



Chezzetcook Musquodoboit Trail Concept Plan

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REPORT

Submitted by:

**Chezzetcook Musquodoboit Trail
Association**

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1. Project Overview

The Chezzetcook-Musquodoboit Trail Association is proposing to transform approximately ten (10) kilometres of the abandoned rail bed between the East Chezzetcook Road and the Railway Museum in the Village of Musquodoboit Harbour to a multi-use trail. The project essentially upgrades the surface of the rail bed to provide safe public access for the widest possible range and volume of active trail users. The upgrade enhancements will be directed towards Active Transportation or physically active trail uses.

This trail project would link the area's schools, community centres, many residential homes and commercial businesses as it parallels the No. 7 Highway. As a result of its abandoned status over the past twenty years, the mostly 100 foot wide abandoned Right of Way (ROW) remains wooded along much of its length, with limited public access and a surface that is in extremely poor condition.

This section of the trail corridor is one of the last remaining undeveloped segments of the Trans Canada Trail which stretches from Gibraltar Rock in Meaghers Grant to Dartmouth, an approximate trail span of 64 kilometres. It is connected on the

eastern end to the Musquodoboit Trailway system and in the west to the Chezzetcook marsh. The Chezzetcook marsh section also remains undeveloped.

Work to upgrade the trail will include extensive ditching along the trail to provide effective drainage, and removal of windfall trees and young growth invading the trail bed. The trail surface will be built up and resurfaced with fine gravel and existing bridges will be decked over and provided with railings to create a safe walking and cycling surface. Some short sections of new trail will be required to connect to safe street crossings.

2. Chezzetcook Musquodoboit Trail Association

The Chezzetcook-Musquodoboit Trail Association (CMT) is a volunteer organization whose primary goal is to make the trail useable to promote physical activity and healthy lifestyles. Formed in 2004 as a non-profit organization, the CMT has been a participating member of the Halifax Regional Trail Association (HRTA) for the past two years and is also a member of Nova Scotia Trails.

CMT's mission statement focuses on Active Transportation, which supports the widest possible range of human/muscle powered activities (see Proposed Uses).

3. Policy Framework for Trail Development

(1) Provincial Departments:

The following is from the NS Rails to Trails Policy: [all appendices may be found at <http://cmttrail.ca/appendix.html>; selected short appendices may be found at the end of the document]:

'The NS Department of Natural Resources (DNR) and NS Health Promotion & Protection (HPP) share responsibility as the lead Provincial agencies in the management and use of abandoned railway corridors. The Province recognizes that linear rail corridors present opportunities for recreation, tourism and community development. Municipalities and/or community-based trail groups are encouraged to work in partnerships with the Province, by assuming primary responsibility for active trail development and management. Trail development occurs on a formal basis, through Crown Land management agreements with DNR'.

'Health Promotion & Protection work with municipalities and community groups to assist with planning, design, funding and management of abandoned railway lines for recreational purposes. HPP liaise with rail trail proponents and DNR with regards to agreements required to authorize trail development'.

(2) Municipal Support:

The Halifax Regional Municipality (HRM) has committed a team of trail staff to resource various trail projects and trail associations in HRM. HRM annually distributes capital towards trail projects which also provides trail groups with

leverage funding to access many other funding partners. Direction for the Regional Trails Program comes from three documents; the HRM Regional Plan, the Active Transportation Plan and the 1997 Concept Plan for Regional Trails. All three documents contain a foundation strategy that supports a healthier lifestyle and active living by developing walking and biking opportunities.

(3) Regional Support:

The Halifax Regional Trails Association (HRTA) is an "association of associations" representing individual community organizations whose primary responsibility is trail development. Each group is involved in the planning and/or development of trails in their own community. The association has also played a significant role in advising HRM trail staff on annual trail capital allocations.

4. Proposed Trail Uses

Consistent with HRM's vision of an active and healthier region, the Chezzetcook-Musquodoboit Trail Association proposes the rail trail be used for the widest possible range and volume of physically active trail uses. CMT strongly feel that physically active use for all persons provides a trail that presents the best interest for the majority of the community.

According to the NS Trail Development Manual, this rail trail would be classified under the Countryside Trail and an Urban Style Trail. The



trail type is Front Country and Urban/Multi

Purpose Trail that will provide for the following activities:

- Walking, endurance hiking, power walking
- Cycling
- Wheel chair and stroller use
- Cross Country Skiing
- Snowshoeing
- In line skating and skate boarding on paving
- Heritage and nature interpretation/appreciation
- Wildlife/bird watching/observations

The trail is alongside sensitive marshlands, shorelines and existing residences where accommodating motorized use standards or promoting motorized recreational vehicle use on the trail is not recommended.

5. Local Results:

The rail trail will provide a world-class coastal trail destination that connects and enhances communities with safe, outdoor recreation enjoyment and active transportation.

The highest demand in tourism attractions are the



outdoor, nature friendly destinations where people have opportunities to experience coastal and landscape scenery. Eastern Shore businesses

desperately seek economic opportunities to attract more visitors to experience the spectacular coastal communities other than by vehicle. The rail trail provides this infrastructure as proved by the Musquodoboit Trailway which has been extremely successful in attracting thousands of visitors from HRM and beyond.

Marine Drive, Highway 207 and Highway 7 are not safe for walking or cycling. The narrow shoulder of the road is not sufficient for any safe activities. With residential growth and increased traffic, there is a need for a linear walking and cycling system for the community and for visitors. It is an opportunity to enjoy outdoor coastal scenery just minutes from the metropolitan core.

a. Regional Impact:

HRM will direct capital, maintenance and operations funds on sustainable Active Transportation corridors. Several community trail associations apply to the HRM Trail Program for capital each year and funds are allocated strategically to maximize public benefits.

Motorized use has a detrimental impact on the numbers of Active Transportation participants using a shared use trail according to the NS Trail Survey Report by Gardner and Pinfold (1999) which reports that 75% of trail users avoid trails with motorized, off-road vehicles. Therefore, HRM is supporting the development of a consistent Active Transportation, greenway corridor.

HRM has established a goal of reducing greenhouse gas emissions by 20% by the year 2012. In the HRM's Active Transportation Plan, road transportation accounts for 70% of transportation related greenhouse gas emissions with 45% originating from light cars and trucks. Short distance motor vehicle trips are the least fuel-efficient and generate the most pollution per kilometer. The rail trail will be a future AT artery linking community destinations

According to Dr. Richard Sparkman, School of Business Administration Acadia University, quoting the US EPA:

- 12 bikes = 1 automobile commuter
- 7645 recreational bikers = 1ATV
- 1688 serious bicycle riders = 1ATV
- The average ATV gives off 108 TIMES the pollution of an SUV per hour.
- Dirt Bikes give 150% more pollution than an ATV.
- 2 hours on a jetski = 100,000 km by car

Other statistics:

- Using Health Canada data:\$354 million is the cost to NS Government due to the results of inactive life styles
- 700 premature deaths a year due to inactive lifestyles
- One dollar to Active Transportation gives over \$2.94 (CDC study) direct health costs
- The future AT route in Digby-Kings Counties will pay back costs in 30 months in health savings alone! (Grand Pre-Berwick etc)
- For the first time in recorded history the life expectancy of youth is less than of their parents. ¹

This community where the rail trail is proposed is located within the HRM Regional Plan's Rural Commuter Designation and defined as a growing residential community. The intent of this designation is to focus low to medium density uses within specific centres, i.e. Porters Lake and Musquodoboit Harbour. The AT corridor will link these communities [see Appendices].

HRM envisions the Trans Canada Trail from Musquodoboit Harbour to Dartmouth as a continual, Active Transportation, green corridor. This has been supported by the formal

designation of the line through the Cole Harbour/ Lawrencetown Coastal Heritage Park System as Provincial Park and the Musquodoboit Trailway system which are non-motorized, off-road trails. Those trails are managed by community trail groups and have become very popular and successful. A motorized section between the non-motorized sections would be very difficult to manage on an ongoing basis.



b. Concerns and Justifications:

The Marine Riders ATV Association expressed apprehension that ATV/motorized use would be excluded from riding on the former railway. The CMT requested information on plans where the OHV use originates and where the desired destinations are located, if landowner permission would be obtained and how to avoid ecologically sensitive areas. However, a response has not yet been received.

The Provincial 'Shared Use' planning process presently assumes that trail groups will include all trail uses. This broad policy approach requires volunteers to determine which uses may not be compatible with the desired uses of the majority

¹ <http://www.doctorsns.com/Content.aspx?cid=552>

of the community. This can be extremely difficult for local volunteers who intend to develop trails for Active Transportation that is inclusive of all persons.

As part of the Provincial Action Plan for OHV's, the Province announced that it would designate an OHV trail network. The Province may facilitate the development of alternate OHV routes for the special interest groups representing ATV use. This would help resolve the issue of motorized use in residential neighbourhoods. [see Appendices].

c. Public Consultation

The CMT Association began public consultation in 2005 with a public meeting in Musquodoboit Harbour. Most of the attendees were ATV enthusiasts and the meeting was scheduled during the time of the Provincial Task Force Report on OHVs. It was a very contentious time to hold a public meeting on trail use. The CMTA took note of the many concerns from OHV users to continue accessing the former railbed. Much debate took place amongst all involved

Survey forms were published in the Eastern Shore Observer and the Community Connector and has consulted TRAX, Doctors Nova Scotia, ADAPT, Dartmouth Volksmarch Club, Bikeways Advisory Committee, Velo Halifax Bicycle Club, Cross Country Ski Nova Scotia, Bicycle Nova Scotia [see Appendices]. The CMT also published intentions in newsletters and bulletins.

Following guidelines set by the Department of Natural Resources, the CMT distributed a mail out survey to the 120 adjacent landowners from Head Chezzetcook to Musquodoboit Harbour. [see Appendices]. All adjacent landowners who would be most affected by the trail development were contacted and informed about the proposed trail and their input was requested. Results showed 63% of adjacent landowners favoured a trail encouraging physical activity. Community residents often expressed frustration with illegal dumping, erosion, wash outs, and OHV traffic and damage evident on the existing railway.

The CMT is garnering further support for its proposed trail plan by contacting the Musquodoboit Trailways Association, Gaetz Brook Junior High School, Eastern Shore District High School, Eastern Shore Community Health Board, Eastern Shore Forest Watch, Chezzetcook Lion's Club, Musquodoboit Lion's Club, youth and senior groups, and the Musquodoboit Area Ratepayer's Association.



The CMTA published intentions to develop a non motorized trail in newsletters and bulletins.

6. Trail Safety and Sustainability

Trail organizations take responsibility in managing and maintaining a community trail; thus the importance of a committed group of volunteers who are willing to allocate time and energy to oversee trail planning, construction and maintenance. Although annual capital and operations funds are often available to pay for many services, a significant amount of volunteer time is still involved.

Volunteer involvement includes fundraising such as writing proposals, soliciting government programs, funding agencies and corporate donations and ensuring that the organization meets funding, reporting and accountability criteria. Coordination is needed in the hiring of contractors and services including gathering three quotes and awarding the contract in an organized, well documented, open process. Safety and risk management should be a top priority for a trail organization. Standards detailed in the Nova Scotia Trails Manual should be followed. DNR requires bridge spans be approved by an engineer and insurance policies require seasonal maintenance check ups. Keys to bollards for emergency trail access should be given to local fire and RCMP detachments.

During the construction process, the contractor should provide copies of insurance policies indicating sufficient liability coverage and naming the trail group as protected by the policy before work begins. The contractor should also provide a written warranty and guaranty for all materials and workmanship for a period of two years from the date of final project acceptance.

Trail operators and trail program facilitators owe a duty of care to the people they attract to their trail/programs. Operators/programmers need to gain a good working knowledge of the legal aspects that impact their trail. A risk management process is the best way to ensure meeting the duty of care and then lessen the chances of litigation and insurance claims in case of an accident.²

7. Benefits of Trail Development

(1) Social benefits:

- Communities plan their resources
- Connects people and communities

- Improves the aesthetics of the community
- Creates community pride
- A trail is a playground that will instill a lifelong passion for fitness and outdoor activity
- Offers an affordable aerobic activity required by many of our senior citizens
- Provides a safe and quiet trail for little hikers and bikers

(2) Environmental:

- Preserves a greenway
- A managed trail discourages dumping and other unlawful activities
- Encourages AT and activities not requiring the use of fossil fuels
- Provides an outdoor classroom for nature appreciation.
- Reduce greenhouse gas emissions.

(3) Economic:

- Trail construction and maintenance generates jobs
- Trail developing associations can access different sources of money (i.e: HRM, NS, TCT)
- Physically active populations are less dependent on the healthcare system
- Eco-tourism is the fastest growing trend in tourism;
- More services such as bike rentals, restaurants, accommodations will spring up in the community with a national, world class trail system.

(4) Health:

- Less Obesity: According to the 2004 Canadian Community Health Survey (CCHS), obesity rates for youth (aged 12-17) and adults have risen from three to nine percent and from 14% to 23% respectively from 1978/79 to 2004.
- More Physical Activity: Twenty five percent of the population in the Halifax Health Region is physically active and 48% is in active. Physical inactivity costs the NS health care system (estimate) 66.5 million per year with the impact

² Trails Canada document from website: http://www.trailsCanada.com/documents/Monitor_3_Final.pdf

on all direct health costs being \$107 million with the costs to HRM being \$44.7 million and \$68 million respectively.

- Less Disease: 36% of all cases of heart disease, 27% of osteoporosis cases, 20% of stroke, hypertension, type 2 diabetes and colon cancer and 11% of breast cancer are attributed to physical inactivity. According to a 2004 report by the Heart and Stroke Foundation of NS, 200 people die prematurely each year due to physical inactivity in HRM.

8. Property Ownership Concerns

a. Land Ownership

Research at the Nova Scotia Land Registration and Information office indicates that the Department of Natural Resources owns the entire length of the rail bed from East Chezzetcook Road to the former railway station at Musquodoboit Harbour, with the exception of two small parcels. Both of these gaps appear to present little impediment to trail development, but will require follow-up action with property owners. Where the local highway used to cross over the Chezzetcook River near Brookside Lane, the land at the intersection of the rail bed and the road appears as a public highway, which would be provincial property and should not pose any serious threat to trail

development. The second interruption occurs at Brian Dickie Drive,

where a privately owned parcel bisects the rail bed. On-site, this area has been developed as a gravel street, which appears to be easily crossed if a suitable crosswalk were installed.

b. Encroachments on Track

Aside from the leases and licenses discussed above, there are a few possible New Trail Sections. The diversion of the trail to the intersection of the No. 7 Highway and the end of Highway 107 requires new trail construction on land belonging to the public highway. Permission to construct this trail section will have to be obtained from the Nova Scotia Department of Transportation and Public Works (NSDTPW). Other short diversions of the trail surface to meet safe crossing locations are thought to lay within the rail line corridor or the public highway right of way.

c. Future Side Link Trails

Development of future side trail links to neighbouring community institutions will have to be negotiated with affected land owners. These institutions could be approached to construct and



maintain these side links themselves. Some may also be able to designate parking areas for trail

users. Side trail heads and parking areas should be signed to identify their location for trail users.

most areas. Any 'casual maintenance' has not been sanctioned by DNR.

10. Visual Assessment of Rail Line Corridor Rail Bed

The abandoned rail bed from East Chezzetcook Road to the former railway station in Musquodoboit Harbour is a 9.6 kilometre section of a larger route that extended from Windsor Junction to Upper Musquodoboit. The line from Dartmouth to Upper Musquodoboit opened in 1916, use ceased in 1982, and the rails were taken up in 1985.

Much of the rail bed passes through evergreen forest, and in the twenty years since abandonment, the native evergreen vegetation has encroached on the rail bed. Young evergreen trees and alders have narrowed the corridor to about 2.4m width in many areas and, in a few locations, vegetation virtually blocks the route. Windfall trees cross the trail in many locations and there are between four and five hundred leaning or fallen trees near the trail which should be removed. Regular use of the rail bed by local walkers and ATV riders has prevented vegetation from completely blocking the trail in

Poor drainage along the rail bed is a major concern. On a site visit in July 2006, extensive sections of the rail bed were wet. Large depressions created by ATV traffic were filled with water and some short sections were entirely flooded. In spring, conditions tend to be even worse. Erosion of the trail surface and high trail



shoulders causes drainage to flow along the former rail bed surface. The rail bed was constructed with very gentle gradients suited to locomotive use and, with the accumulation of gravel, sediment and vegetation in the trackside ditches, these have ceased to function properly in many areas. Re-establishing proper drainage along the rail bed will be a key task of the upgrading



process. Approximately one third of the entire rail corridor length requires re-ditching to allow water to drain away. The height of the finished trail surface in relation to the bottom of the drainage course needs to be raised in many areas.

Deep cuts through the rail bed have been created in two or three areas where culvert blockages or flood waters have eroded the rail bed.

Appropriate drainage needs to be reestablished in these areas and the rail bed filled to return to its original profile to create a uniform travel surface.

The railroad ties and tracks were taken up in 1985, and little of the coarse loose ballast rock laid between the ties remains on the track surface. As discussed above, the rail bed surface is eroded and low in relation to the trail shoulder and ditches. The rail bed must be built up to permit positive drainage with a consistent 2% cross slope on the trail in all areas and gentle uniform longitudinal slopes. Rocks and tree root protruding from the trail bed in many areas need to be covered deeply or removed from the trail bed.

a. Causeway Condition

The rail bed passes over the neck of water between Long Bridge Lake and Petpeswick Lake on a causeway about 180 metres in length. Generally the causeway is in good condition, but it requires increased rip-rap protection in several locations so that washouts in the rail bed can be repaired and to protect the upgraded trail surface.

b. Bridge Conditions

There are four large bridges which span streams and rivers along the trail route; a detailed analysis of the structures is not included in the scope of this project, but a cursory examination of the bridges was made. An earlier visual assessment of the bridges was completed by HRM in 1997; Ekistics did not note a dramatic change in condition of any of the bridges since then.

Three of the bridges are nearly identical, measuring about 22 m in length, while the fourth

is a large trestle over Little River which measures near 50 metres in length. The bridges are decked with heavy creosote timbers (300 x 355mm) resting on steel trusses, which in turn rest on concrete abutments. Most of the timber railway ties on the bridge appear to be sound but worn, though fewer than one in ten have advanced deterioration. Metal components of all bridges are rusting, with only traces of the original paint remaining on the more exposed metal surfaces. Expansion joints at the abutments were not examined.

The three similar bridges each stand on a pair of concrete abutments near the stream edge. The long trestle bridge stands on two abutments and two piers which are all located on ground that is normally dry. All abutments show spalling of concrete; there is no sign of exposed rebar. There has been some erosion of abutments, stream banks and the stream bed near each of the three smaller bridges.

The long bridge has no railings, though it spans a ravine with a depth of about nine metres below the bridge, at its lowest point. The three similar bridges have rusting steel parapets along much of their length. There is a fall hazard in the gap between the railway ties and the parapet on the approaches to the bridges where the parapet does not extend to the end of the bridge deck and additionally on the trail approaching the bridge where the side slopes fall away abruptly in some locations. The surface of the bridge decks tends to be 200mm higher than the adjacent trail surface and the spacing of ties on the bridge creates 100mm gaps that could both be hazardous for cyclists and pedestrians.

The four bridges are integral to the continuity of the trail, and a substantial asset in view of the future cost to replace them at the end of their life-span. Therefore, further analysis may be warranted to identify an approach to maintenance that balances the cost of repairs and on-going maintenance with the eventual replacement cost,

while considering user safety and the bridges' historic and aesthetic worth. If economically feasible, preservation of all the bridges, or perhaps only the long trestle bridge, might be viewed as a significant attraction decades from now.

c. New Trail Section Through Woodland

A section of new trail is proposed as a diversion around Highway 107 near its terminus at the No. 7 Highway. This new section would extend through rugged forested terrain south of the highway. Routing of the trail through this section



will require careful consideration so that the built work conforms to standards for the geometry of multi-use trails. A consistent 2% cross slope should be maintained on the trail surface, the maximum longitudinal slope on the trail should be 4.75%, and the minimum curve radius of 32m. This short section of new trail will provide a short section with more varied and interesting topography that will be a welcome change along the trail. Access to this area and the alignment of the trail will be subject to approval by NSDTPW.

d. Visual Character

The proposed trail route has a woodsy visual character and the subtle changes in gradient and curvature that are hallmarks of railway design. Occasional relief comes with the bridges and causeways over water and a few clearings on high ground that provide long distance views. Most area homes are close to the rail bed; in a few areas vegetation has been cut up to the trail, thereby including the home and trail in a single landscape space. Trail construction and management should strive to increase the visual interest along the trail. Maturation and change in

the woodland will help achieve this, but there could also be some cutting or lower branch removal to reveal views. Management of trail vegetation near area homes should respond to the home owners desire to maintain views or privacy. Providing good visibility at street or driveway crossing locations could require some thinning or limb removal.

e. Safe Street Crossings

The creation of safe street crossings for trail users is a critical aspect of trail upgrading. Currently crossings are required in five locations and one future crossing is anticipated:

- Pine Hill Drive (southern end near No. 7 Highway)
- Pine Hill Drive (northern end near No. 7 Highway)
- Unnamed street under construction near Highway 107 (future)
- No. 7 Highway at intersection with 107

- No. 7 Highway near Rowlings Avenue
- Brian Dickie Drive

The rail bed has also been crossed by Highway 107 near its terminus at the No. 7 Highway; we have assumed that no pedestrian crossing in this location is feasible in the short term. Instead, a new trail section parallel to Highway 107 leads to the existing tee intersection at the No. 7 Highway, where a safe pedestrian crossing may be established. A widened shoulder along the # 7 highway provides a link back to the rail bed opposite Rowlings Avenue. If Highway 107 is extended beyond the No. 7 Highway in the future, the configuration of any highway interchange should be designed to accommodate all trail users safely and conveniently. Alternately, in the future, it may be better to reestablish the continuity of the original railway route by constructing a small trail underpass where the 107 crosses over the rail bed. The section of rail bed between Highway 107 and Rowlings Avenue should be kept as part of the trail to permit this future option, and to provide a link to the industrial park in the short term.

When the Chezzetcook Inlet Connector Trail is constructed in the future to link the southern end of the CMT with the Blueberry Run Trail, a crossing of the East Chezzetcook Road will be required. A tentative location of this crossing could be identified with NSDTPW to highlight any potential gap at the southern end of the CMT as it is currently planned.

Before trail construction begins the feasibility of all trail crossing locations should be confirmed with the Nova Scotia Department of Transportation and Public Works (NSDTPW), who have authority over street crossings. In several locations road shoulder widening is also proposed to lead the trail to safe street crossing locations. All crossings should be signed and marked to the standards set out by NSDTPW. There are also three woods roads which cross the trail and a number of private driveways. Crossings of woods roads, driveways, and trail regulatory signing

should conform to standards set out by the Transportation Association of Canada (TAC) for multi-use trails.

11. Permits for Construction

Prior to the start of construction, a variety of permissions will be required:

(1) Nova Scotia Department of Natural Resources (Property Owner)

Letter of authority to upgrade and open the trail for public use. This letter may be required to obtain some of the environmental permits discussed below.

(2) Environmental Permits

Given the restorative thrust of the works proposed, permits requirements are not likely to be onerous. Activities involving use of treated or creosote wood, painting or cleaning bridges, and placement of rip-rap along the causeway, or excavation near water or on ditches could be of concern to environmental regulators. It is customary for the contractor to be assigned the responsibility of obtaining required environmental permits and abiding by the conditions and laws governing the work.

(3) Nova Scotia Department of Environment and Labour

Permit for Watercourse Alteration needed for bridge maintenance and construction activity within three metres of a watercourse (see <http://www.gov.ns.ca/snsmr/paal/el/paal181.asp>).

(4) Department of Fisheries and Oceans Canada

“Application for authorization for works or undertakings affecting fish habitat” to be completed, and a letter of permission obtained prior to construction (see http://www.dfo-mpo.gc.ca/canwaters-eauxcan/water-eau/collect_documents_e.asp).

(5) Transport Canada Navigable Waters Protection Act

Navigable Waters Protection Act Application to be completed to obtain clearance for works that could affect navigable waters. Future bridge replacement would almost certainly require review as would bridge maintenance activities such as placing rip-rap at bridge abutments.

physical activity recommended in schools by the PACY 2005 Report.

(2) Safety

Creating a safe environment for trail users. The trail route, bridges and street crossings should all be made safe. Some of the appropriate standards that relate to trail safety include:

- Draft HRM AT Facilities Design Manual
- Multi-use trail development: Velo Quebec
- Multi-use trail signing: Transportation Association of Canada
- Nova Scotia Trails Design Manual
- Street crossings: Nova Scotia Department of Transportation and Public Works

(3) Environmentally Responsible

Upgrading and maintenance of the trail should employ construction practices and materials that will not negatively impact on the local environment and protect fish habitat in local

12. Trail Design Criteria

a. Aims for Trail Development

The aim for the Chezzetcook-Musquodoboit Trail is based upon three key principles; 1) preservation of the resource to make it useable by the community for recreational purposes and active transportation; 2) development for non-motorized users, except maintenance; and 3) respect the genius of the place: the railway history, the landscape, and local history. The plan also adheres to 4 general principles for trail design:



(1) Community & Human Well-Being

The trail will build community spirit, connection to nature and healthy, active living for all ages. Passing by Gaetz Brook Junior High and Eastern Shore High, the trail would provide a ready means to incorporate the

streams and lakes. Upgrading of the trail should help to promote people’s responsible enjoyment and appreciation of the natural environment. The upgraded trail will continue to provide opportunities for low impact enjoyment of nature and a sustainable transportation alternative.

(4) Culturally Aware

Upgrading and use of the rail bed should promote awareness and appreciation for the natural and cultural history of the Musquodoboit Harbour, East Chezzetcook area. Future initiatives may include interpretive components and point of interest displays creating an outdoor classroom to promote school visits.

important aspect of upgrading. Street crossings should be confirmed by the Nova Scotia Department of Transportation Public Works prior to the start of construction. Only one major diversion of the trail route is anticipated to achieve safe crossings: at the location where Highway 107 bisects the rail bed. Here a new trail parallel to Highway 107 is planned.



b. Description of Trail Upgrading

Proposed upgrading of the trail aims to create a stable surface suitable for all forms of AT including wheelchair accessibility, walking and cycling along the former railbed between the East Chezzetcook Road and the former railway station in Musquodoboit Harbour. The trail will be 3.5m or about 11.5' wide (from top of the ditch to top of the ditch) to accommodate both pedestrians and cyclists moving back and forth and emergency and maintenance vehicles. The provision of safe street crossings will be an

While the former rail bed generally provides a solid trail base for construction, removal of vegetation that has encroached on the fringes of the rail bed and extensive re-ditching along the track will be necessary to provide adequate room for construction and appropriate drainage. Between four and five hundred windfall trees near the rail bed should be removed to allow uninterrupted access and to address the safety hazard they present. The four bridges along the trail route require decking to provide a safe base for pedestrians and cyclists. Railings on the

approaches to three bridges and along the entire length of the long trestle area required to address the fall hazard which exists.

c. Site Furnishings

Benches are proposed for use along the trail route. The final location of benches will be established on site during the construction process. Bollards and boulders would be placed in some locations

d. Signing

Trail safety signing should be provided in accordance with the standards for multi use trails

established by the Transportation Association of Canada (TAC). The trail master plan illustration and trail logo provide a basis for developing future trail head route signs and identity markers. As well, interpretation of the natural and cultural history of the site could be explored in the future.

5. Cost Estimate

Recommended phasing and budget for the work proposed (labour, materials, equipment, HST) is listed in the following tables.

Chezzetcook Musquodoboit Trail
Order-of-Magnitude Construction Budget
 November, 2006

Item	Notes	Quantity	Units	Unit Cost	Cost	
Trail Clearing						
Clearing wooded rail bed	NW of Pine Hill Drive (200 lm)	1	lump sum	\$640	\$640	
Clearing new trail sections	South of hwy 107 (1650 sm)	1	lump sum	1,280	1,280	
	Near Station (200 sm)	1	lump sum	250	250	
Deadfall removal	Average 6" diameter coniferous	500	each	16	8,000	
Pruning, clearing trail r.o.w	30 person days	1	lump sum	4,000	4,000	
Additional clearing to provide views	6 person days	1	lump sum	750	750	
						\$14,920
Rough Grading & Drainage						
Ditching along trail		7390	lm	\$6	\$44,340	
Disposal of ditch spoil off site		1	lump sum	4,000	4,000	
Grubbing trail shoulders		1	lump sum	8,000	8,000	
In-filling of washed out rail bed	Near Legion (26 lm)	200	cm	10	2,000	
	At causeway	120	cm	10	1,200	
	North of bridge 3 (24 lm)	180	cm	10	1,800	
Rock reinforcement of rail bed shoulders		200	lm	22	4,400	
Rip-rap patch on causeway		120	lm	200	24,000	
New culverts under trail	12" culverts x 5m	48	each	600	28,800	
	18" culverts x 5m	8	each	800	6,400	
	24" culverts x 5m	6	each	1,000	6,000	
						\$130,940
Trail Surfacing						
Upgrading of existing rail bed		27912	sm	\$14	\$390,768	
Optional Upgrading at Industrial Park		1290	sm	14	18,060	
Construction of new trail bed	Between station and boardwalk	189	sm	20	3,780	
	Between boardwalk and switch at end of rail bed	192	sm	20	3,780	
	Diversion Parallel to end Hwy 107	990	sm	30	5,760	
	Various side trail options				0	
Widen Road Shoulder for 3m Trail	From Ind. Park to Road Crossing (Optional)	110	sm	20	2,200	
	From 107 to Road Crossing	1200	sm	20	24,000	
	NE Pine Hill Crossing	40	sm	20	800	
	SW Pine Hill Crossing	208	sm	20	4,160	
	SW Pine Hill Crossing (extend 32" culvert 9m)	9	lm	240	2,160	
	Brookside Lane	60	sm	20	1,200	
Topsoil & seed trail margins		23000	sm	5	115,000	
						\$571,668
Bridges & Boardwalks						
Bridge deck upgrading	Bridges 1-3	340	sm	140	47,600	
Bridge deck upgrading	Bridge 4	180	sm	140	25,200	
New railings for bridge approaches	Bridges 1-3	60	lm	280	16,800	
New railings for bridge & approaches	Bridge 4	120	lm	320	38,400	
Wooden boardwalk	Over track near Station	77	sm	140	10,780	
						\$138,780
Street Crossings & Safety Signing						
Signing & marking of street crossings	5 street crossings & 3 woods road crossings	8	each	\$1,200	\$9,600	
Boulder & bollard vehicle barriers	13 crossing locations	13	each	310	4,030	
Trail safety signing	Directional, speed, regulatory signs	1	lump sum	8,000	8,000	
						\$21,630
Site Furnishings, Identity & Interpretive Signing						
Benches		24	each	\$600	\$14,400	
Long benches on bridges		6	each	900	5,400	
Trail head identification		26	each	280	7,280	
Major trail maps		4	each	2,600	10,400	
Interpretative panels	Research, design, fabrication & installation	8	each	2,800	22,400	
						\$59,880
Other Construction						
Widening of road shoulder for parking		40	sm	\$22	\$880	
Allowance for landscape planting		1	lump sum	12,000	12,000	
						\$12,880
Other						
Construction Supervision		1	lump sum	\$27,500	\$27,500	
Engineer's inspection of bridge structure	Bridge 1-3 (single span)	3	each	\$3,000	9,000	
	Bridge 4 (steel truss)	1	each	10,000	10,000	
Implementation of engineer's recommendations	Not included				0	
Research & surveying to identify property limits	Not included				0	
						\$46,500
SUBTOTAL						
Contingency (15%)						\$149,580
TOTAL						\$1,146,778



1. Link to Appendices

All extended appendices and reference materials not listed here can be found at:

<http://cmttrail.ca/appendix.html>

2. Acronyms

- **HRM** – Halifax Regional Municipality
- **HRTA** – Halifax Regional Trails Association
- **CMT** – Chezzetcook-Musquodoboit Trail Association
- **NS HPP** – Nova Scotia Health Promotion Protection (Provincial)
- **DNR** – Department of Natural Resources (Provincial)
- **NSDTPW** – Department of Transportation and Public Works (Provincial)
- **DOEL** – NS Department of Environment and Labour
- **DFO** - Department of Fisheries and Oceans (Federal)
- **TC** – Transport Canada (Federal)
- **NW** – Navigable Waters (Federal agency)
- **AT** – Active Transportation (Municipal term for non motorized mode of transportation)
- **OHV** – Off Highway Vehicles
- **ATV** – All Terrain Vehicle
- **TCT** – Trans Canada Trail
- **NST** – Nova Scotia Trails
- **CN** – Canadian National Railway

3. Rails to Trails Policy

A Provincial Policy for Rails to Trails in Nova Scotia



Introduction and Background

Abandoned railway corridors present exciting opportunities for recreation, tourism and community development, through the establishment of a network of high quality public trails.

Formerly the foundation of Nova Scotia's transportation infrastructure, these corridors link the important communities of the province's past and present. Following abandonment, the railway beds and bridges that remain are well-suited for a wide variety of trail uses.

This policy therefore responds to widespread public interest, both on the part of trail user groups and of community development interests, in the conversion of abandoned railway corridors into public recreation trails.

The policy also recognizes that, as linear corridors, abandoned railway lines typically pass by numerous adjacent private properties. As a result, the policy gives particular consideration to the issues and concerns of adjacent landowners, and is intended to ensure that an acceptable balance can be achieved between public recreational use and the interest of private landowners.

According to this policy, municipalities and community organizations are encouraged to take the lead role in the development and management of abandoned railway corridors as public recreational trails.

The Province of Nova Scotia will support local initiatives where possible, through corridor acquisition, trail designation, and planning and development assistance. The lead provincial agencies are the Department of Natural Resources and the Sport and Recreation Commission.

This policy is founded on community-based initiative, consultation, co-operation and partnerships.

Principles

CORRIDOR ACQUISITION

Abandoned railway corridors are acquired by the Province of Nova Scotia in consideration of their potential for future development and management as public recreational trails, and for additional linear public uses where such uses can be demonstrated to be compatible with existing or potential recreational trail use.

CONTINUITY OF PUBLIC OWNERSHIP

An overriding management principle will be maintaining the continuity of the abandoned railway corridor in public ownership, once it is acquired for public recreational purposes.

RELATIONSHIPS WITH ADJOINING LANDOWNERS

In managing acquired abandoned railway corridors, the Province will practice a deliberate "good neighbour" policy with respect to adjoining landowners. Subject to the overriding principle of maintaining the continuity of the corridor in public ownership, crossings will be permitted on the condition that the integrity of the former railway grade generally can be maintained. As well, proposed uses of the corridor in association with adjacent land use will be considered where these can be demonstrated not to impact negatively on the future potential of the corridor as a recreational trail. Particular consideration will be given to situations involving urgent need or hardship. Authorized uses will be permitted through formal agreement and, correspondingly, unauthorized encroachments or trespasses will be treated as such.

FORMAL TRAIL DEVELOPMENT THROUGH AGREEMENT

Trail development, and associated management and use, will occur only on a formal basis, and generally be undertaken locally by the pertinent municipal unit(s) and/or incorporated community organizations through agreement with the Department of Natural Resources.

4. CMT Trails Survey



Name:

Address:

Phone:

E-mail:

1) Do you currently use the section of the rail bed / trail between Head Chezzetcook and Musquodoboit Harbour? YES / NO

2) If yes, what do you use it for? If not, is there any reason why not ?

3) Is there anything about the old 'trail' you would like to see change? If yes, what?

4) Do you have any worries or concerns about potential development of the trail?

5) Any other comments / thoughts?

5. Letter from Peter Bigelow



COMMUNITY DEVELOPMENT
Peter Bigelow, Manager, Real Property Planning

April 30, 2007

Ms. Susan Cook
Chezzetcook-Musquodoboit Trail Association
PO Box 129
Head of Chezzetcook, N.S.
B0J 1N0

Re: 2007/08 Approved Funding for Regional Trail Development

Dear Ms. Cook:

With the recent approval of the 2007/08 Halifax Regional Municipality Capital Budget, I am pleased to advise that the Chezzetcook-Musquodoboit Trail Association (CMTA) has been approved for \$50,000.00 under the Regional Trails Program.

This capital is subject to an official authorization from NS Department of Natural Resources allowing the CMTA to develop a multi-use, human powered, active transportation trail system.

I wish you every success for the upcoming season.

A handwritten signature in black ink, appearing to read "P. Bigelow", written in a cursive style.

Peter Bigelow
Manager, Real Property Planning

Peter Bigelow, Manager, Real Property Planning
2nd Floor Alderney Gate, PO Box 1749, Halifax, NS B3J 3A5 Tel: (902) 490-6047 Fax: (902) 490-6233
E-mail: bigelop@halifax.ca Website: www.halifax.ca

6. Letter of Support from Bicycle Nova Scotia

From: "President, BNS" <president@bicycle.ns.ca>
To: Andrew Myatt <anerdoo@hotmail.com>
Subject: trans and touring
Date: Mon, 14 May 2007 20:16:10 -0300

Greetings from Bicycle Nova Scotia,

Permit me to add my appreciation to the wonderful efforts the CMT Trails Association in restoring the trail to the benefit of all AT users, namely walkers, hikers, cyclists, snowshoes and xc skiers. When completed, one will actually be able to use this and the other links and have an AT corridor from Shearwater right through to Meaghers Grant, or about 45ks. As a long time member of Velo Halifax Bicycle Club, we have been using portions of this trail as part of our cycling schedule; I see we have planned an overnight tour on Labour Day weekend, returning to Porter's Lake campground for the evening. I have also just formed an (over 40) trail cycle club (Halifax Ramblers Bicycle Club); it is our intention to cycle only on the trails of HRM, your section would be used at least twice a month. It would be used year round as in Mid October we turn into a hiking club, then when it snows a xc ski / snowshoe club, then back to cycling. Presently, I sit on the board of Bicycle Nova Scotia and serve as the Provincial VP of Transportation and Touring. Trail development is something I am very interested in and of course am concerned about both the safety and air quality to the users. Based on this I could not support the use of this AT corridor to be shared with any off road motor vehicles of any type. I wish you success in your endeavours.
Best regards,

Bob White
VP - Transportation & Touring, Bicycle Nova Scotia