Best Practice Guidelines for

Addressing of Rails, Trans Canada Trails, & Pipelines

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&
Service Nova Scotia and Municipal Relations

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A Methodology for Assigning Addresses to Rails, Trails and Pipelines

1. Overview

Purpose

This document is intended as a guideline for those responsible for assigning addresses to Rails – Trails- Pipelines (RTP) in Nova Scotia.

Audience

The intended audience includes anyone planning to assign addresses on Rails, Trails, or Pipelines in Nova Scotia. This includes Nova Scotia Civic Address File (NSCAF) maintenance tool users who are typically quality assurance personnel, and civic address assigners who are typically municipality staff.

Overview of Signage

The new address and signage information proposed for the E911 information infrastructure includes:

- Railroad and Pipeline Crossings, at intersections with roads;
- Trans Canada Trail Crossings, at intersections with roads;
- Trail Heads, at both ends of sections of Trans Canada Trail; and
- Trail Markers along the length of the Trans Canada Trail.

2. Methodology

There are a number of steps involved in assigning addresses to Rails, Trails, and Pipelines (RTP). They include acquiring the best available data, overlaying various layers in a GIS, and calculating the sign locations. The derived sign locations should be field checked. Once this is complete, the municipalities can assign civic addresses. Following is a detailed outline of the steps to assign civic addresses to RTP in Nova Scotia.

Step 1: Acquire Data.

The best available data should be used to determine the initial sign locations. This includes:

- The latest version of the NSCAF Roads, (from the Nova Scotia Geomatics Centre NSGC);
- The latest version of the Nova Scotia Trans Canada Trail, which can be obtained from NSHP&P (Nova Scotia Health Promotion and Protection) and NSDNR (Nova Scotia Department of Natural Resources);
- The best available rail line data (from the Railway Companies and NSGC); and
- The best available General Service Area (GSA) and county boundaries (from the NSTDB at NSGC).

Other data that may be useful are municipal boundaries, water bodies and NSCAF civic points.

Step 2: Determine Sign Locations in GIS

To initially determine the sign locations, a GIS program is needed to analyze the geographic information acquired in step 1. The majority of information that will be used for analysis (Trans Canada Trail, Rail Lines, etc) is in ESRI shapefile format. The geographic files should be in the UTM Zone 20 NAD83 CSRS98 projected coordinate system.

The following sections describe how to create geographic point files with the initial sign locations for trail crossings, pipeline crossings, railway crossings, and trail heads. These locations will need to be verified in the field (step 3) prior to civic addresses being assigned (step 4).

Trail Crossings

Overlay the NSCAF road and Trans Canada Trail data in a GIS to create crossing points. In ArcGIS, the Intersection command can be used to create a new point shapefile with points at each road and trail crossing.

Once the crossing points have been created, review them visually to identify any questionable points. This could be crossings in urban areas or sections of the trail where it follows a road. Fieldwork may have to be done to verify the validity of these points.

Add the data fields specified in the RTP data dictionary. Combine the resulting crossing points with GSA and county data to complete the County and GSA fields. Calculate the Easting and Northing fields using the 'Add XY Coordinates' command in ArcMap.

RTP Addressing Process - Trail Crossings

Signage at Trail Crossings use traditional civic address numbers as their primary location identifier. The civic numbers are addressed to the roads, so that for example, where the trail crosses St Margarets Bay Road it will be addressed as 4356 St Margarets Bay RD, Lewis Lake, and signed as such. Trail names are also posted with the civic address as an added piece of location information. The use of traditional civic addresses is more recognizable to the public, and addressing signs to the road aids emergency responders in navigation to the site. Both sides of the roads are uniquely addressed by odd or even numbers posted on opposite sides of the road. This convention identifies the trail crossing intersections. In addition, posting odd and even numbered signs enables emergency responders, if required, to determine the direction of travel from the road, should assistance be required up the trail corridor. *(Note: It is the mandate of the Municipality to assign civic address numbers).*

Trail Heads

Trail Heads occur at both ends (the start and end) of named sections of trails. If any of these locations occur at a road intersection then it is considered a trail crossing. Both trail crossings and trail heads use the same signage.

To locate the Trail Heads in your county or municipality, overlay the NSCAF road data and Trans Canada Trail data. Manually add points to a Trail Head Geographic Point file at any location where there is a Trail Head but there is no road crossing. It may be useful to underlay the Trail Crossing Geographic Point file. Trail Heads occur at the beginning and ending of trails, trail name changes, and trail status changes. If a Trail Head occurs at a road intersection, it is a trail crossing.

Add the data fields specified in the RTP data dictionary. Combine the trail head points with GSA and county data to complete the County and GSA fields. Calculate the Easting and Northing fields using the 'Add XY Coordinates' command in ArcMap.

RTP Addressing Process - Trail Heads

Trail Head signs will be placed at both ends (the start and the end) of the named section of trail. If a Trail Head does not start or end at a road crossing but in a remote area removed from an addressed road, the civic address assigned to the Trail Head sign will be calculated as the civic address number assignable to the access point of the nearest addressed road from which the quickest and easiest access to that Trail Head sign is provided. *(Note: It is the mandate of the Municipality to assign civic address numbers).*

Trail Markers

Markers along the trail will be placed at intervals of approximately 1km. A numeric identifier will be given to each marker sign. The word "km" will not be included on the signs to allow for offsets or gaps in the numbering and to accommodate for future sections of the trail.

The Trans Canada Trail system in Nova Scotia consists of shorter, but contiguous named sections. The numbering of distance markers on the TCT in Nova Scotia follows the pattern shown below, resetting each segment to 0 km at the beginning of each segment. Following are the segments along with their associated number ranges.

Primary TCT
Segment 1 – North Sydney to NS/NB Border
Number Range: 0 to 595
Segment 2 – Tatamagouche to Halifax Harbour
Number Range: 0 to 252

Secondary TCT
Segment 3 – Halifax to Yarmouth
Number Range: 0 to 408
Segment 4 – Yarmouth to Truro
Number Range: 0 to 342
Segment 5 – Bridgewater to Middleton
Number Range: 0 to 85
Segment 6 – Mahone Bay to Lunenburg
Number Range: 0 to 14

Each municipality and county will have a numbering range within their boundaries. As the Trans Canada Trail develops, these numbering ranges will also change.

To locate the initial Trail Marker signs, create an empty Trail Marker Geographic Point File in a GIS. Add the data fields specified in the RTP data dictionary. Once you have the numbering range for your area, mathematically calculate points along the trail at 1km intervals. Update the field Marker No. with each location's numeric signifier. Combine the trail marker points with GSA and county data to complete the County and GSA fields. Calculate the Easting and Northing fields using the 'Add XY Coordinates' command in ArcMap.

Assigning and Posting Address Numbers

Trail Markers are numbered sequentially from the start of one segment of the Trans Canada Trail onwards. For example, numbering is calculated for the entire length of Segment 1, which starts in North Sydney and ends at the NS/NB border near Amherst. All sections of trail are not developed at the same time but provision is allowed in the numbering system to accommodate and apply the appropriate numbers to these sections of trail as they are developed. This numbering approach emulates a modified version on the system used to assign kilometer markers to the 100 Series Highways in the Province of Nova Scotia. The numbering system is based on a recommendation to divide the Trans Canada Trail in Nova Scotia into the segments listed above.

Rail Crossings

The NSCAF road data and the best available rail data should be used to identify rail crossing points. The most uniform and consistent rail data is contained in the NSTDB, however, some railway companies have better data, others have very little or none.

If the existing Nova Scotia Topographic Database (NSTDB) rail centreline data is used, it should be reviewed to identify and remove abandoned track. Any lines with a feature code of RRRR54 (Ruin/Inactive/Abandoned) should be deleted. This includes almost all of rail lines in the south western half of the province. If any orphaned sections of tracks remain in this part of the province, they should also be removed. Any centreline data from the rail companies should be used to confirm the existing track infrastructure and the track that has been abandoned.

Overlay the rail centreline and NSCAF road data in a GIS, such as ArcGIS, to create crossing points. Save these points to a Railway Crossing Geographic Point File. In ArcGIS, the Intersection command can be used to create points where the rail crosses the road.

Visually edit the crossing points to remove duplicate points on divided highways, twinned railway tracks, etc.

Add the data fields specified in the RTP data dictionary. Combine the resulting crossing points with GSA and county data to complete the County and GSA fields. Calculate the Easting and Northing fields using the 'Add XY Coordinates' command in ArcMap.

Pipeline Crossings

The NSCAF road data and the best available pipeline data should be used to identify pipeline crossing points.

Overlay the pipeline centreline and NSCAF road data in a GIS, such as ArcGIS, to create crossing points. Save these points for a Pipeline Crossing Geographic Point File. In ArcGIS, the Intersection command can be used to create points where the pipeline crosses the road.

Visually edit the crossing points to remove duplicate points on divided highways or other similar areas.

Add the data fields specified in the RTP data dictionary. Combine the resulting crossing points with GSA and county data to complete the County and GSA fields. Calculate the Easting and Northing fields using the 'Add XY Coordinates' command in ArcMap.

RTP Addressing Process - Rail Crossings and Pipeline Crossings

Signage at Rail and Pipeline Crossings use traditional civic addresses numbers as their primary location identifier. The civic numbers are addressed to the roads, so that for example, where the railway or pipeline crosses Bridge Avenue it will be addressed as 2237 Bridge Avenue, Stellarton, and signed as such. The use of traditional civic addresses will be more recognizable to the public, and addressing to the roads will aid responders in navigation to the site. Both sides of the roads are uniquely addressed by odd or even numbers posted on opposite sides of the road. This convention identifies the railway crossings and pipeline crossings where they intersect with roads. In addition, posting odd and even numbered signs enables emergency responders, if required, to determine the direction of travel from the road, should assistance be required up the railway/pipeline corridor. *(Note: Although the installation and maintenance of the Rail Crossing and Pipeline Crossing signs rests with the railway and pipeline companies, it is still the mandate of the Municipality to assign the civic address numbers).*

Step 3: Field Validation of Points

Fieldwork should be undertaken with the Partners, such as the railway companies, pipeline companies and Trail Associations, to validate the proposed sites calculated in the last step. This may be especially necessary in more populated areas.

Step 4: Assignment of Civic Addresses

Once the locations of the civic address signs have been finalized through field work, the municipality has the mandate to assign the civic addresses to them. The municipality should follow its own procedure for assigning civic addresses.

Civic addresses will need to be assigned to trail heads, trail crossings, railway crossings, and pipeline crossings. For crossing signs, both sides of the roads are to be uniquely addressed by odd or even numbers posted on opposite sides of the road. The civic address assigned to a trail head sign should be calculated as the nearest access point from an addressed road. Trail marker signs do not require civic addresses.

For more information on civic addressing in Nova Scotia, refer to "The Civic Address Users Guide V3.0" located at http://www.nsgc.gov.ns.ca/documents.htm.

Naming Sections of the Trans Canada Trail in Nova Scotia

1. Overview

Purpose

This document is intended as a guideline[1] for those responsible for naming sections of the Trans Canada Trail in Nova Scotia.

Audience

The intended audience includes the NS Trails Federation, local Trails Associations, Municipalities, and other agencies that may be involved in naming sections of the Trans Canada Trail. This document may also be incorporated, in whole or in part, into the existing documents: the *Nova Scotia Trails Manual* and /or the *Nova Scotia Civic Address Users Guide.*

Responsibility

It is acknowledged that the responsibility for naming sections of trails rests with the local Trails Associations or other agency that is responsible for developing the section of trail. The Nova Scotia Trails Federation may play a coordination role.

2. Best Practices for Naming Trails

Many of the principles for naming roads in the Nova Scotia Civic Address File (NSCAF) are also applicable to naming trails. Simply stated Trails will be named in a similar manner to streets and roads in accordance with NS Civic Address Users Guide. Trails, however, will be given a unique Street type of "Trail." Following are some guidelines that are listed in the *Nova Scotia Civic Address Users Guide* and are suggested for use in trails naming.

- Names should not be easily confused with similar sounding names or be difficult to pronounce or spell.
- Names that reflect the local history and heritage are encouraged. Theme names are also acceptable and are commonly used.
- Naming for individuals is a common practice, but typically it is only acceptable if the person is deceased, or noteworthy of such a request.
- Regarding the specific content of the name, some elements are not recommended as they may cause confusion in spelling or usage. Abbreviations, punctuation, and single

[1] Documentation referenced includes:
- *Civic Address Users Guide*; NS Service Nova Scotia and Municipal Relations, NS Geomatics Centre, Amherst, NS.

Nova Scotia Trails Manual, NS Trails Federation;.

letters should all be avoided as part of a name. An exception to the use of single letters is when it is due to the removal of punctuation (such as Bras D Or Road.)

- The use of cardinal directions (north, south, east, and west) should not be used as part of a name, since they have a specific use in name suffixes.
- Homophones (words pronounced the same as other words but differing in meaning, whether spelled the same way or not) should always be avoided since when spoken, they will have the same effect as duplicate names, as well as the added difficulty of different spelling. Even words that are spelled quite differently may sound close enough, when spoken, to cause confusion (e.g. Gem and Jim.)

Trail names can relate to the local community group or established trail name but may also include a community name or the county name for clarification of location.

3. Trail Names Registry

It is recommended, as is the present custom, that the naming of the sections of trail remains the responsibility of the local Trails Association in consultation with municipalities, and through public consultation or local interest. To establish standards, to avoid unnecessary confusion, and the possibility of assigning duplicate trail names within the province, a record or "Registry" of trail names should be maintained. The foregoing procedure will ensure that trail names throughout the province are unique.

Signage Design, Production, Purchase and Installation

1. Overview

Purpose

This document is intended as a guidelines document [2] for those with responsibility for designing, producing, purchasing, or installing addressing signs. These signs provide address information and identify civic address points at the intersections of rails, pipelines or trails with roads; or identify points along linear corridors. The purpose of the signs is to assist in providing geographic, location information to the general public or to emergency response services called to respond to an emergency incident.

This document may also be incorporated, in whole or in part, into the existing documents: the *Nova Scotia Trails Manual* and /or the *Nova Scotia Civic Address Users Guide*.

Audience

The intended audience includes the trail associations, municipalities and associated partners to participate in one or more of the activities related to installation and maintenance of signs as described later in this document.

Roles and Responsibilities

Municipalities and / or District Planning Commissions: Assign civic numbers for Trail Heads, Trail Crossings, and Railway and Pipeline Crossings; Install signs at Trail Crossings (in cooperation with local Trails Associations);
Railway Companies: Install and maintain Rail Crossing signs and supply corridor marker information;
Pipeline Companies: Install and maintain Pipeline Crossing signs and supply corridor marker information;
NS Trails Federation: Coordination and liaison with the local Trails Associations;
Local Trails Associations: Install and maintain all Trail Marker signs. In cooperation with Municipalities to install and maintain Trail Crossing signs.

Importance of Signs

Addressed sign designs have been proposed to identify particular locations along otherwise unmarked linear corridors. This includes - Trails (those designated, or to be designated, as Trans Canada Trails), Railways, and Gas Pipelines. The signs will be identified in the Province's civic addressing databases to aid in emergency response.

[2] Documentation referenced includes:
- *Civic Address Users Guide*; NS Service Nova Scotia and Municipal Relations, NS Geomatics Centre, Amherst, NS.
- Nova Scotia Trails Manual, NS Trails Federation; and

Signage is required and should be posted to enable users of these corridors to give a point of reference in the case of an emergency.

Appearance of Signs

Text height on signs was designed to balance legibility with the sign dimensions. Legibility was based on a guideline of 1" per 40' of visibility, with the prominent features being the civic address number or the trail marker number. The maximum sign dimensions were designed to fit the context of the other local signage. In the case of trail markers, there was consideration for using smaller signs to minimize the disruption of trail aesthetics.

Types of Sign

Three types of signs were designed to identify the location of the five different points to be addressed (due to similarities in the information portrayed, a single sign design serves for the Trail Heads and Trail Crossings; and another single design serves for the Railway and Pipeline Crossings). Definitions for each of the five features are provided in the appropriate section below. The five features to be addressed are: Trail Heads, Trail Crossings, Trail Markers, Rail Crossings, and Pipeline Crossings.

2. Sign Design and Specifications

Trail Heads and Trail Crossings

Trail Heads and Trail Crossing Signs - are 18" x 18" signs with white lettering on blue background indicating trail name, complete civic address number (prominent feature), road name, community name, and emergency contact information (due to similarities in the information portrayed, a single sign design serves for the Trail Heads and Trail Crossings; and another single design serves for the Railway and Pipeline Crossings).

The Trail Heads and Trail Crossings signs are designed to conform to the generic blue civic signs typically used in the Province of NS. A person calling for E911 services from a cellular telephone is expected to report all of this information as the E911 infrastructure is presently not available to *automatically* locate the caller, and since calls may be routed to any Public Service Answering Point in the province, the 911 operator will not be aware of where the call is originating from.

Definitions:

Trail Heads are defined by the Nova Scotia Trail Federation as the beginning or ending point of a trail or trail segment that typically offers some combination of the following: restrooms, registration, water, information sign, picnic tables, interpretative centre, Nordic ski chalet, parking, etc.

Trail Crossings are defined as the points of intersection of a trail with an addressable road.

Specifications for Trail Heads and Trail Crossing Signs

Physical Signage Specifications (See Figure 1 for example)

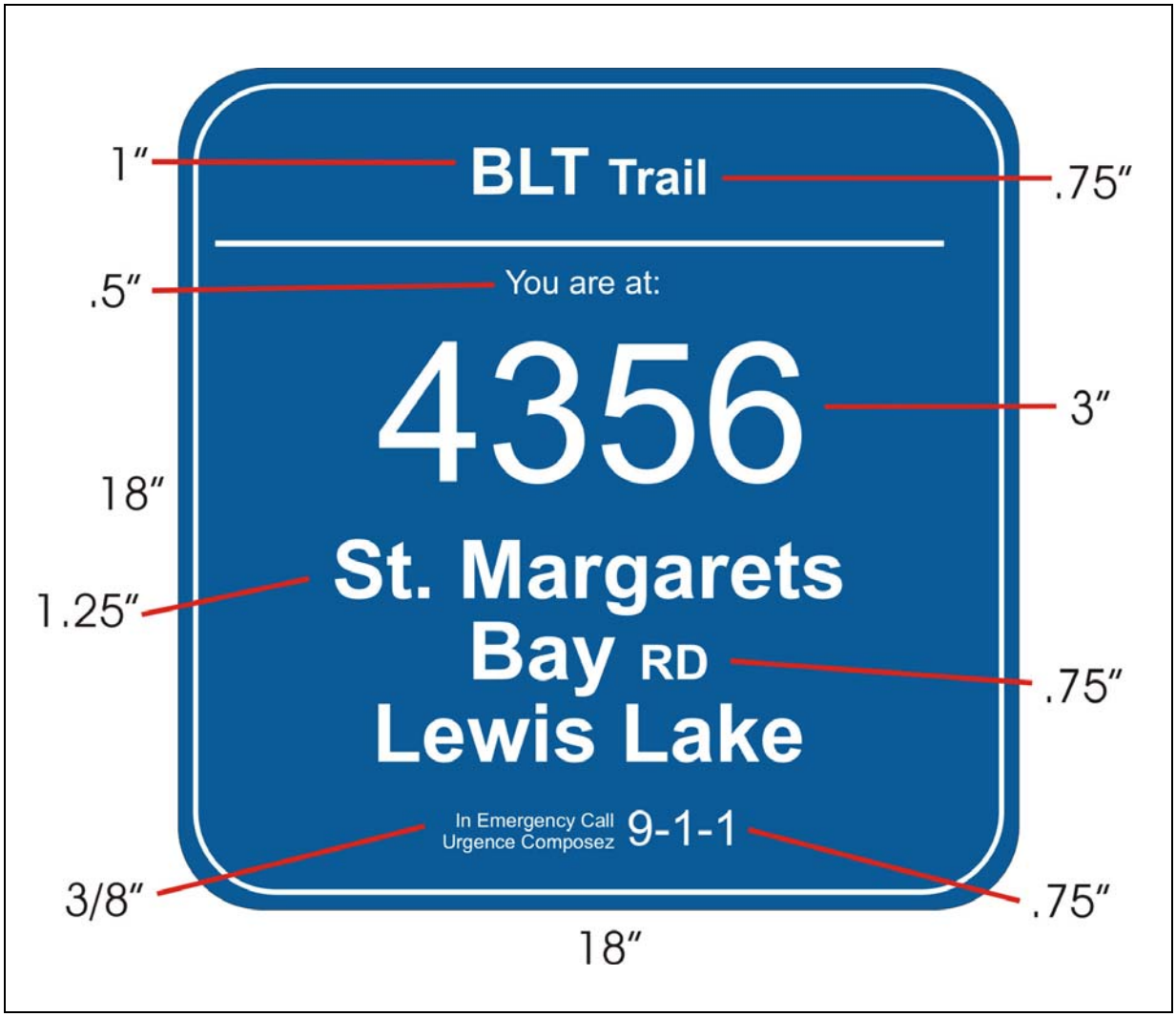
Material: - ¾"(2cm) **Board plywood covered with reflective material and text applied**
Size: -*18" x 18" (*45cm X 45cm)
Shape: -**Square**
Colour: -**White Lettering on Blue Background**
Mounting: -**Treated Wood Posts** - 4" x 4" x 10' (10cm x 10cm x 3.08m)
Mounting Hardware: **- 2 Lag Bolts ¼" x 3" & 2 Washers, per sign, Hot Dipped Galvanized;**

Sign Content: -Enclosed **thin white border** just inside the outer perimeter of the sign;

Top to Bottom -**White Lettering** on **Blue Background**;
Line one: -Trail Name "**BLT**" (1" Letters) the word "**Trail**" (0.75" Letters);
Line two: -**White horizontal line** across the sign but not touching the border;
Line three: - The words "You are at:" (0.5" Letters);
Line four: -Civic Address Number "**4356**" (3" Letters);
Line five :} -Street/Road Name "**St. Margarets Bay**" (1.25" Letters)
Line six :} - Street/Road Type "**RD**" (0.75" Letters);
Line seven: -Community Name "**Lewis Lake**" (1.25" Letters);
Line eight: -Emergency contact information "**In Emergency Call - Urgency Composez**" (3/8" Letters) "**9-1-1**" (0.75" Letters).

Trail Head and Trail Crossing Signs

Figure 1



Trail Markers

Trail Marker Signs – are 12" x 12" signs with white lettering on blue field indicating: trail name, a unique, sequential number along the trail corridor (prominent feature), and emergency contact information.

Definition:
The prominent feature on the Trail Marker sign is the sequential number. The Trail Marker signs are also designed to conform to the generic blue civic signs typically used in the Province of NS. Trail Markers are intended to provide trail users a sense of location and distance traveled along the length of the corridor, while at the same time providing an identifiable reference point that can be used to assist emergency responders to quickly reach the site of an emergency incident.

Background Rationale
The original goal was to indicate distances from a starting point by using signs at 1 kilometre intervals (increasing or decreasing dependant on direction of travel). Because the Trans Canada Trail is being constructed in disjointed sections, it was deemed to be too complex to use a consecutive numbering system signed at 1 km intervals while at the same time maintaining the integrity of the numbering system. The compromise reached was to design signage using a sequential numbering with signs placed at approximately 1 km intervals, but not to label them as km markers. A Trail Marker will only be 500 metres at the furthest distance from a trail user. Trail markers will be functional but unobtrusive.

Specifications for Trail Marker Signs
Physical Signage Specifications (See Figure 2 for example)

Material:	- *¾"(*2cm) **Board plywood covered with reflective material and text applied**
Size:	-*12" x 12" (*30cm X 30cm)
Shape:	-**Square**
Colour:	-**White Lettering on Blue Background**
Mounting:	**Treated Wood Posts** - 4" x 4" x 10' (10cm x 10cm x 3.08m)
Mounting Hardware:	**- 2 Lag Bolts ¼" x 3" & 2 Washers, per sign, Hot Dipped Galvanized;**

Sign Content: -Enclosed **thin white border** just inside the outer perimeter of the sign;
Top to Bottom -**White Lettering** on **Blue Background**;

Line one:	-Trail Name "**Salt Marsh"** (1" Letters);
Line two:	-the word "**Trail**" (0.75" Letters);
Line three:	-**White horizontal line** across the sign but not touching the border;
Line four:	- The words "You are at Trail Marker Number:" (3/8" Letters);
Line five:	-Sequential Number "**268**" (3" Letters);
Line six:	-Emergency contact information "**In Emergency Call - Urgency Composez**" (3/8" Letters) "**9-1-1**" (0.75" Letters).

Trail Marker Signs

Figure 2

Rail Crossings and Pipeline Crossings

Rail Crossing and Pipeline Crossing Signs - are 12" x 12" signs with white lettering on blue field indicating complete civic address - number (prominent feature), road name, community name, and emergency contact information.

Definitions:
Rail Crossings are defined as the points of intersection of a railway with an addressable road.

Pipeline Crossings are defined as the points of intersection of a pipeline with an addressable road.

Specifications for Rail and Pipeline Crossing Signs

Physical Signage Specifications (See Figure 3 for example)

Material:	*- ¾" (*2cm) **Board plywood covered with reflective material and text applied**
Size:	*-12" x 12" (*30cm X 30cm)
Shape:	**-Square**
Colour:	**-White Lettering on Blue Background**
Mounting:	**Treated Wood Posts** - 4" x 4" x 10' (10cm x 10cm x 3.08m) ***Mounting***
Hardware:	**- 2 Lag Bolts ¼" x 3" & 2 Washers, per sign, Hot Dipped Galvanized;**

Sign Content: -Enclosed **thin white border** just inside the outer perimeter of the sign;

Top to Bottom -**White Lettering** on **Blue Background**;

Line one:	-The words "You are at:" (0.5" Letters);
Line two:	-Civic Address Number "**2237**" (3" Letters);
Line three:	-Street/Road Name "**Bridge**" (1" Letters);
Line four:	-Street/Road Type "**AVE**" (0.5" Letters); & -Community Name "**Stellarton**" (1" Letters);
Line five:	-**White horizontal line** across the sign but not touching the border;
Line six:	-Emergency contact information "**In Emergency Call - Urgency Composez**" (3/8" Letters) "**9-1-1**" (0.75" Letters).

Rail Crossing and Pipeline Crossing Signs

Figure 3

3. Sign Installation and Maintenance Guidelines

Purpose

This document is intended as a guidelines document for those with responsibility for installation and maintenance of address signs and posts It is recognized that site conditions on which signs may have to be installed may vary from waterlogged marsh to bedrock. Such conditions dictate that the installers will have some latitude in judgment concerning the installation point for the signs. The guidelines are intended to assist in these decisions in the interest of uniformity and standardization, keeping in mind the general purpose of the signs in enabling the general public to feel a sense of geographic location or the emergency response services called to respond to an emergency incident. This document may also be incorporated, in whole or in part, into the existing documents: the *Nova Scotia Trails Manual* and /or the *Nova Scotia Civic Address Users Guide.*

Audience

The audience for this document includes the staff of Municipalities, the Railway and Pipeline Companies, and the volunteer members of the local Trails Associations. The audience will also include others who are involved in the installation and maintenance of signs.

Roles and Responsibilities

Municipalities: having the mandate to assign civic address numbers within their jurisdiction are being requested to assign civic address numbers to points calculated by the Province to address Trail Heads, Trail Crossings, and Railway and Pipeline Crossings, as well as to install supplied signage[3] that is to be posted along addressed roads. The municipalities will also be requested to monitor the status of the installed signage during their routine activities and to report any missing or damaged signs to the provincial government to initiate their replacement.

Railway and Pipeline Companies: The Pipeline Company has already installed markers along their corridors and have had civic numbers assigned to their above ground facilities.

Both companies will also be requested to monitor the status of the installed signage during their routine activities and to report any missing or damaged signs to the appropriate internal authority or to municipalities (in the case of signs on roadways) to initiate their repair or replacement.

Local Trails Associations: have the mandate to plan, build, obtain approval for, and to maintain trails. The Nova Scotia Trails Federation has been asked, and has agreed, to act as liaison and coordinator with the local Trails Associations on as required basis. As part of a Provincial / Trails Association Data Exchange the associations will be asked to monitor the status of the installed signage during their routine activities and to report any missing or damaged signs to the appropriate municipality to initiate their replacement.

[3] **Trail Heads** (at road crossings only) and **Trail Crossings**.

Sign Installation

A general description and the dimensions of the signs and their mounting materials are as follows:

- **Trail Heads and Trail/Road Crossings** - 18" x 18" signs with white lettering on blue field indicating trail name, complete civic address - number (prominent feature), road name, community name, and emergency contact information;

- **Trail Markers** - 12" x 12" signs with white lettering on blue field indicating trail name, a unique sequential number along the trail (prominent feature), and emergency contact information;

- **Rail Crossings and Pipeline Crossings** - 12" x 12" signs with white lettering on blue field indicating complete civic address - number (prominent feature), road/street name, community name, and emergency contact information.

- ***Material:*** - ¾" (2cm) plywood covered with reflective material, printed;
- ***Mounting***: - Treated Wood Posts - 4" x 4" x 10' (10cm x 10cm x 2.5m);
- ***Hardware:*** - 2 Lag Bolts ¼" x 3" & 2 Washers, Hot Dipped Galvanized.

Sign Installation

Signs being placed in road rights of way will have had the appropriate authority granted in advance by the respective authority (provincial or municipal governments). The general procedures for installing all signs will be similar irrespective of the type of sign, or of those who are responsible for their installation. However, sign placement on road rights of way will differ from those placed on a trail. For signs placed by the railway companies at Rail Crossings, if placed in a road right of way, the procedures and placement will be similar to other signs placed in a road right of way. However, if placed on railway property the signs' placement will be at the discretion of the railway company; provided that the sign is located in an unobstructed line of sight for vehicles approaching on the road from either direction, and that there exists a set back of a minimum of 10 feet (3 metres) from the traveled portion of the road. Similar conditions will apply to the installation of Pipeline signs.

Trail Heads, Trail Crossings, Rail Crossings, and Pipeline Crossings installed at road Rights of Way.

The Trail Head and Trail Crossing signs are essentially identical in size and information content except for the unique civic address number assigned to each sign. The Rail and Pipeline Crossing signs are smaller in size and contain different information. Each is mounted on a single wood post using lag bolts and washers.

Placement

One sign will be placed on either side of the road (odd number on one side and even number on the other) facing approaching traffic. The sign will be placed at a minimum

of 10 feet (3 metres) off the traveled portion of the roadway, beyond the drainage channel, on the upper "Side Slope" of the Road Right of Way. It will be placed in front of, not on the Trail Tread (the portion of a trail on which the users pass) or not on the railway line.

Posts

The post will be placed in a hole of approximately 6 to 10" (15 to 25cm) in diameter, dug to a depth of approximately 3' (90cm), and secured by a concrete footing, gravel or other available material. The post will be positioned so that one of its four flat sides is parallel with the road and can accommodate mounting the sign so that it faces the line of sight for approaching vehicles. The sign will be mounted on the post by the hardware supplied at a level so that the bottom of the sign is at least 4' (120cm) above the ground.
Note: Machinery (post - hole diggers or augers) may be necessary to dig the holes.

Trail Heads (Off Road)
The only difference in procedures between Trail Heads, "off road", as opposed to those at Road Crossings is the placement of the sign. At locations where parking lots or other amenities are present the Trail Head sign should be installed as described above but facing the parking lot, or the direction of a person or vehicle approaching the start of the trail. At locations without a parking lot or amenities, (e.g. between two differently named sections of trail) in the wilderness, the sign should be placed perpendicular to trail corridor; but off to the side of the Trail Tread by 0.6m to 3.0m or from 3.0m to 4.5m if the trail is used by snowmobiles or other mechanized vehicles for safety reasons (these users travel at faster speeds).

Trail Markers

Trail Markers are placed only along the length of the trail corridors at intervals of approximately 1 km. All installation procedures described for Trail Heads and Trail Crossings apply again with the exception of placement. As with the "off road" Trail Heads, the signs for the Trail Markers should be placed off to the side of the Trail Tread by 0.6m to 3.0m or from 3.0 to 4.5m if the trail is used by snowmobiles or other mechanized vehicles for safety reasons (these users travel at faster speeds). In addition, for trail markers, a sign is being placed on both sides of the post so that it is visible to trail users traveling in both directions. Because there are two signs on one post, extra care must be taken in the placement and orientation of the post so that the line of sight for both signs is maximized to the advantage of the users approaching from opposite directions on the trail.

Sign Maintenance

The following suggestions are taken from the Nova Scotia Trails Manual[4]:

[4] Nova Scotia Trail Construction Manual
Natasha Warren, Developing Recreation Trails in Nova Scotia: Planning, Design, Construction, Maintenance and Management.

"Typically, a major inspection is done once a year in addition to a few casual checks throughout the year to identify destroyed or removed signs. For the yearly inspection …., check that no signs are missing and that all information is intact. Keep a separate record to note the conditions and repairs. Inspect for the following:
• cracked, peeled, faded, or blistered surfaces, including lettering and symbols;
• distorted panel material (e.g., twisted wood, rusted metal);
• damage to sign supports;
• security of bolts, nuts, and washers;
• dirt and graffiti;
• growth that interferes with visibility
Ensure that all signs are in place and that they identify where new signs are needed."

It is envisioned that in the normal course of daily work, the Partners would assume responsibility for sign maintenance will note and report missing or damaged signs or material. Materials that are damaged or missing should be reported to the appropriate Municipality that will contact the appropriate authority to request replacement or other repair (the responsibility for receiving this information, replacement or repair of signs, and acting upon this information remains to be determined).