



# NSCC-Port Hawkesbury Connection Analysis

## Trail Proposal Implementation Plan

January, 2014

Submitted by:  
Ekistics Planning & Design

1 Starr Lane,  
Dartmouth, NS, B2Y-4V7  
ph: 902.461.2525  
[www.ekistics.net](http://www.ekistics.net)

## Table of Contents

1.0 Introduction	1
2.0 Implementation for TRAIL OPTION ONE	3
2.1 Trail Design	4
2.2 Development and Construction	6
2.3 Maintenance	11
2.4 Costs	12
3.0 Implementation for TRAIL OPTION TWO	14
3.1 Trail Design	15
3.2 Development and Construction	17
3.3 Maintenance	17
3.4 Costs	18
4.0 General Maintenance	19
5.0 Additional Considerations	19

## 1.0 Introduction

The purpose of this project is to create a conceptual trail design to connect the NSCC Strait Campus to Reeves Street in Port Hawkesbury. This report is a high level analysis of two trail options, comparing the two different routes to show the benefits that are unique to each so that the Town can make the best decision in regards to implementation.

To produce the conceptual trail options presented here, the design team went through the following steps:

### i. Base Mapping & Initial Site Review

Using in-house resources a base map was put together which included an aerial photo of the site, property lines, contours, roads, and buildings. A walk-through of the site gave team members a better idea of the topography and site characteristics to ensure base map accuracy.

### ii. Trail Siting

Based on the site walk-through and base maps, site specific characteristics were noted. From these characteristics five different trail routes were created and the best options selected. Two of these proposed options will be presented in the following sections of the report. As a general principle, the Town should encourage the connection of any proposed trail to existing trails in the vicinity to create an integrated and lengthened active transportation system.

While this report highlights the benefits and disadvantages between two trail options, it is important to note that both trail options will need to include the following elements in the final design:

### iii. Design Principles

In order to create a safe and esthetically pleasing design, best practices for trail design should be consulted. Accessibility and Crime Prevention Through Environmental Design (CPTED) principles should be highlighted as a priority.

### iv. Environmental Protection

Environmental integrity and protection should be considered when implementing trails through the natural environment. Using site-friendly materials, including native and non-invasive species, as well as the proper handling of detrimental products all ensure the smallest impact on the land.

### v. Landscaping

Landscaping can be used alongside trail design to create interest and beauty along the path. Native vegetation should be considered primarily to lessen the negative impact on the environment.

vi.Entrance from NSCC Campus

To promote abundant use, an entrance that is easily visible and accessible to the general public should be created. This entrance should be perceived as safe and inviting if the trail is to be successful.

vii.Addition of Site Furnishings

To ensure comfort throughout the length of the trail, benches, garbage cans, and signage should be included at frequent intervals throughout the site.

viii.Feasibility of Route

Each route needs to be analyzed for feasibility based on environmental impact, property acquisition, cost and permit allowance prior to construction.

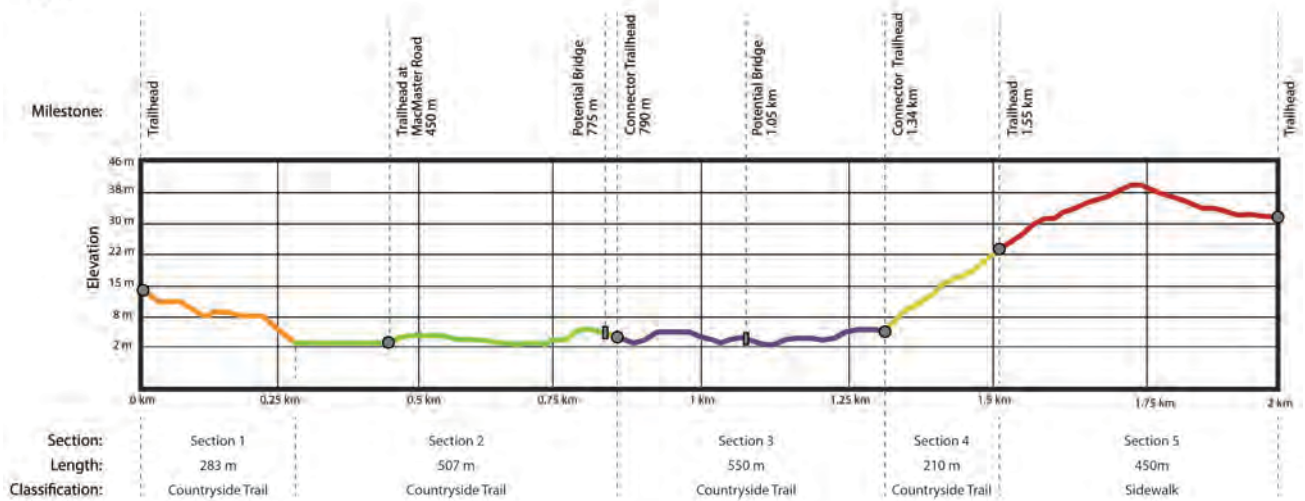


## 2.0 Implementation for TRAIL OPTION ONE



### Trail Option1

2km



## 2.1 Trail Design

### Trail Description

Trail Option One is approximately 2 kilometres and is planned to offer a diverse trail experience along its length. It encourages users to come in close proximity with the forest and the shoreline of the pond and will also have high visibility within the Town along Reeves Street. The trail is comprised of five sections with Section One beginning on the south side of the NSCC campus at a trailhead situated adjacent to the existing break area. From this location, the trail adapts the existing Nova Scotia Power service easement until it reaches Embrees pond. Section Two follows the north side of the pond, taking advantage of the wooded shoreline scenery until it intersects with the existing Community Trail. Section Three adapts a large portion of the existing trail and continues southward until it reaches the south side of the pond (see plan). From this point, Section Four heads uphill and in the south-east direction until it meets Reeves Street across from the intersection with Philpott Street. Section Five begins at this highly visible location and continues as a sidewalk in the existing shoulder of Reeves Street. Section Five will then turn north-east up MacSween Street and run on the south side of the road until it terminates at McQuarrie Drive. For safety, the sidewalk will be constructed with a curb and grade separation from the existing road.

### Design Guidelines

The Nova Scotia Trails Manual provides guidelines for the design and construction of the different sections along the trail. Sections One through Four shall be classified as a Countryside Trail and should follow the design standards outlined below.

#### **Countryside Trail Description:**

This class of trail is defined primarily as a walking and hiking trail which approaches civilization. This classification includes basic trail signage, and minimal amenities along the trail to protect the environmental sensitivity of the area. Consistent vegetative clearing and on-going trail maintenance are crucial to ensure that the use and enjoyment of the trail are preserved after initial construction. A Countryside Trail may consist of steep slopes and rough terrain along the route, but design elements can be included to accommodate ease of use. These elements can consist of, but are not limited to, wooden steps, drainage mitigation, bridges, and the addition of a smooth, consistent surface tread.

- a) This trail classification shall consist of a minimum 2.0 metre horizontal width and a minimum 3.0 metre vertical clearance for the pathway
- b) An additional horizontal 1.0 metre of cleared vegetation is required on each side of the pathway.

#### **Activities Permitted:**

Trail classification influences the type of trail activities permitted. The following activities are permitted along Sections One through Four of the trail route:

- walking
- hiking
- sight-seeing/viewing wildlife

- traditional biking
- mountain biking
- fitness
- interpretation
- snowshoeing
- cross-country skiing

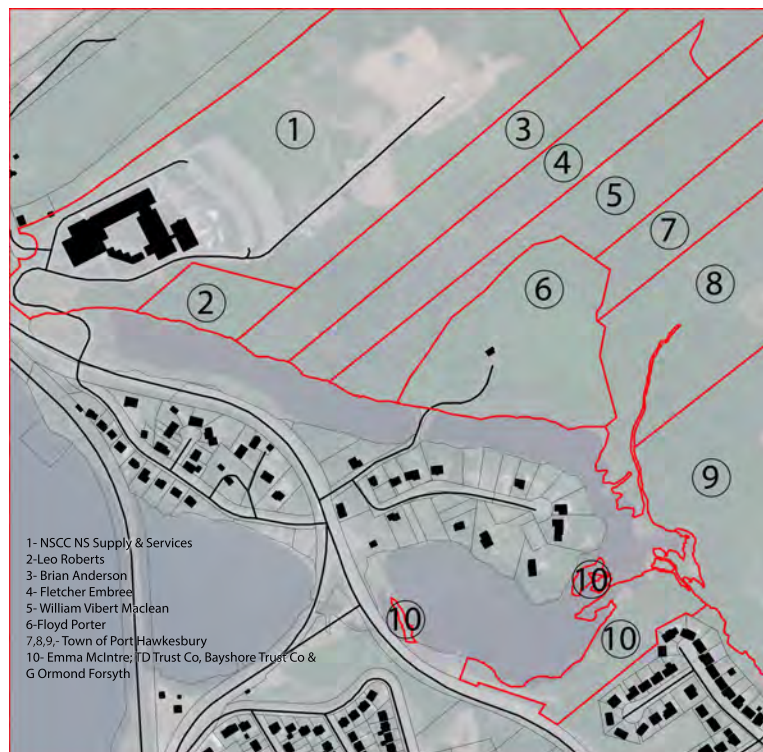
Due in part to surface texture as well as topography, proximity to residential development, and compatibility of uses, all activities must be non-motorized. In addition, all-terrain vehicle riding, motorcycle riding, horse riding, and snowmobiling will not be permitted on this trail.

For the design of Section Five, reference must be made to the Nova Scotia Department of Transportation and Infrastructure Renewal standards which outline standards for pedestrian-oriented sidewalks. The primary requirements include:

- Concrete or asphalt surfacing
- A minimum width of 1.5m
- A maximum grade of 5%

### Land Acquisition or Easements

Before construction can begin the Town must enter into agreements with the different property owners along the length of Trail Option One. The Town has two options in regards to this. They may either



purchase a section of the property where the trail will run, or come to an agreement with the land owners to allow the trail to run through their land. Most likely the Town will have to negotiate easements with the property owners. If the owners are to keep their property, the Town must work closely with the owners to ensure a cohesive and well managed trail link. This step must be the first completed. The map above highlights which land owners need to be contacted in this process:

### Permits, Policies and Zoning

The Town must apply and receive all necessary permits prior to construction. A permit is required from the NS Department of Transportation and Infrastructure Renewal for any work occurring along a roadside right-of-way, which is relevant to Section Two of the trail. All work for Section One must fall under the Trail Policy: PO1033 and Trail Construction/ Maintenance and Trail Crossing Procedure: PR5092.

The area in question currently falls under three different zoning categories: Institutional, Residential Two Units, and Residential Rural. It is suggested that before the addition of the trail the Town amends the by-law changing the area for the trail to fall under open space zoning.

## 2.2 Development and Construction

### Clearing and Grubbing

Clearing and Grubbing will be required for the construction of some parts of Section One.

**Clearing:** Clearing shall be done to meet the required path widths outlined in the Design Guidelines. The trail corridor shall be marked and finalized prior to clearing. It is best practice to avoid the removal of large, mature trees, however the trimming of low lying branches is acceptable. Shrubs and smaller trees within the designated path shall be removed, but ground cover plants may remain.

**Grubbing:** Grubbing consists of the removal of stumps, roots, stones and other organic material from the designated path. However, as excessive grubbing increases erosion, it is not suggested to grub the entire trail path, only those areas deemed necessary. These areas are to be outlined following an on-site assessment. Tree stumps may remain along the ROW as long as they are cut 30 cm below grade.

**Removal and Disposal:** Upon completion of clearing and grubbing all waste material must be disposed of. In-organic material must be removed completely off site. Organic material may remain on site, but removed from the trail tread. It is not permitted to burn waste on site, or for the waste to remain in piles. Trees cleared can be used in construction of the trail, including use in steps, bridges and benches.

### Drainage and Slope

The first four sections of the trail should be analyzed for water pooling and it should be decided whether it is the best option to redirect the water with culverts or ditches, edit the route of the trail to go around, or create infrastructure such as bridges. The type of soil along the route will be an important factor in successful drainage. As well, it should be decided if a cut and fill method is required to mediate the



changes in grade along the route. It is assumed that drainage and slope do not need to be considered in Section Five of the trail as it will run alongside infrastructure that is currently in place.

### Tread Construction

There are four possible techniques to develop the subbase before the tread surface is installed. It is likely that more than one technique will be required along the length of the trail.

**Crown:** On flat, or relatively flat surfaces (less than 5%) the trail subbase must be crowned. This requires that the height of the centre point is equal to 4% of the tread width. The soil installed should consist largely in part of gravel, with a supporting combination of sand, loam and silt. Additionally, on site soil can be used in the crown creation.

**Cut:** This method is only to be used on the side of steep slopes, as it requires intense labour and only allows for the creation of narrow tread widths. The tread must be outsloped at 3% to direct water off the trail effectively. The cut must be backsloped correctly to ensure erosion doesn't occur. The ratio of cut depends on soil type, usually 1.5:1 is acceptable (see chart below).

**Fill:** This technique requires that material is added to level the tread. Material used for fill may be collected on site or imported. It is necessary to ensure that the fill is well compacted or retained to avoid erosion, and the tread must be outsloped at 3%.

**Cut and Fill:** This method is often the most commonly used. Where required, cut fill material from the hillside slope at the appropriate ratio (see chart below). Use this material to fill to the specified trail width, ensuring the tread is compacted effectively to mitigate erosion.

### Cut Ratios for Backslope

Soil	Ratio (run:rise)
Stable Rock	0.25:1
Loose Rock	0.5:1
Loose Soil w/ gravel	1.5:1
Damp Clay	2 or 3:1
Sand	3 or 4:1

## Surfacing Materials

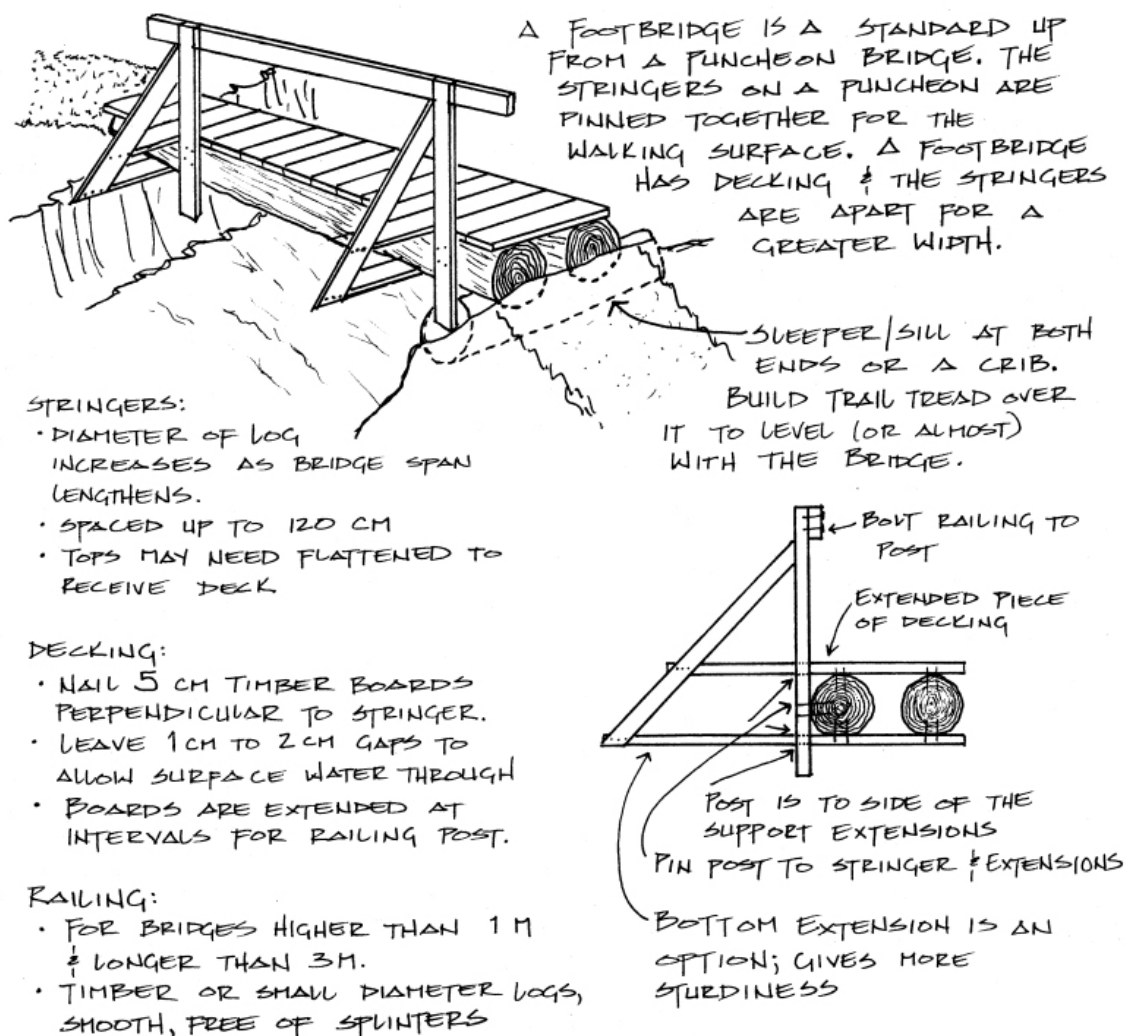
When considering the type of surfacing to use on this trail, the location, programmed use, and subsurface materials impact material decisions. Hard surfaces are often better for wide, flat trails that will cater to multiple users and activities. Soft trails are beneficial because they integrate seamlessly with the natural environment creating a more appealing aesthetic and overall environment, while having less negative impacts on the natural system. It is suggested that Sections One through Four of the trail make use of a surface which integrates with the environment, while Section Five should be a hard surface sidewalk. The chart below was constructed from trail resources and highlights the benefits and issues with the different possible surface materials.

Type	Advantages	Disadvantages
Granular (crushed stone/ Stone Fines)	<ul style="list-style-type: none"> <li>- Compacts well for a smooth surface</li> <li>- Easy to spread and regrade</li> <li>- Inexpensive installation</li> </ul>	<ul style="list-style-type: none"> <li>- Erodes on slopes</li> <li>- Stones can give minimal issues to wheelchair users</li> <li>- Requires ongoing maintenance costs</li> </ul>
Asphalt	<ul style="list-style-type: none"> <li>- Creates a smooth surface that molds to terrain</li> <li>- Offers good mobility</li> <li>- Easy for skilled trades to install</li> </ul>	<ul style="list-style-type: none"> <li>- Moderate/High installation cost</li> <li>- Installation by skilled trades</li> <li>- 10-15 year lifespan and a bad base can decrease that further</li> <li>- Cracking occurs near the edges. Weeds/ grass grow in and speeds deterioration</li> </ul>
Concrete	<ul style="list-style-type: none"> <li>- Creates a smooth surface that offers good mobility and access</li> <li>- A long lifespan</li> <li>- Easy to maintain</li> </ul>	<ul style="list-style-type: none"> <li>- High installation cost</li> <li>- Must be installed by skilled trades</li> <li>- Step joints along the path and cracking can create mobility issues</li> </ul>

## Watercourse Crossing

Two potential water crossings have been outlined along the route of Trail Option One. The technique suggested for implementation is a footbridge. If required the following two footbridge options are the most viable:

**Wooden Footbridge:** This technique is ideal as it will fit into the natural aesthetics of the site and is low cost to construct. Maintenance will be medium to low, and if wood is treated correctly, durability can be over 20 years. If untreated wood is used lifespan is reduced to 5-10 years. It is recommended that on-site lumber from the previous trail clearing is used.



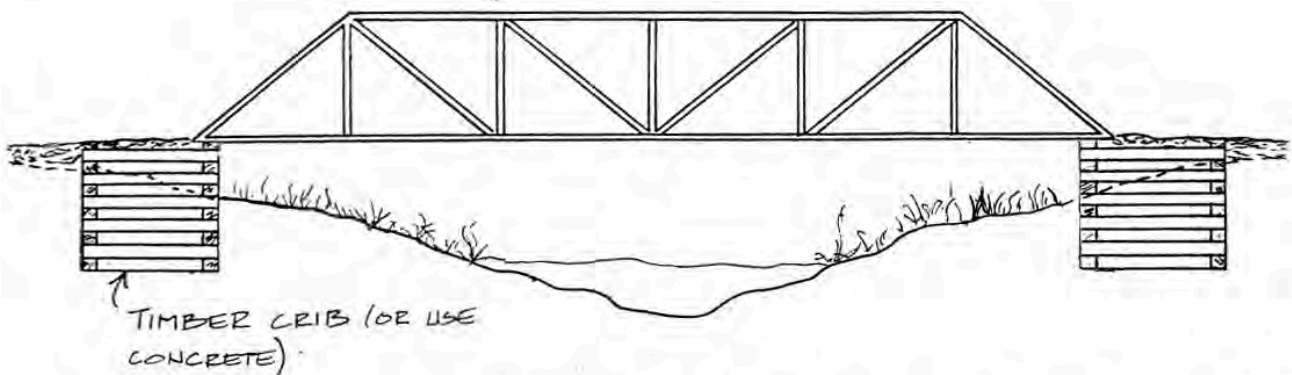
Footbridge Detail  
Nova Scotia Trail Manual, 2013

**Prefabricated Steel Truss Pedestrian Bridge:** This option is ideal for durability and quick installation. The high cost is offset by a 20+ year lifespan.

### *Truss bridge*

A TRUSS BRIDGE IS THE SAME STRUCTURE AS THE OLD COVERED BRIDGES IN THE MARITIMES.

TWO TRUSS STRUCTURES



A TRUSS BRIDGE IS MADE OF SEVERAL PIECES JOINED VERTICALLY, HORIZONTALLY, AND DIAGONALLY AT JOINTS. THE PIECES ARE TYPICALLY MADE OF STEEL BUT TIMBER CAN BE USED. TIMBER TRUSSES HAVE A SHORT LIFE BECAUSE JOINTS LOOSE STRENGTH DUE TO CONTRACTION AND EXPANSION. A TRUSS CAN BE MADE LOCALLY, HOWEVER MORE LIKELY IT WILL BE BOUGHT PREFABRICATED FROM OUTSIDE NOVA SCOTIA. PLAIN STEEL HAS TO BE SANDBLASTED AND PAINTED EVERY FEW YEARS. THERE IS OTHER STEEL THAT 'NATURALLY' BUILDS UP A PROTECTIVE COATING THAT PREVENTS RUST.

THIS ILLUSTRATION IS OF A THROUGH TRUSS WHERE THE DIAGONAL AND VERTICAL MEMBERS ARE RAILINGS (WILL REQUIRE MORE GUARDS BECAUSE GAPS ARE LARGE) AND THE DECK IS ATTACHED TO THE BOTTOM CHORD. IT IS ALSO POSSIBLE TO PUT THE DECK ON THE TOP CHORD AND BUILD RAILINGS; THIS MAKES THE TRUSS A SUPPORTING STRUCTURE FROM THE BOTTOM.

Truss Bridge Detail  
Nova Scotia Trail Manual, 2013

### Contractors

Depending on the surface material chosen, skilled trades will most likely be required. Contractor pre-construction pricing should be acquired before the start of construction. It is suggested that the Town of Port Hawkesbury partner with the NSCC Strait Campus in the construction of this trail. It would benefit all involved if the Heavy Equipment Operator students and Carpentry students took part in the trail construction as part of their learning.

#### **Build Phases:**

Phase 1: Collection of easements, permits, and funding sources

Phase 2: Completion of trail construction

## 2.3 Maintenance

The majority of maintenance procedures will be consistent between the two trail options and will be discussed later in the report. However, the first four sections of Trail Option One are unique in their options for surfacing materials from the rest of the trail options. These sections will require additional maintenance for surfacing repairs if a granular surface is selected. Usually it requires to be 'topped up' every two years.

### Suggested Partnerships for Maintenance

There are opportunities for the Town to create partnerships to reduce the strain and cost of required maintenance. Possible partners could include:

- Stora Enso
- Land Owners
- NSCC
- Businesses of Port Hawkesbury
- Nova Scotia Trails- Provincial Registered Charity
- Nova Scotia Trails Federation
- Health and Wellness- Nova Scotia Trails

### Risks

One of the most detrimental risks to the implementation of Trail Option One is a lack of co-operation from the private landowners along the length of the trail. If one, or multiple, landowners refuse to come to an agreement with the Town in terms of an easement or sale, the project cannot move forward.

Another risk to the success of this trail will be the public's perception of the trail's safety. As the trail will go through the woods for a large portion of its route, where it will be isolated from public view, perception will play a large role in how frequently the trail is traversed.



## 2.4 Costs

It is estimated that the construction for Trail Option One will cost approximately \$215,815.00. The breakdown of costs for each trail section is outlined below.

Trail Option 1

Trail Section	Trail Standard	Length (m) <sup>①</sup>	Construction Note	Lineal Cost (m)	Estimated Price (Class "D")
1	Countryside Trail	283	<ul style="list-style-type: none"> <li>proposed route includes portions over private property (requiring land owner's permission)</li> <li>location within existing easement may require consultation with NS Power, pole locates and setbacks.</li> <li>no existing ground route, completely new trail on dead straight alignment</li> <li>cutting and grubbing is required</li> </ul>	\$ 100	\$ 28,300
2	Countryside Trail	507	<ul style="list-style-type: none"> <li>no existing ground route, completely new trail</li> <li>section requires ground truthing</li> <li>trailhead should be considered at MacMaster Road</li> <li>will require boardwalk or bridge system at water crossing</li> </ul>	\$ 150	\$ 76,050
3	Countryside Trail	550	<ul style="list-style-type: none"> <li>trail exists, may require widening of ROW and tread</li> <li>may require additional tread material and depth</li> <li>connector trailhead should be considered at intersection with existing north-south community trail</li> <li>may require boardwalk or bridge construction or improvements at water crossing</li> </ul>	\$ 50	\$ 27,500
4	Countryside Trail	210	<ul style="list-style-type: none"> <li>no existing ground route, completely new trail</li> <li>section requires ground truthing</li> <li>steep grades, may require additional drainage system</li> </ul>	\$ 100	\$ 21,000
5	Sidewalk	450	<ul style="list-style-type: none"> <li>new 2.1 m concrete sidewalk</li> <li>trailhead should be considered at Reeves Street</li> </ul>	\$ 140	\$ 63,000
SubTotal				\$	215,850
5% Design				\$	10,793
15% Contingency				\$	32,378
<b>Total</b>				\$	<b>259,020</b>

i) Trail section lengths are approximate

## Funding Sources

The responses from the survey show general support for the implementation of a trail connecting the NSCC Campus to Reeves Street. In order for the trail to be successful there must be enough funding to complete the project.

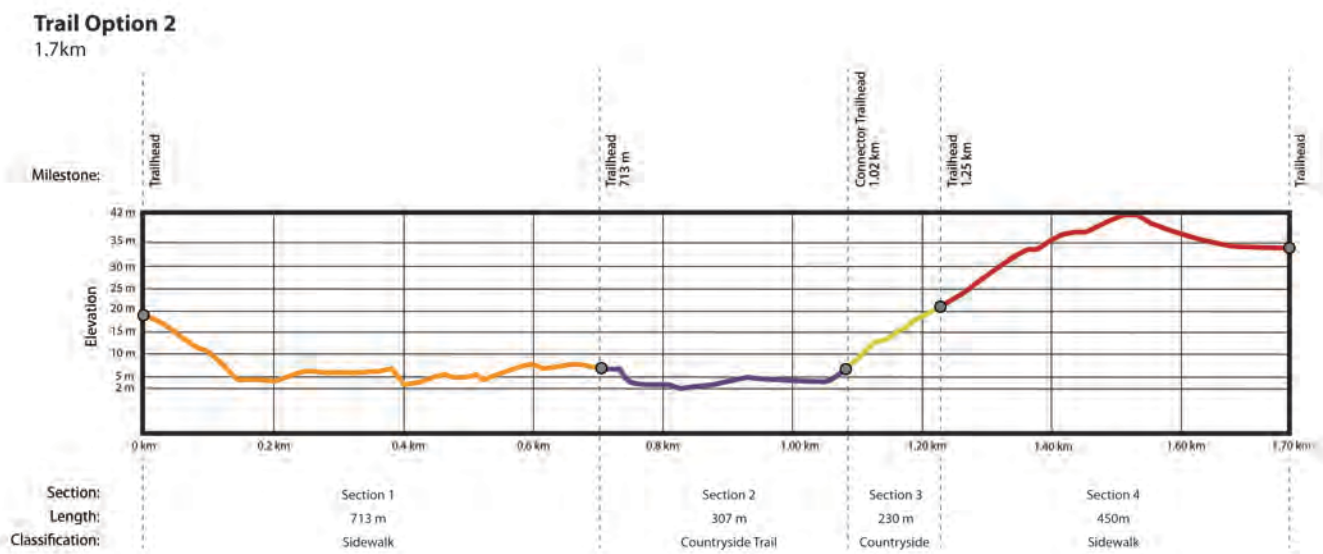
To help in reducing the costs for the general taxpayer, the Town of Port Hawkesbury would benefit from considering alternate funding sources. One option would be a separate taxation to those who would benefit directly from the implementation of the trail, meaning NSCC and the businesses in the commercial centre. However, the most favourable option would be to look to outside funding opportunities. These could include:

- Community Trails Leadership Fund

- Off Highway Vehicles (OHV) Infrastructure Fund- Trails
- Federal/ Provincial Gas Tax Fund
- Federation of Canadian Municipalities Green Municipal Fund;

In addition to this capital funding, other partnerships and cost sharing opportunities should be researched, including, but not limited to a partnership with Stora Enso.

## 3.0 Implementation for TRAIL OPTION TWO



### 3.1 Trail Design

#### Trail Description

Trail Option Two is approximately 1.70 kilometers in length and is comprised of four main sections. Section One is classified as a Pedestrian Oriented Sidewalk, and begins at the south side of the NSCC campus at a trailhead situated adjacent to the existing driveway. From this location, the trail cuts down along the NSCC campus lawn until it runs alongside the road. The trail continues in the existing right-of-way until it links with the existing community trail at the parking lot. This is the start of Section Two, which is classified as a Countryside Trail. The next two sections have a similar route to Trail Option One. Section Three is a connector trail which continues from the existing trail and heads uphill in the south-east direction until it connects back with Reeves Street opposite Philpott Street. Finally, Section Four runs parallel to the road ROW as a Pedestrian-Oriented Sidewalk. Trail Option Two is designed to offer the most direct route alongside the right-of-way, while promoting the natural beauty along the route. By making use of current community trails and existing curb the cost of construction is significantly reduced.

#### Design Guidelines

Refer to the design guidelines outlined in Section 2.1.2 for the Countryside Trail and the Nova Scotia Department of Transportation and Infrastructure Renewal standards for the Pedestrian-Oriented Sidewalk.

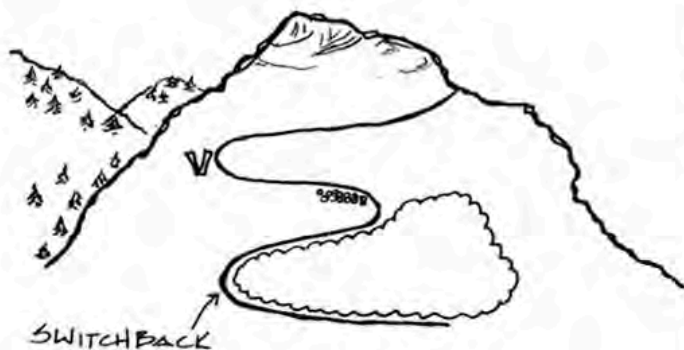
#### Section One Connection Options

Section One of Trail Option Two occurs over a steep slope and requires a design that responds to this slope. Two design options are available for this section.

**Option 1** is the implementation of stairs down the hill to the road. This would create a direct connection to NSCC and would be the fastest route. Stairs would limit the accessibility to some, however the option of using the road down is available to meet the needs of those who cannot use the stairs.

**Option 2** is a Switchback trail, similar to the road design. Switchback trails are beneficial because they reduce grade changes over a larger area therefore making the trail more accessible to a wider user-base. However, they also lengthen the trail significantly, and are difficult to implement successfully so that users are not taking shortcuts or getting bored with the trail.

## Switchbacks



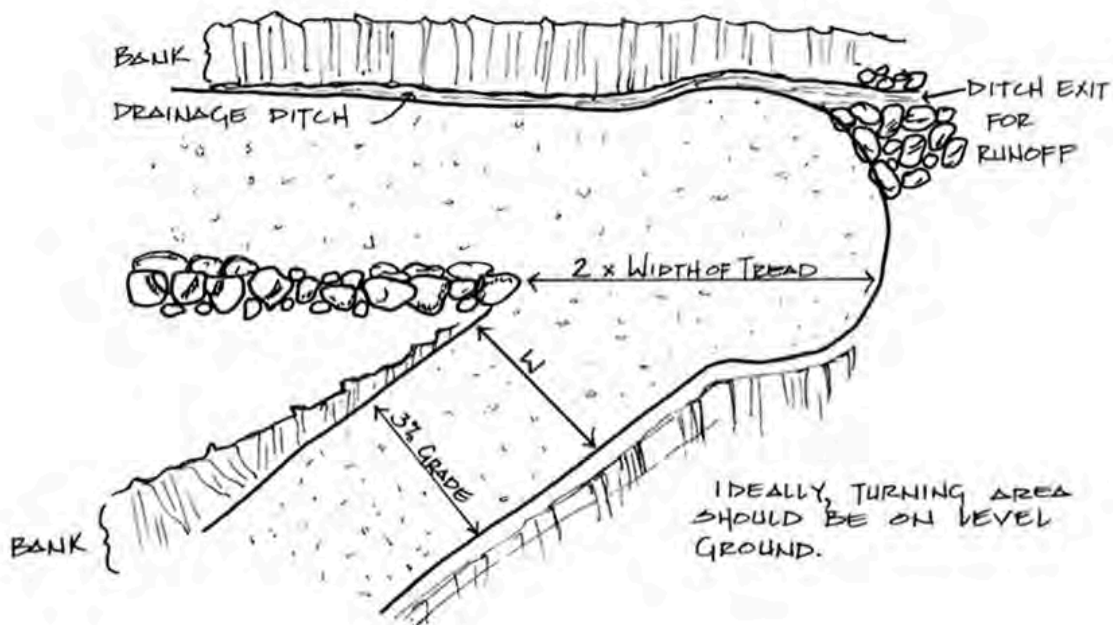
- V = VIEW
- = WALL
- ☁ = DENSE FOREST

SWITCHBACKS REDUCE TRAIL GRADES OVER A LARGE AREA. THE TRAIL IS SIDE-SLOPED AND GRADUALLY ASCENDS HILL, THEN REVERSES THE DIAGONAL DIRECTION (BUT STILL ASCENDS).

THIS ZIG-ZAG LAYOUT LENGTHENS THE TRAIL SIGNIFICANTLY, THEREFORE IT IS NOT AN IDEAL METHOD TO GET TO POINT B PROMPTLY.

SWITCHBACKS ARE TRICKY TO MAKE. BE PREPARED TO COMMIT TO FIND THE BEST ROUTE, OTHERWISE USERS WILL SHORTCUT, THERE WILL BE DRAINAGE PROBLEMS THUS EROSION, AND USERS COULD GET BORED.

USE METHODS, SUCH AS IN ABOVE DIAGRAM, TO PETER USERS FROM SHORTCUTTING AND TO MAKE THEIR TRAVELS INTERESTING. MAKE THE TRAIL THE MOST DRAWING AND ATTRACTIVE ROUTE TO THE USER. A STRETCH OF TRAIL THAT IS VISIBLE FROM ANOTHER IS A TEMPTATION FOR USERS TO SHORTCUT.



Switchback Detail  
Nova Scotia Trail Manual, 2013



As the switchback route is already implemented in some capacity by the road design, we suggest the stairs as the best option, as strengthening the connection to NSCC and the rest of the route is a top priority.

### Land Acquisition

Before construction on the decided trail can begin the Town must enter into agreements with the property owner for the section of land on NSCC's property owned by NS Supply & Service. Permission and cooperation is necessary for the trail installation.

### Permits and Policies

The Town must apply and receive all necessary permits prior to construction. A permit is required from the NS Department of Transportation and Infrastructure Renewal for any work occurring along a roadside right-of-way, which is relevant for Sections One and Four.

No zoning changes are suggested.

No drainage studies are required.

## 3.2 Development and Construction

See Trail Option One construction details in reference to Clearing and Grubbing, Drainage and Slope, Tread Construction, and Surfacing Materials.

### Contractors

Concrete surfaces will require skilled tradesmen for construction. Contractor pre-construction pricing should be acquired prior to the start of construction.

#### **Build Phases:**

Phase 1: Collection of easements, permits, and funding sources

Phase 2: Completion of trail construction

## 3.3 Maintenance

It is suggested that the Public Works Department take responsibility for the installation and general maintenance of the sidewalk sections of Trail Option Two, as it falls within their realm of responsibilities. Sections Two and Three will require additional maintenance for surfacing repairs if a granular surface is selected. Usually it requires to be 'topped up' every two years.

There is no additional maintenance from what is outlined subsequently as general maintenance.

## Suggested Partnerships for Maintenance

It is also suggested that the Town negotiate a partnership with NSCC Strait Campus to reduce the cost of required maintenance. It is suggested that NSCC takes responsibility for maintenance on Section One of the trail which falls on their land.

## Risks

One of the few foreseeable risks in implementing Trail option 2 is having to cooperate with the Transportation and Infrastructure Renewal Department for a large portion of this project, as there are many steps in their process to receive approval for construction.

## 3.4 Costs

The estimated cost for Trail Option 2 is \$243,950.00. This assumes concrete surfacing along two sections of the trail. See the cost estimate below.

Trail Option 2

Trail Section	Trail Standard	Length (m) <sup>(i)</sup>	Construction Note	Lineal Cost (m)	Estimated Price (Class "D")
1	Sidewalk	713	• new 2.1 m concrete sidewalk with curb in location of existing shoulder	\$ 200.00	\$ 142,600.00
2	Countryside Trail	307	• trail exists, may require widening of ROW and tread • may require additional tread material and depth • connector trailhead should be considered at intersection with existing north-south community trail	\$ 50.00	\$ 15,350.00
3	Countryside Trail	230	• no existing ground route, completely new trail • section requires ground truthing • steep grades, may require additional drainage design	\$ 100.00	\$ 23,000.00
4	Sidewalk	450	• new 2.1 m concrete sidewalk • trailhead should be considered at Reeves Street	\$ 140.00	\$ 63,000.00
SubTotal					\$ 243,950.00
5% Design Costs					\$ 12,197.50
15% Contingency					\$ 36,592.50
<b>Total</b>					<b>\$ 292,740.00</b>

i) Trail sub-section lengths are approximate

## Funding Sources

As suggested in Trail Option 1, alternatives to reduce the burden of funding from taxpayers, funding options other than separate taxation for NSCC and the businesses owners in the area would be beneficial to consider. These could include:

- Federal/ Provincial Gas Tax Fund

- Federation of Canadian Municipalities Green Municipal Fund

## 4.0 General Maintenance

Once constructed, the trail should be monitored to ensure it functions in the way intended, and to ensure exceptional maintenance. Surfacing repairs will be required due to use and erosion; the life span of the material will factor into how often this maintenance is required. In addition, site furnishing along the route, including garbage cans and garbage pick up, benches, and signage, will need to be monitored for regular maintenance.

### Annual Maintenance

- Spring clean-up and removal of flood debris from culverts and ditches or grade dips.
- Removal of winter garbage accumulation
- Prune surrounding vegetation at trail edge
- Repair site furnishings as required

### Winter Maintenance

The Town will need to analyze the route and use of the trail to decide if additional winter maintenance is required and can be allocated for in the budget. This would include clearing the trail of snow.

## 5.0 Additional Considerations

### Trail Signage

It is suggested that the Town implement way-finding signage in addition to the creation of the trail. This signage should be located around the NSCC Campus, around Reeves Street, at the entrances of the trail, and along the trail to note how far along the trail you are. Signage can do double work for promoting the trail and bringing awareness to its location and purpose as an active trail link. As well, caution signs should be implemented at intersections and road crossings to notify motorists and trail users of the danger potential.

### Measuring Success and Next Steps

After implementation of the trail, the Town should monitor the route to see if desire lines arise. The Town may find it best to update the trail to follow the natural path of people, or install landscaping to deter from using these desire lines. In addition, it is suggested that the Town monitor to see if expansion of the trail system would be beneficial, possibly to the community centre or a second scenic route.