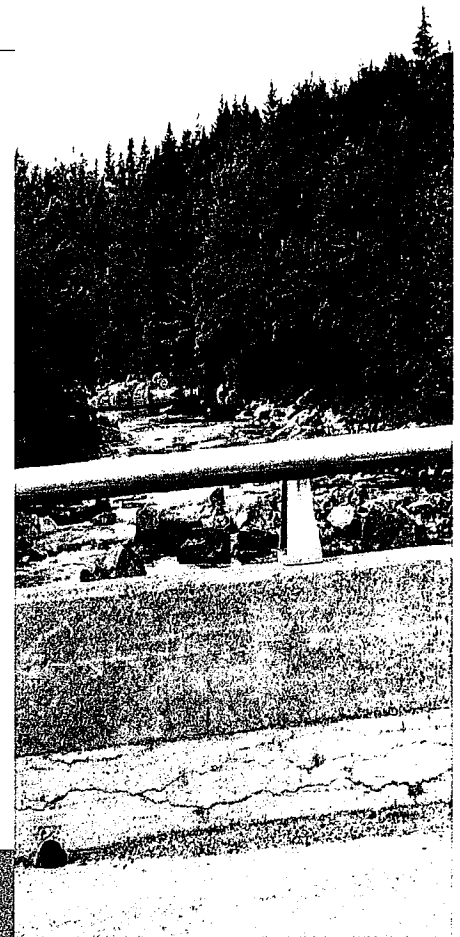
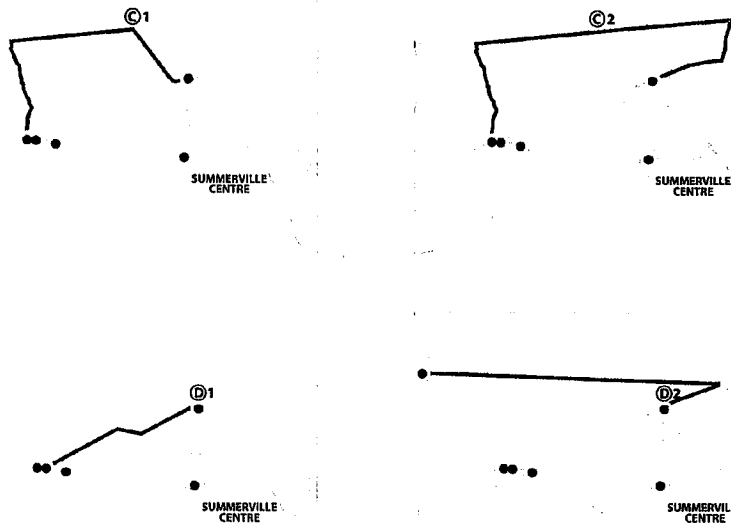
Making the final connection is also possible in a range of options through either privately owned right-of-ways, or existing utility corridors. These options are not contingent upon either the Summersville Beach connection or obtaining permission from TIR, but do require landowner permission and the construction of a dedicated trail crossing for the Broad River.

Opportunities	Constraints
Connection with Existing Trail	Requires Access / Permission
Feasible for Shared Use	

Broad River to the Existing Trail Route Options



Broad River to the Existing Trail Route Options



3.4 OUTREACH

The physical network is only one component of a realistic and implementable trail; outreach is a critical component that must be taken into consideration. Infrastructure such as the trail itself is a necessary facility in order to provide users with the option of recreation; education works to contribute to the incentive to use the system. The Municipality and its key trail user groups must work with the various stake-holders in the community to take an active role in promoting and developing active transportation leadership; creating and supporting programs and policies that will encourage users to enjoy the various network facilities.

Trail User Group

Nova Scotia follows a community-based trail development model. This means that all trail development on Crown Land must be undertaken by a community group. In the Region of Queens, trails development has been fraught with a difficult past. In moving forward, a new community group should be formed that comprises representation from all interested and / or stakeholding groups in the Community. This includes, but is not limited to the Rails to Trails group, the QCATVA, the Liverpool Walking Group, the Summerville Centre Residents group, and any other interested trails or user groups.

Consolidating trail user groups into one new group will have a number of positive benefits. Forming a new group will not limit the ability to access funds for trail capital and operational expenses; this group would still be eligible for grants from sources such as the ATV infrastructure fund. Inviting all interested parties to work together towards trail development maximizes the transparency of the process, and supports the opportunity for all community members to participate and have a voice.

Education

Education is the keystone for a safe and legible trails system. Safety, and the benefits of trail use are the two most common topics of public education. Trail users, especially motorized users, need to be well informed on how to safely navigate the network, and the general public needs to be well informed on safe interactions with trail users.

The Queens County ATV Club should continue to promote safe trail usage among its membership, as well as encouraging ATV users in the region to join its association. Members should work together to establish and support shared use trail etiquette, both among its user group and among other trail users.

Monitoring and Enforcement

Like roadways, safe trails require enforcement of the rules for everyone's enjoyment and protection of property. Cyclists have to obey the same rules and responsibilities as motorists including obeying traffic signs, signalling, stopping at crosswalks, stopping for school buses, etc.

Many communities have turned to patrols as an effective way to police the trails system, where appropriate fines should apply for infractions. Outreach programs which focus on safety and regulations are also effective in encouraging proper use of the trails.

The QCATVA should work with local police to establish a trail monitoring and enforcement program. Having a highly visible enforcement team on the trail, especially in the early years, will build trust and promote the establishment of positive trail usage and etiquette.





3.5 DEVELOPMENT AND MAINTENANCE

As with all municipal /provincial infrastructure, maintenance costs and liabilities have to be acknowledged and planned for. Effective route selection and adherence to high quality construction will minimize costs and risks. The following guidelines are recommended:

- » Remove debris from the route in the spring, summer, and fall;
- » Inspect structures such as bridges and culverts annually;
- » Remove vegetation that overhangs the trail or that obscures signage on an annual basis;
- » Cut grass shoulders on either side of the trail on a regular basis;

- » Inspect signs on a yearly basis, and especially after a major storm event, for replacement due to damage, vandalism, or deterioration;
- » Crusher dust trails need to be inspected yearly and maintained by regrading and wedding to extend their life, to prevent serious erosion, and to keep the trail surface safe for all users;
- » OHV trails should be inspected yearly for vegetation control, fallen trees, signage, and surface conditions;
- » Snow and ice should be removed from key segments (typically urban areas with high use) during the winter months.

Maintenance Costs

Average maintenance costs for budgeting purposes tend to be:

- » OHV Trails: \$100 / km Yearly
- » Bike Trails \$1,000 - \$1,500 / km Yearly



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4: Design Guidelines

This chapter provides a summary of the technical design guidelines that are required to frame the detailed design and implementation of the recommended trail facilities. In order to ensure a realistic, sustainable, and implementable shared use trail, strongly articulated standards are an essential component of the planning process.

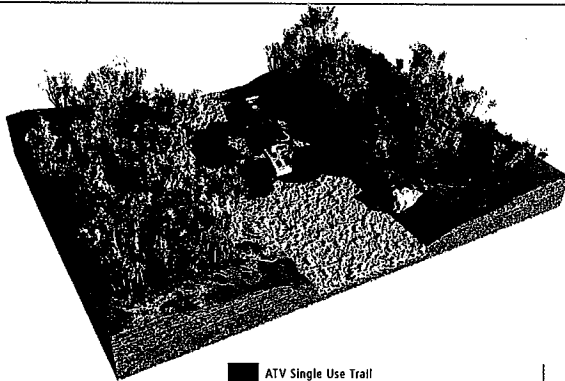
As much of the trail construction and development outlined in this report will be undertaken by volunteers, the QCATVA should promote the development of trail facilities to the standard outlined. Effort should be made to have the Municipality adopt these as the official design guidelines for all new trails within the Region of Queens.



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Queens County Shared Use Trail Feasibility and Master Plan



ATV Single Use Trail

4.1 TRAIL DESIGN STANDARDS

ATV SINGLE-USE TRAIL

Design of ATV trail networks must use a number of guiding principles to help shape and construct a safe experience for both the rider and the trail. Proper construction of the trail is critical to determine success of usage and avoidance of future trail maintenance.

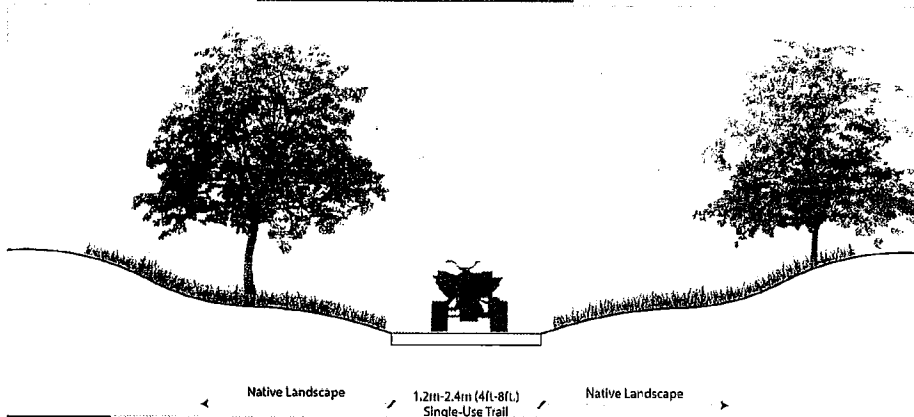
GUIDING PRINCIPLES

- **TRAIL WIDTH** - Typical manufacturer ATV width is 1200 mm. Trail widths should be a minimum of 1200 mm (difficult) to a maximum of 2400 mm (easiest).

- **GRADE** - The maximum sustained grade (distances of 60 m or more) is 15%, however, for short distances up to 50% is achievable. Grade becomes a critical aspect of trail difficulty when grades exceed 30%. The steeper the grade, however, the more environmental impact becomes a factor. Grade should be kept to minimums (less than 15%) near and along multi-use trails.
- **CLEARING** - A minimum of 500 mm shall be cleared along either side of all proposed ATV off-highway trails. A safe vertical clearing height is 3000 mm.
- **CROSS-SLOPE** - All ATV trails shall maintain a 2-5% cross-slope to reduce ponding and erosion.
- **ALIGNMENT** - The minimum curve radius on any trail shall be 2700 mm (difficult). A lower difficulty curve radius is 4500 mm.
- **DESIGN SPEED** - Trail design speed corresponds to trail type, material, hazards, and difficulty. Typically, the maximum speed limit is 40 km/h. Long tangent sections of trail should be avoided as they will invite excessive speed. Sharp turns should also be avoided.

SURFACING

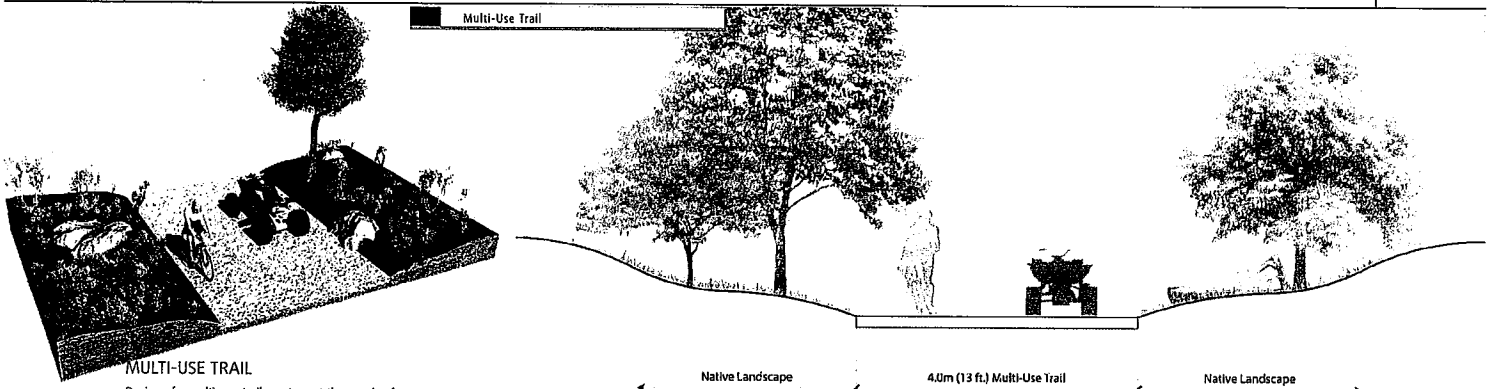
- Existing native soil will provide the ideal base for ATV only trails.
- If subgrade conditions are found unsuitable, geo-synthetics such as geo-textile material may be used over the subgrade and then compacted with new suitable base material.
- Alternatives include asphalt shingles, interlocking concrete pavers, concrete blocks, geopavers, geogrids, and geocells.



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MULTI-USE TRAIL

Design of a multi-use trail must meet the needs of a variety of users. Generally, motorized and non-motorized usage is not compatible, however, certain situations and land restrictions dictate where shared usage must occur and specific design guidelines must be applied to meet user expectations. Primarily, this type of multi-use trail can be successfully accomplished through the use of the guiding principles below.

GUIDING PRINCIPLES

- **TRAIL WIDTH** - In areas where motorized and non-motorized use occurs, trail width shall be at minimum 4 meters. This does not include pinch points such as bridges, tunnels, or restrictive topography.
- **GRADE** - The maximum sustained grade (distances of 60 m or more) is 15%, however, for short distances up to 50% is achievable. Grade becomes a critical aspect of trail difficulty when grades exceed 30%. The steeper the grade, however, the more environmental impact becomes a factor. Grade should be kept to minimums (less than 15%) near and along multi-use trails.

- **CLEARING** - A minimum of 500 mm shall be cleared along either side of all proposed ATV off-highway trails. A safe vertical clearing height is 3000 mm. Avoid blind curves on multi-use trails. Widen curves to allow pedestrian safe passage.
- **CROSS-SLOPE** - Multi-use trails shall maintain a 2% cross-slope to reduce ponding and erosion.
- **SEPARATION** - If possible, the shared corridor shall temporarily separate and incorporate distance, vegetation, elevation, or other physical features to provide additional safety for all users.
- **DESIGN SPEED** - For bicyclists, a minimum design speed of 32 km/h is typically used on trails. For motorized vehicles, the design speed is greater, 40 km/h. The trail would thus be designed for the greater design speed, however, speed limit sign postings shall reflect compatibility of users and restrict users to slower speeds.

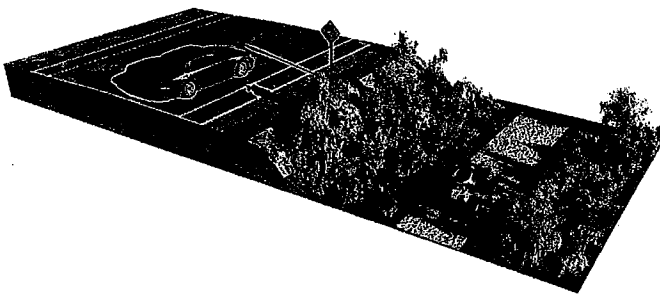
- **TIME** - Trails can be designated as seasonal multi-use trails or restrict the hours in which motorized use can occur. For example, evening hours.

SURFACING

- Multi-use trail shall be constructed of high quality, crushed stone, tamped down and compacted.
- Lay and compact base coarse gravel 15 cm deep and top with 5 cm of crushed stone.
- Ensure finished trail tread is not lower than existing grade.
- Alternative surfacing shall be recycled asphalt shingles. Shingle surfacing increases lifespan of trail, is sound-absorbent, reduces dust, and provides a waste diversion opportunity.



Queens County Shared Use Trail Feasibility and Master Plan



ATV SHARED HIGHWAY

ATVs shall comply with the provisions of the Off-Highway Vehicles Act (Ch. 323 of the Revised Statutes, 1989, Rev. 2005).

Although not desired, ATV trail networks inevitably will intersect with roads and highways. The Nova Scotia Off-Highway Vehicles legislation provides rules and regulations regarding allowances for shared highway use. The proposed ATV trail shall run parallel to Highway 103 under the "Ditch" allowance of the OHV Act.

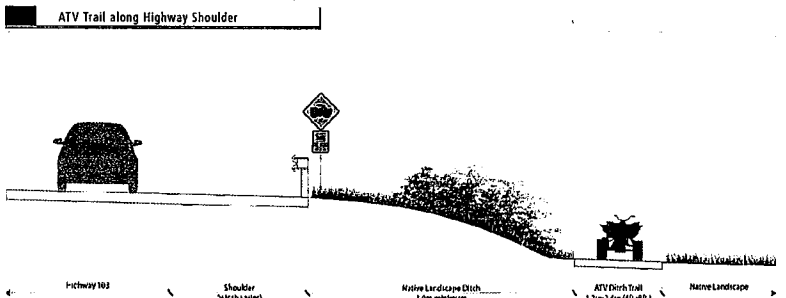
ALLOWED

- Forest access roads controlled by the Department of Natural Resources
- K-class roads control by the Department of Transportation and Infrastructure Renewal
- Private roads that are designed to be accessible or are accessible to the public for OHV use where the landowner has given written permission.

- Ditches of highways under these conditions: In daylight, either with or against the flow of traffic; at night, in the same direction as the traffic on the same side of the road as the ditch where you are driving.
- A road or highway outside a city, town, or village that is impossible because it is covered with snow and it is not normally cleared.
- Cross a non-controlled access road or highway at a right-angle (driver's license required).

NOT ALLOWED

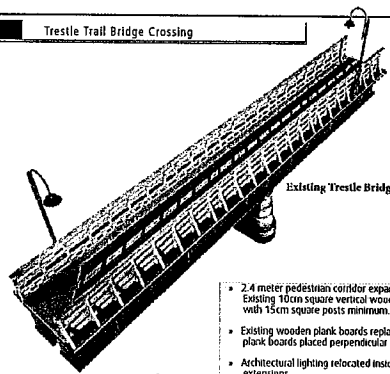
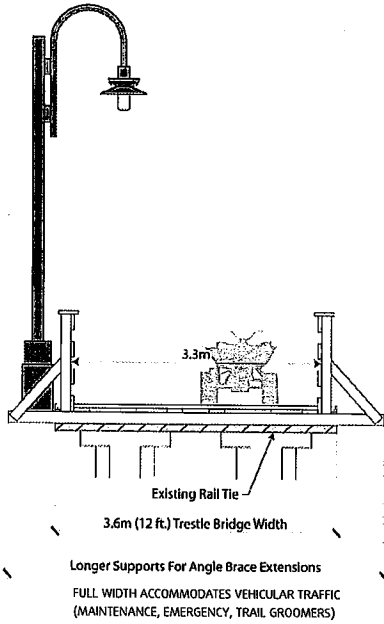
- In no-ride zones or on land that is set aside public land.
- On or across a controlled-access highway. Most 100-series highways are controlled access.



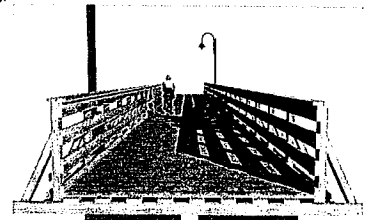
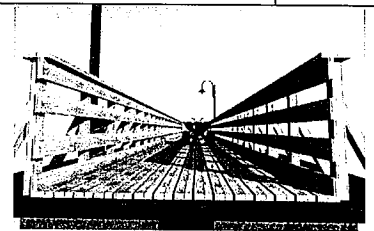
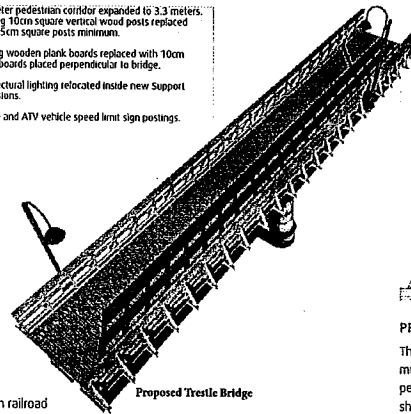
TRESTLE BRIDGE CONNECTION

Bridge types and suitability's are detailed in the Nova Scotia's Trails Federation's Trails Construction Manual. The Manual provides detailed information on crossing water courses and wetlands. New or retrofitted trail bridges must comply with the Canadian Highway Bridge Design Code (2002).

Trestle Trail Bridge Crossing



- 2.4 meter pedestrian corridor expanded to 3.3 meters. Existing 10cm square vertical wood posts replaced with 15cm square posts minimum.
- Existing wooden plank boards replaced with 10cm plank boards placed perpendicular to bridge.
- Architectural lighting relocated inside new Support extensions.
- Bicycle and ATV vehicle speed limit sign postings.



PROPOSED TRESTLE BRIDGE

The proposed Trestle Bridge shall have a 3.3 meter width multi-use corridor allowing access across Liverpool Bay for pedestrians, bicyclists, and ATVs. The renovated bridge shall remain of wood construction reinforced in post and deck thickness. The deck will also reorient boards to run perpendicular to the railway as opposed to the existing parallel orientation. Horizontal wood supports will attach to railroad ties allowing for angle bracing to support the railings. This extended portion of the bridge will also support the existing light fixtures.



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SWITCHBACKS & CLIMBING TURNS

A connection link from the Trestle Trail bridge to Highway 103 will be plotted through the adjacent woodlands and undulating topography. This link will occur approximately 120 yards beyond the Trestle bridge and will serve all ATV users looking to continue on the proposed trail. As a result of the topography, switchbacks and/or climbing turns may be required to safely provide user access to the elevated Highway 103.

Switchbacks and climbing turns are further detailed in the Joe Wernex's Off-Highway Motorcycle & ATV Trails Guidelines for Design, Construction, Maintenance, and User Satisfaction manual (1994). The manual provides detailed information on developing switchbacks, design minimums, armoring switchbacks, and climbing turns.

GUIDING PRINCIPLES - CLIMBING TURNS

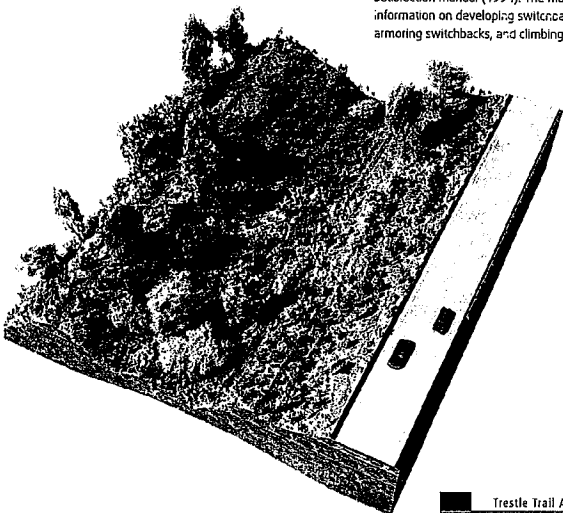
- Switchbacks can be easily eroded, as such, climbing turns (turns with a larger radii) are recommended wherever possible. Turns with a radius of 2.4 m to 3.0 m would be considered climbing turns.
- Barriers should be included throughout the climbing turn to discourage shortcuts. Barriers include natural vegetation, logs, boulders, rock walls, or construction of a thru-cut.
- Climbing turns may carry a cross-slope between 30 and 45 degrees if required.
- All climbing turns constructed shall require mechanical compaction to better facilitate the extra weight and spinning/skidding of ATV tires.

SWITCHBACKS

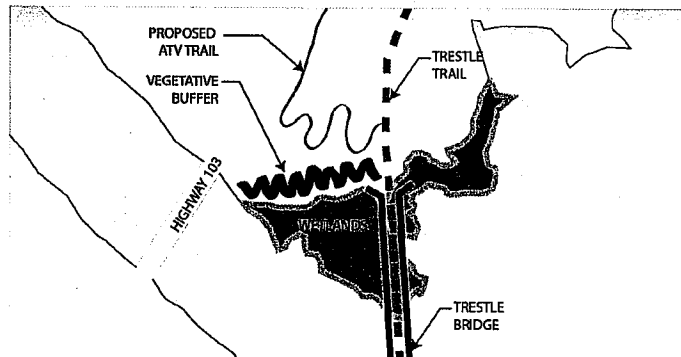
- Tread approaches to the turn should be 1.5 m to allow the rider to comfortably approach the turn.
- A level area of terrain should be sought for the most appropriate location of a switchback. The grade of the trail should be low as possible throughout the turn of the switchback.

SURFACING

- Existing native soil will provide the ideal base for ATV only trails.
- If subgrade conditions are found unsuitable, geosynthetics such as geo-textile material may be used over the subgrade and then compacted with new suitable base material.
- Alternatives include Interlocking concrete pavers, concrete blocks, geopavers, geogrids, and geocells

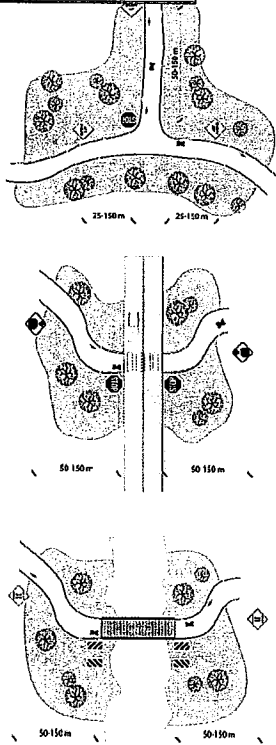


Trestle Trail Access Path



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ATV Trail Crossings



4.2 CROSSINGS

ATV CROSSINGS

GUIDING PRINCIPLES

- » Crossing of major highways should be discouraged and avoided when possible.
- » When unavailable and where legal under the OHV Act, crossings should occur at a right angle to road traffic, and permit OHV users to have a 150m view in each direction.

DESIGN CRITERIA

- » Signage shall be posted for all trail users indicating approaching crossing. Crossing shall have posted stop signs. Roads/Highways shall also have posted signs regarding ATV crossing zones.
- » Crossings will be designed at 90 degree angles wherever possible.
- » View corridors will be maximized to allow trail users to comfortably approach the crossing zone.
- » Crossings should avoid long, straight sections prior to approach. Trails shall curve just before crossing to slow ATV riders down.

SIGHT DISTANCE

The design of a successful multi-use trail network provides bicyclists and ATV riders the ability to see a sufficient distance ahead while using the trail.

Sight Distance

- » Motorized trail use shall require a horizontal sight distance visibility of 120 meters on inside curves. Removal of trees, limbs, and woody brush growing around the trail will be required.
- » Motorized trail use shall require a horizontal sight distance of 46 meters from both directions of an intersection.
- » Removed vegetation may be replaced with low, native shrubs and/or wildflowers.
- » Cycling and pedestrian trail use (exclusive) shall require a horizontal sight distance of 45 meters on inside curves.

Stopping Distance

- » Minimum sight distance will increase in relation to design speed.
- » Stopping distance relates to two key factors. One is the distance travelled after the obstruction has been seen and before brakes are applied. The second is the distance while brakes are being applied. See the adjacent chart for manufacturer's specifications of design stopping distance.

4.3 SIGNAGE & WAYFINDING

Signage types and suitability's are further detailed in the Nova Scotia's Trails Federation's Trails Construction Manual. The Manual provides detailed information on signage purpose, location and content. Sign types include both pedestrian, bicyclist, and ATV general information.

Sign Types

- » Primary Orientation
- » Directional/Markers
- » Regulatory
- » Information
- » ATV Only

PRIMARY ORIENTATION - Map elements are essential to provide fundamental, route-wide orientation, route information and etiquette. These sign types should be locations at primary trail route entry points and will also serve to create a sense of arrival. These elements are important to expose first-time users to the route's signage aesthetic and brand. In this respect, they will serve as highly recognizable icons for route users seeking wayfinding information. For ATV use, one way to

reduce conflict on multi-use trails is through appropriate indicators that this trail is shared by ATVs and to provide clear indicators of where this usage occurs. This will inform all trail users in advance, providing realistic expectations about the trail and avoiding misconceptions about the trail.

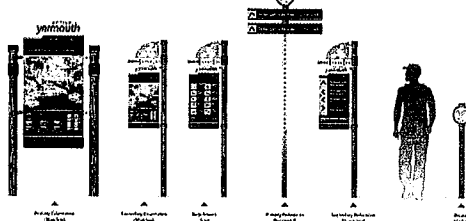
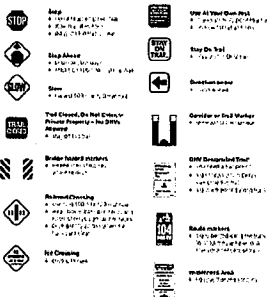
DIRECTIONAL/MARKERS - These markers are simple, providing only direction of trail to guide users and provide assurance along proper path. They are infrequently used, but will be located at key route intersections and beginnings/ends of trails. For multi-use portions of trail, cyclists will be provided with one-way or two-way directional information. For ATV use, directional signage will also have reflective markers (facing both directions) installed to ensure riders recognize all trail signs.

REGULATORY - This sign is designed to display regulations for a given trail route, provide etiquette and to serve as a reminder of what activities are and are not permitted. For cyclists and ATVs, this may include speed, yields, and stops. This type of signage must accommodate

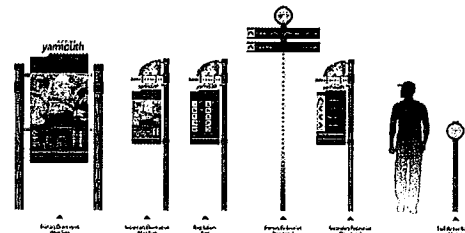
for sight distance as well and be placed appropriately (at least 15 meters, but ideally 30 meters ahead of subject). Additionally, for ATV use, "Please Stay On Trails" signage must be placed along routes for multi-use safety and vegetation trampling. "Reduce Speed" signage will also be required for surface protection along the multi-use trail and along the expanded Trestle Bridge crossing.

INFORMATION - This type of signage will provide users with general resource information such as location and distance to items such as shelter, rest stops, wash rooms, water source, etc. For ATVs, Information signage may provide users with trailhead information, laws, regulations, gasoline, food, lodging, and emergency services.

ATV Only - For trail portions involving only ATV usage, sign etiquette varies from standard multi-use trails. This signage shall maintain similar symbology and branding, however, the aesthetic and material may change. Proper signage here should be rustic and unobtrusive. Avoid bright colours and synthetic materials wherever possible as these may detract from the user experience.

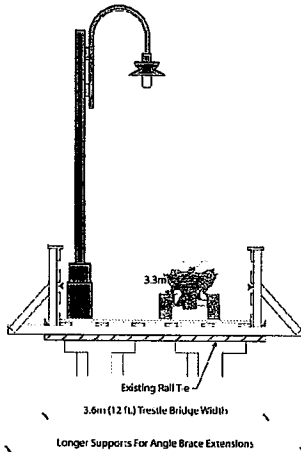


Trail Signage Example



4.4 LIGHTING

Lighting on trails facilitates trail users visibility of each other and adjacent elements such as crossings, bridges, intersections, and signage. Lighting permits nighttime use of trail amenities, which is especially valuable in the fall or spring when daylight periods are shorter.



Guiding Principles

- Regulation and warnings signs for motorized use shall be reflectorized or illuminated.
- ATVs shall comply with the required and prohibited lamp provisions of the Off-Highway Vehicles Act (Ch. 323 of the Revised Statutes, 1989, Rev. 2005).
- Roads and highways are typically lit to roadway standards. At road crossings, additional lighting shall be provided to ensure safety.
- Trails will be lit based upon proposed volume, location, and context; generally these features are lit in concert with existing lighting.
- Multi-use trails shall be lit at a minimum of 5 lux, with a maximum uniformity coefficient of 6:1.
- Lampposts along multi-use trails shall be 6 meters tall, with a lateral clearance of 1 meter.
- Lampposts should be spaced to provide for the required illumination levels and uniformity coefficients.



Trail Lighting



Queens County Shared Use Trail Feasibility and Master Plan

4.5 NOISE MANAGEMENT

In allowance of the multi-use trail to include motorized use (ATV), sound management is a subject that should be considered. Information about who is able to use the trail shall be clearly posted at all primary trailheads. Adjacent neighbourhoods and the local community should also be informed about motorized sound impacts and ways to minimize those impacts.

Mitigating Noise, Natural Conditions

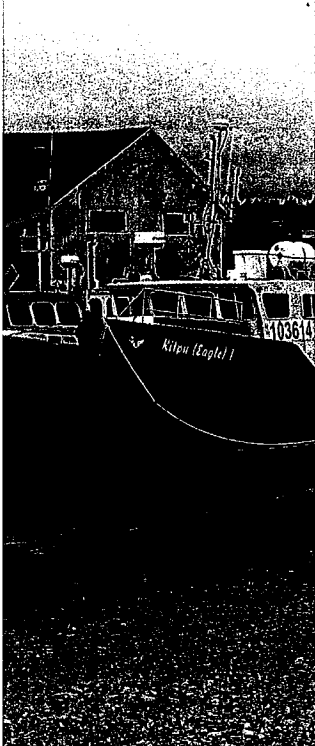
- TERRAIN** - Using the land can be one of the most effective methods to control noise. Whenever possible, motorized trails shall be located on the back side of ridge lines and face in opposite direction of nearby homes or other sensitive areas. Trails may also be constructed in lowland corridors such as dry stream beds, allowing the climbing elevation around the trail to mitigate noise.
- VEGETATION** - While extremely dense plantings of grass and shrubs can soften sound, generally, landscape plantings do not assist in effective noise management. Trees also do little to properly mitigate sound. Where vegetation can be effective is in undeveloped areas which can serve as natural barriers. Here, only remove vegetation where necessary along trails and preserve as much of the natural environment as possible. This will go a long way in sound mitigation.

- DISTANCE** - The most successful way to control sound is through distance. Sound levels do typically decrease by 6 decibels for each doubling of distance. Thus, in design of the multi-use trail and where motorized use is allowed, a reasonable distance buffer must be incorporated where land development and design permit.

Mitigating Noise, Additional Measures

- WALLS** - Vertical walls constructed of brick, concrete, or stone can provide adequate sound barriers, however, these must be located near the source of the sound to be effective. Walls must also be constructed higher than the source of the sound.
- EARTH BERMS** - Similar in nature to walls, earth berms involve moving dirt into a series of large piles to act as a buffer against noise. Again, like walls, berms must be formed near the source to be effective and be mounded above (2-3 meters high) the source of the sound.

- SPEED** - Speed of motorized vehicles may contribute to excessive noise levels and can be controlled effectively by implementing Speed Limit sign postings wherever necessary. This includes nearby residential areas, bridges, trailheads, intersections, streets, campgrounds, etc.
- SIGNAGE** - It is important to let trail users know what type of trail use is allowed and where they may encounter a motorized vehicle. Often, users are happy to share a multi-use trail as long as they are knowledgeable about it in advance.



4.6 TRAIL MAINTENANCE

To preserve the visitor experience, it can be expected that annual trail maintenance will be required along all trails motorized and non-motorized. Trail maintenance may vary from year to year, but debris cleanup, drainage problems, erosion, and resurfacing may be required depending on trail type and use. The local municipality as well as volunteers can be expected to share the responsibility of trail upkeep.

Guiding Principles

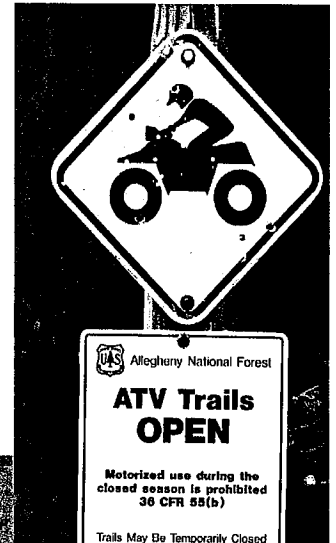
- **COST** - Annual trail maintenance costs will range between 10-20% of the original construction cost.
- **OBJECTIVES** - Trail maintenance varies depending upon items such as safety, trail purpose, design standards, location, and users. Objectives per trail section should be documented ensuring maintenance standards have been met for these corridors.
- **MAINTENANCE RECORD** - A maintenance record should be maintained detailing the costs and repair work completed. The record should also include maps and locations of past, present, and future work to be completed on the trail. This record will go a long way in providing evaluation of trail use, construction problems, improvements necessary, or if trail redesign should be considered.
- **INSPECTION** - Trail should be evaluated primarily based upon the frequency of use, however, other considerations would include after severe storms, or local gatherings/events. If a seasonal schedule has been put into place, trail evaluations should be completed prior to trail opening and after trail closing.

Checklist

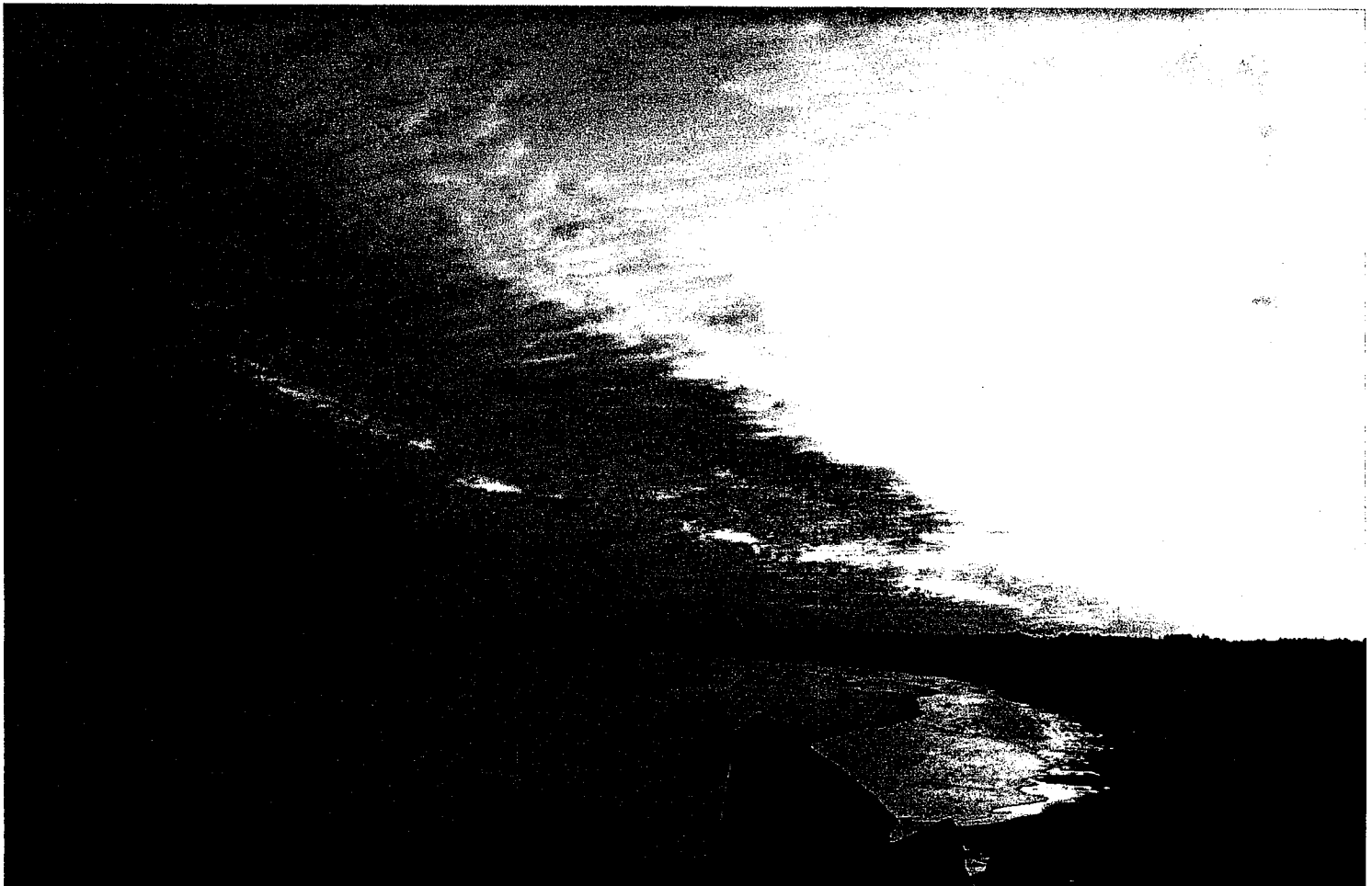
- Trimming overgrown vegetation, removal of dead tree limbs
- Remove vegetative debris from trails
- Clean out any adjacent ditches, swales, or culverts
- Evaluate and monitor erosion areas and repair if necessary
- Groom trail, regrade if necessary
- Repair any broken, damaged, or vandalized signs and/or posts along trail
- ATV trail use may require regrading and compaction of the existing trail surface
- Structural inspection may be necessary on occasion in regard to trail elements such as bridges, culverts, and retaining walls.
- **DUST** - To facilitate problems with dust, control agents should be considered to be used wherever necessary, but particularly at crossings and sharp curves. Speed reduction can mitigate this maintenance issue.

Rules and Regulations

- **INFORMATION** - To take steps towards prevention of maintenance, users (public) must be informed and educated about what is and is not allowed along the trail. This information can be provided through maps, signs, pamphlets, local authority, and frequent trail users as well.
- **LITTER** - Receptacles are not required throughout a trail network. Only place receptacles at trailheads and egress points.
- **PETS** - Signage regarding dog policies must be located at all trailheads. This includes leash regulations and cleaning up after your pet.
- **CAMPING** - Signage regarding whether camping and/or camp fires are permitted must be located at all trailheads.
- **USAGE** - Ensure public is fully aware of all uses permitted on the trail. Include maps and signs at all trailheads to indicate locations of uses and hours of permitted use.
- **REGULATIONS** - Indicate at all trailheads what violators can expect if they do not follow all rules of the trail. Penalties may include fines, denial of future access, seizure of drivers license (ATVs), etc. Also indicate who enforces these regulations, and appropriate contact information to help facilitate public trail monitoring.
- **SECURITY** - Police contact information should be located at all trailheads and at trail intersections where design permits. Vandalism may also fall under this category, especially at trailhead locations.



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5: Moving Forward

This report describes the long term vision for a continuous shared use trail linkage in Queens County, and outlines an achievable and feasible phasing plan. The phasing and prioritization strategy described suggests a methodology for the Queens County ATV Association to move forward towards the implementation of this vision.

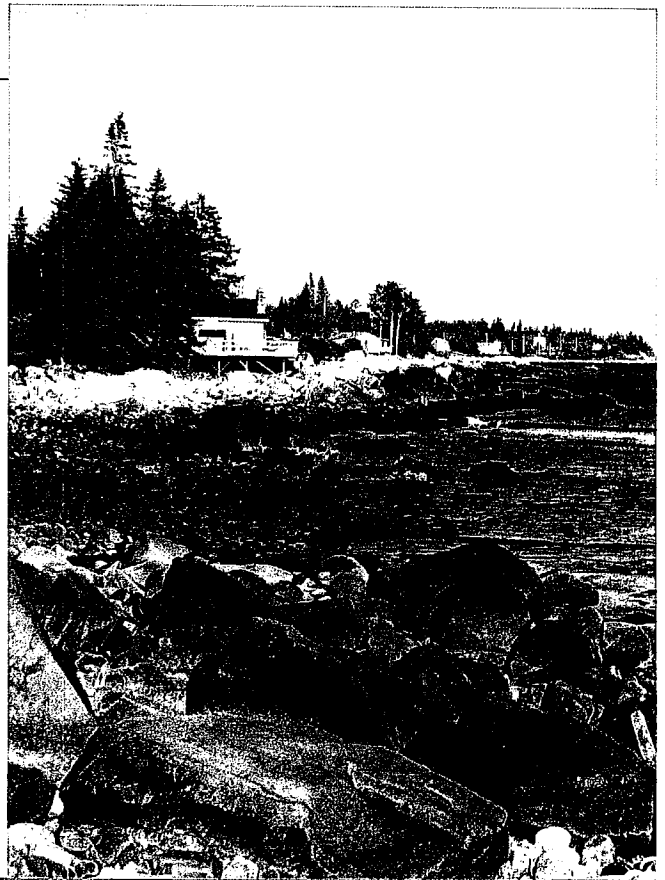
5.1 PLAN PRIORITIZATION

This report describes both a long-term vision and a short term phasing strategy for the development of a shared use trail in Queens County. 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.

Sections of the linkage with a relatively high ease of implementation should be given the highest priority, especially where cost is not prohibitive. Larger and more complex linkages or connections 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:

- » Public support
- » Land availability / ability to create a contiguous link
- » 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;
- » Co-ordination with other on-going municipal projects;
- » Logical design and construction sequence
- » Implementation Priorities



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Queens County Shared Use Trail Feasibility and Master Plan

Other Considerations

In the short term, the QCATVA should work with the Department of Natural Resources on changing the trails designation for the rail corridor between Liverpool and Silver Rock Road. This section may be the most likely to implement in the short term.

For off-road opportunities, land / unopened right-of-ways should be earmarked or set aside for future multi-use trail development. The Trails Association should work with private landowners along the route to obtain permission to cross private lands.

Contact should be made with Transportation Infrastructure Renewal (TIR) regarding the planning and timing for the new crossing of the Broad River, to formally inquire about the possibility to include a trail crossing in the detailed design plans.

5.2 BUDGET ESTIMATES

The implementation budget has been broken down by route section and option, and the entire trail connection has not been costed overall. This will facilitate implementation of the various segments as funding becomes available.

Some of the capital required may already exist within annual budgets for trails work. Additional funds may be required for those routes that will need detailed design to be completed. In that instance, 15% should be added to the estimated cost, plus a 20% contingency. Exact costs will depend upon detailed designs and bidding climate prevailing at the time of implementation. Certain segment options will require detailed design to facilitate quality implementation, while others will be more straightforward to construct.

Materials and quantities were derived from measurements taken from the georeferenced base mapping. This level of accuracy is sufficient for general planning; however, more accurate estimates will be required during the detailed design and construction stages before going to tender with proposed work. Actual costs may be plus or minus 20%. All quotes reflect Spring 2012 'installed' prices, not including tax. With recent ballooning petroleum prices, prices could increase rapidly in line with petroleum.

The budget estimate does not include costs for long-term easements, land purchases or private improvements. Miscellaneous items/costs are outlined in the various sub-area descriptions and these include allowances for grading, catch basin relocation and special features.

It is important to recognize that the drawings and designs in this document are conceptual only. A qualified design firm/team should be commissioned to prepare schematic and detailed design drawings and contract documents for each individual project. This additional cost has been accounted for in the cost spreadsheet.

Maintenance Budgets

The capital costs to develop the trails are only one half of the financial equation. The costs of ongoing maintenance should be taken into account when budgeting for trail development and expansion. However, the incremental costs for the maintenance of these facilities are generally low, and the potential to partner with either the County or the Province should be further explored.

Trail signage is generally thought to require replacement at a rate of 20% of signage per year, starting after the sixth year.

Maintenance of off-road, soft surface multi-use trail can range from \$1,000 to \$1,500 per kilometer of trail (3.5m wide trail), depending on service standards. Maintenance activities could include stormwater management, sweeping, moving of shoulders, surfacing improvements and repairs, tree and shrub pruning, and waste management.



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Queens County Shared Use Trail Feasibility and Master Plan

Route Segment Costing

[illegible]

Queens County Shared Use Trail Feasibility and Master Plan

5.3 NEXT STEPS

The Queens County Shared Use Trails Plan is an evolving document. Implementation will occur through a suggested three phase process that allows for checks and balances of the program elements, as priorities change, and opportunities become available.

Phase One: Preliminary Review

The first step towards implementation of the plan is adoption and ratification of the plan by the Queens County ATV Association. Upon approval of the client, the report should be presented to the Region of Queens Municipality Council. The plan should be endorsed in principle, which will still permit the implementation of the various segments and policies on an individual basis.

Once the plan has been adopted in principle, it will be important to determine administrative ownership. This owner will be the group responsible for the implementation of the various sections of the trail. This should break down into two key owners - the Region should be charged with Improvements to the Trestle Trail Bridge, and trail development on their land, and the newly formed Community Trails group should work towards the implementation of sections on Crown and private lands.

Phase Two: Detailed Design

Once feasibility of the route linkage has been confirmed, detailed design can proceed. Detailed design may occur with or without coordination with ongoing capital improvement projects. Design should follow the recommended facility typologies and standard Municipal and Provincial design guidelines. Once detailed design has commenced, budget should be set aside for implementation.

Certain sections of the trail will be able to proceed with relatively little effort towards detailed design. These include sections that are fairly straightforward to bring up to a condition suitable to permit safe trail use, such as the rail bed between Bog Road and Silver Rock Road. Other sections will require formalized detailed design, such as the ramp from the Highway 103 to Trestle Trail section.

Phase Three: Monitoring

As the various plan elements become implemented their design and use should be monitored. Monitoring will determine if the trail section's design functions as intended, and the section's use is as intended. Monitoring will be essential to ensure proper use of the trail, and that no unanticipated concerns with design or implementation have arisen. Monitoring will also be essential to ensure that any relevant policy amendments or changes that impact the development of the trail are integrated into the planning process.

5.4 FUNDING OPTIONS

Funding of the Queens County Shared Use Trail Plan will require a financial commitment, and funding support should be requested from the Municipality for those assets in urban areas. Funding sources may include development charges, the general tax base, and applicable federal or provincial funding opportunities. To assist in funding the capital and operational costs of this trail, the Community Group must pursue external funding sources. Such options may include:

- Off Highway Vehicle Infrastructure Fund;
- Federal or Provincial Gas Tax Monies;
- Federation of Canadian Municipalities Green Municipal Fund;
- Atlantic Canada Opportunities Agency (ACOA)'s Building Canada Fund or Innovative Communities Fund;
- Federal Government's ecoMobility program
- Canada-Nova Scotia Infrastructure Program;
- Private corporate environmental funds and donations;
- Service Clubs, community fund-raising & in-kind donations.

5.5 WHY MAKE THE INVESTMENT?

The implementation of the Queens County Shared Use Trail plan will involve a significant effort on the part of the Community Group AND the support of Municipal Council, not just in terms of capital and operational costs, but also in terms of personnel, time, and energy. However, there are a number of significant and quantifiable benefits that the Municipality and broader community at large will enjoy and these reasons are why implementation is so critical.

Environmental Benefits

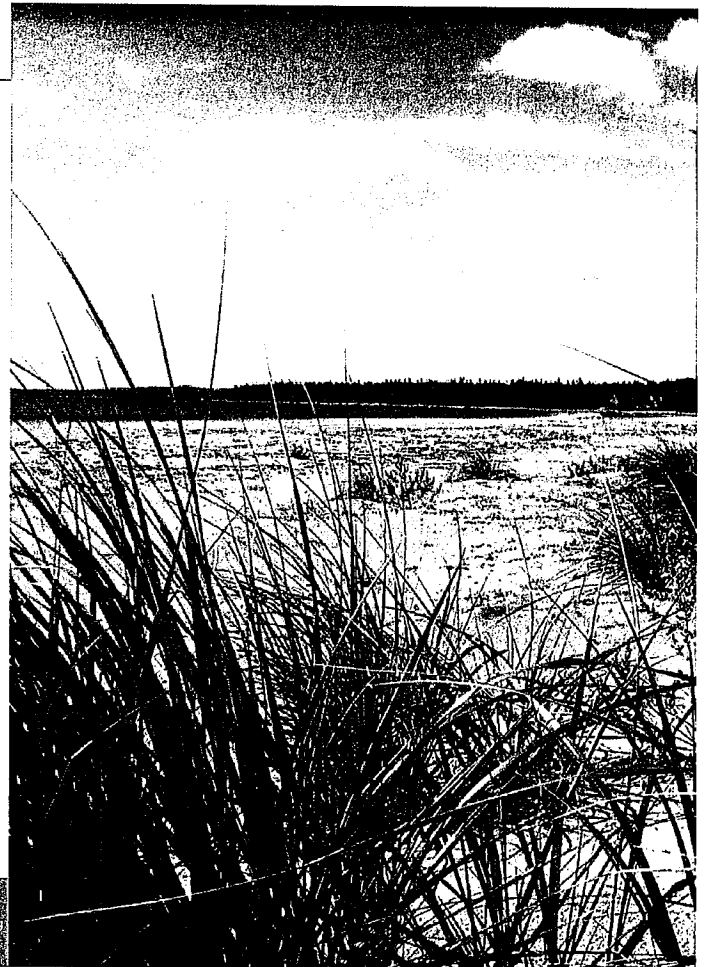
- » conservation of the rail corridor as public open space lands;
- » improved awareness and access to natural resources;
- » Public Health Benefits
- » decreased levels of inactivity-related health problems (such as obesity)
- » stress reduction through recreation;
- » improved liveability of the community;
- » improved social interactions within the community;

Economic Benefits

- » cost savings through reduced roadway capital and maintenance costs (even when considering the addition of on-road facilities);
- » cost savings through reduced parking lot requirements;
- » direct and indirect tourism dollars as people come to enjoy the trail facilities;
- » employment creation through direct and indirect plan impacts;

Transportation Benefits

- » Reduction in traffic;
- » improved mobility for community members without access to a vehicle;
- » improved connectivity of community assets;



Trestle Trail Bridge: Shared Use

May 27, 2016



Background

1996: Region of Queens Municipality became owners of former CN Rail Bridge

1999: Bridge converted into a pedestrian bridge



Engineering Studies

Date	Engineering Report	Key Findings
1999	April 13, 1999 O'Halloran Campbell	• Severe deterioration of all structures • Recommendation to monitor deterioration • Severe corrosion in steel components
2002	June 26, 2002 O'Halloran Campbell	• Pier 1 "Significant further deterioration"
2014	November 24, 2014 AMEC	• Very Severe deterioration on North Wall, Pier 1, Pier 4, and South Embutment • All other piers severely deteriorated • Photos demonstrate accelerated deterioration • Recommendation to cease pedestrian use until repairs made



Photos: Pier 1



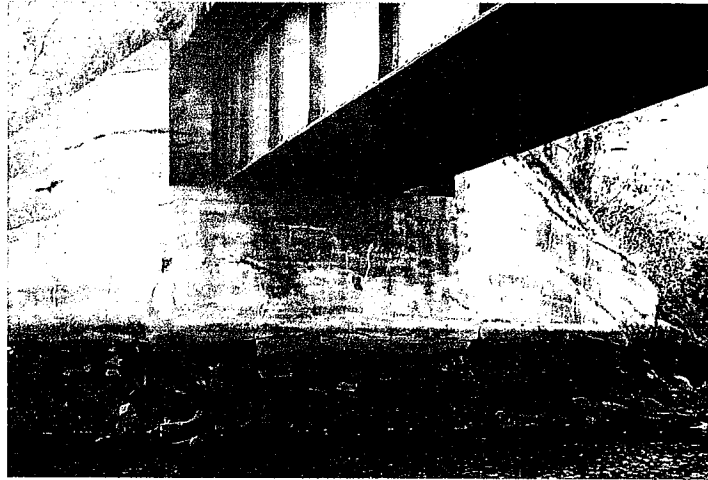
Photos: Pier 4



Photo: West Wing Wall, North Abutment



South Abutment



Materials Analysis

Large piece of broken concrete from South Abutment Tested.

The following tests were carried out on the concrete samples.

- Hardened Air Void Content Analysis (ASTM C457-12, Procedure B).
- Ultrasonic Pulse Velocity (ASTM C597-09).

Recommendations

- 1. The severe deteriorations at the South Abutment, Piers #1 and #4 must be repaired immediately to prevent further deteriorations. Remaining repairs at the other concrete supports must be completed as soon as possible to prevent further deterioration.
- 2. **Pedestrians and all types of vehicles must be immediately prevented from using the bridge until further detailed studies and analyses have been completed and after any resulting recommendations have been addressed.** This recommended restriction to the use of the bridge is based solely on the visual observations made by AMEC and will need to remain in place until further detailed investigation and engineering analysis has been completed.
- 3. Complete a detailed survey over the full height and structural analysis of each pier and abutment to determine the extent of sound concrete and its structural capacity.
- 4. Complete an analysis of the bridge based on its intended use to determine loads imposed on each support and evaluate the results against the results determined in Item 3 above.
- 5. Complete a structural condition assessment of the bridge's steel superstructure.

Council Direction

- At the February 24, 2015 meeting of Regional Council, the following motion was approved:
That Council of the Region of Queens Municipality postpone further action on the AMEC Engineering Study dated February 2, 2015.
- At the March 10, 2015 meeting of Regional Council (Item 16.1) several Councillors announced a public meeting with the community to discuss alternative suggestions for trail use as well as funding partners.

Ultimate Choices

- Repair bridge
- Remove bridge



Council direction October 13, 2015

Approved Motion: That the Council of the Region of Queens Municipality request staff to proceed with the exploration of costs associated with repair / destruction of the Trestle Trail Bridge.

Discussion directed staff to investigate financial assistance.

Option: Reconsider Policy direction regarding Shared Use Trails

- Preliminary discussions with funding agencies:
 - ACOA
 - Off Highway Vehicle Fund
 - Provincial Staff
 - Used a \$750,000 figure for preliminary conversation based on:
 - 3 pier French River Bridge (Tatamagouche) costing \$100,000 per pier (we have 5), plus
 - Money for engineering and design
- *Could be much less, or more

Benefits of Shared Use Trails

The general benefits of approving a shared use trail plan are:

- Economic: This trail would provide connectivity for off highway vehicles from Lunenburg to Shelburne. Currently, ATV's are unable to make this trip due to the distance between fuel stations and capacity to carry fuel. As such, the new trail connectivity would provide direct and indirect tourism dollars. The Report on Direct Spending, Attachment Two, overviews the potential economic benefit to the Region.
- Environmental: The trail provides an active transportation solution, recreational amenity, and increased access to the natural environment.
- Social: The trail provides connectivity for residents, particularly from Milton / Main Street area to the centre where grocery stores are located.

Funding

- Providing policy direction to be a shared use trail provides further funding options for the community and Council
- Off Highway Vehicle Funding
- ACOA Infrastructure Funding
- Other programs

Approval in Principle

With the long term implementation of a shared use trail, there are multiple stakeholders, land owners, and roles and responsibilities to be clarified.

The purpose of the Approval in Principle is to give staff the overarching strategic direction to work with stakeholders.

Public Engagement Plan:

With the approval in principle, the direction from council is established. Staff will be able to work with stakeholders, particularly Queens Rails to Trails Association, to develop more detailed implementation plans to achieve the connectivity of the trail as per the master plan.

Recommendation

It is recommended that the Council of the Region of Queens Municipality:

- 1. Approve, in principle, the Queens County Shared Use Trail Feasibility and Master Plan, as contained in Attachment One of this report; And,***
- 2. Direct staff to prepare funding applications for the remedy of the Trestle Trail Bridge as outlined in the Discussion Section of this Report.***

Thank you

