
Recommendations

Design Standards & Best Practices

This section provides an overview of standards and guidelines that are used in trail development. These are meant to provide a benchmark for trail development and provide a resource that the Town may use to develop its trails over time.

Trail Classification System

The Trail Classifications (based on Parks Canada and other resources) on the following pages can be used by the Town to help with asset management, resource conservation, and visitor experience management. They are a guide for the trail developer to ensure that the trail is built and maintained in a way that will meet the requirements and expectations of different user groups. Different levels of technical construction and service vary depending on the trail classification and are detailed in the charts on the following pages. When developing trails, different enhancements can occur in phases. Not every item in these charts needs to be achieved at once, but they represent an idea of the highest standard of trail development that may be achieved over time.

As each individual trail is slated for development, a chart similar to those on the following pages should be created and details for that trail should be included in each applicable section. This document then becomes a record of the planned level of development and maintenance for that trail.

Type 1 Trail Classification

Technical Details	Definition	<ul style="list-style-type: none"> • Paved or hard packed surfaced double track trail, all weather use, with no obstacles in surface • Use compacted crushed rock, asphalt or chip-seal coat surface • Provide interpretive and directional signs, benches, and viewing areas where appropriate • Machine and or hand-built and maintained
	Distance	<ul style="list-style-type: none"> • Typical distance does not exceed 10km
	Trail Profile	<ul style="list-style-type: none"> • Flat to gently rolling • Typical elevation gain of 0-100m
	Trail Surface	<ul style="list-style-type: none"> • Paved or surfaced • Hard packed and stable • Typical average width of 1.5-3.0 m
	Signage (general signage and information provided)	<ul style="list-style-type: none"> • Trailhead information • Interpretive panels • Route markers • Trail orientation maps • Maximum information provided
	Obstacles or Stairs	<ul style="list-style-type: none"> • Few or no obstacles • No stairs or minimal use of stairs
Level of Service	Facilities and Amenities	<ul style="list-style-type: none"> • Parking lot • Washroom • Bridges • Benches • Maximum user facilities
	Inspection	<ul style="list-style-type: none"> • Frequently or upon user comment
	Deadfall Clearing	<ul style="list-style-type: none"> • As required
User Safety	Infrastructure	<ul style="list-style-type: none"> • Major (bridges, boardwalks, viewing platforms)
	Risk Mitigation	<ul style="list-style-type: none"> • Maximum effort made to reduce risk
	Risk Identification	<ul style="list-style-type: none"> • Highly detailed explanation of risk - typically provided at trailhead, on maps, and at areas of risk along the trail
	Risk Inspection	<ul style="list-style-type: none"> • Weekly/monthly or upon user comment • Can occur at the same time as service inspections



Type 1 Trail in Rainbow Gully Park



Type 1 Trail in Voisey's Brook Park



Type 1 Trails can also be paved (Prein & Newhof)

Type 2 Trail Classification

Technical Details	Definition	<ul style="list-style-type: none"> Natural surfaced packed single track trail or double track trail Use rock for surfacing, or native material from site. May be a paved surface Provide interpretive and directional signs, benches, viewing areas where appropriate Machine or hand-built and maintained
	Distance	<ul style="list-style-type: none"> Typical distance does not exceed 20km
	Trail Profile	<ul style="list-style-type: none"> Gently rolling with short steep sections Typical elevation gain of 0-1,000m
	Trail Surface	<ul style="list-style-type: none"> Surfaced or natural Firm and stable Typical average width of 1.0-1.5 m
	Signage (general signage and information provided)	<ul style="list-style-type: none"> Basic trailhead information Route markers Trail orientation maps Moderate information provided
	Obstacles or Stairs	<ul style="list-style-type: none"> Infrequent obstacles Stairs may be present
	Facilities and Amenities	<ul style="list-style-type: none"> Parking lot Outhouse/pit toilets Bridges Benches Moderate user facilities
Level of Service	Inspection	<ul style="list-style-type: none"> Seasonal or upon user comment
	Deadfall Clearing	<ul style="list-style-type: none"> As required/seasonal
	Infrastructure	<ul style="list-style-type: none"> Moderate (bridges, boardwalks, viewing platforms)
User Safety	Risk Mitigation	<ul style="list-style-type: none"> Moderate effort made to reduce risk
	Risk Identification	<ul style="list-style-type: none"> Moderate detailed explanation of risk - only significant risks identified Information typically provided at trailhead and at areas along the trail
	Risk Inspection	<ul style="list-style-type: none"> Seasonal or upon user comment Can occur at the same time as service inspections



Existing Princes Mountain Lookout trail



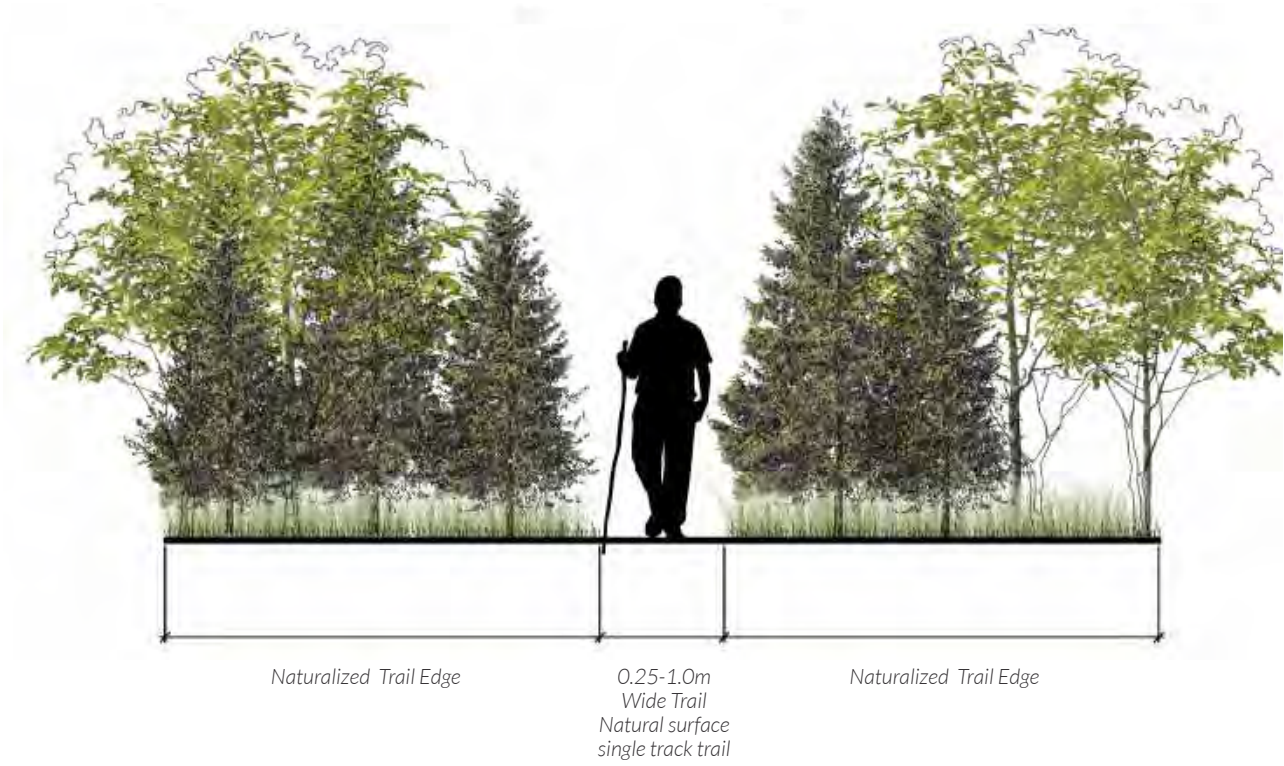
Type 2 Trails can be natural or native material (Bitstop)



Existing Dans Road trail

Type 3 Trail Classification

Technical Details	Definition	<ul style="list-style-type: none"> Natural surface single track trail Trail tread may be constructed or established by clearing a corridor and marking the route Whenever possible use natural native material from site Provide minimal signage Hand-built and maintained
	Distance	<ul style="list-style-type: none"> May exceed 20km
	Trail Profile	<ul style="list-style-type: none"> Rolling with steep sections that continue for long periods Typical elevation gain of 0-1,000+m
	Trail Surface	<ul style="list-style-type: none"> Natural May be loose in areas Typical average width of 0.25-1.0 m
	Signage (general signage and information provided)	<ul style="list-style-type: none"> Basic trailhead information Minimal route markers Minimal information provided
	Obstacles or Stairs	<ul style="list-style-type: none"> Obstacles common Stairs may be present
Level of Service	Facilities and Amenities	<ul style="list-style-type: none"> Bridges or other water crossings Minimal user facilities
	Inspection	<ul style="list-style-type: none"> Annually or upon user comment
	Deadfall Clearing	<ul style="list-style-type: none"> Annually
User Safety	Infrastructure	<ul style="list-style-type: none"> Low (bridges, boardwalks)
	Risk Mitigation	<ul style="list-style-type: none"> Low effort made to reduce risk
	Risk Identification	<ul style="list-style-type: none"> Low detailed explanation of risk - only site-specific or unusual risks identified Information typically provided at trailhead
	Risk Inspection	<ul style="list-style-type: none"> Annually or upon user comment Can occur at the same time as service inspections



East Coast Trail stairs at Beachy Cove



Existing trail at Beachy Cove Hill



Wetland crossing example (The Boston Globe)

Mountain Bike Trail Classification

During the community engagement phase, it was clear that Portugal Cove - St. Philip's has potential to become a mountain biking destination on the Avalon. A large number of survey respondents expressed the desire to see a mountain biking trail system purpose-built in the community. Although the scope of this plan was to focus on hiking and walking trails, consideration has been given to mountain biking trails within the trail network. When it comes to mountain bike trail standards, the Avalon Mountain Biking Association (AMBA) should be engaged, as there are different types of mountain biking trails that require different infrastructure. AMBA can help determine the most suitable types of trails within the highlighted trail areas.

Mountain biking could also become an economic driver for the Town. Mountain biking tourism is becoming more and more popular in North America. Mountain Bike Atlantic was established as a collaborative effort to promote the Atlantic region as a global destination for mountain biking. It is supported by an Advisory Committee of local experts from all Atlantic provinces and they engage with trail communities to collaborate on enhancing mountain biking products and experiences that help promote and sustain visitation and improve the visitor experience for residents and tourists alike.



(MTB Mag)



Mountain biking infrastructure at Skinners Road



(Red Bull)

ATV Trail Classification

During the community engagement phase, the lowest number of respondents were ATV trail users. The feedback from this small user group indicated that they wish to be able to use the existing ATV trails within the community into the future. They do not want to see their current trails turned into pedestrian-only trails. Fortunately, many of the existing ATV trails that the design team were made aware of exist on the outskirts of the community, heading towards the airport and Torbay, and from Dan’s Road towards Paradise and Pippy Park. These trails do not necessarily add to the Town’s connected trail network goal, therefore they can remain as ATV trails. No new ATV trails are being proposed as a part of this plan, so specific trail design standards have not been provided.

A small percentage of respondents requested that the Town roads become ATV-friendly, referencing the City of Corner Brook as a precedent, but a review of that type of transportation network is outside the scope of this current project.



(Crossing Newfoundland by ATV)



Trail Rating System

Trail Ratings are a simplified version of the classifications. While the classifications are intended for use by the Town, the ratings are intended for public consumption. This rating system of Easy, Moderate, and Difficult is used by Parks Canada and other trail networks across the country. It is recognized and understood by trail users and the Town should consider adopting a similar rating system as well. The tables on the following pages outline the information that should be communicated to trail users about the difficulty level of each trail. This information can be posted on trailhead signage and on an online trail map. The information can also be included when marketing the trails to allow users to plan their trips.




Route marker highlighting trail difficulty level (Pinterest)

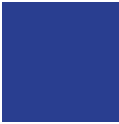


Route marker highlighting trail difficulty level (Pinterest)


Easy Trail Rating

Trail Rating Definition	Definition	<ul style="list-style-type: none"> • Suitable for all users including those with no trail experience. Visitor may be prepared for trail or may not be prepared • Hard packed surface with no obstacles and minimal stairs • Estimated time to complete the trail is no longer than two hours • Little or no elevation gain or loss
	Symbol	<ul style="list-style-type: none"> • Green Circle 
Rating Details	Distance (return)	<ul style="list-style-type: none"> • 0-5km
	Trail Profile	<ul style="list-style-type: none"> • Flat to gently rolling • Typical elevation gain of 0-100m
	Trail Surface (material surface and average width)	<ul style="list-style-type: none"> • Paved or surfaced • Hard packed • Typical average width of 1.0-3.0m
	Signage (general signage and information provided)	<ul style="list-style-type: none"> • Trailhead information • Interpretive panels • Route markers • Trail orientation maps • Maximum information provided
	Obstacles or Stairs	<ul style="list-style-type: none"> • Few or no obstacles • Minimal use of stairs
	Facilities or Amenities	<ul style="list-style-type: none"> • Parking lot • Washroom • Bridges • Benches
	Recommended Experience	<ul style="list-style-type: none"> • Little or no experience required

Moderate Trail Rating

Trail Rating Definition	Definition	<ul style="list-style-type: none"> • Suitable for most users who have some basic trail experience and are generally prepared • Mostly stable surface with infrequent obstacles, stairs may be present • Estimated time to complete the trail is no longer than five hours • May experience moderate elevation gain with some short steep sections
	Symbol	<ul style="list-style-type: none"> • Blue Square 
Rating Details	Distance (return)	<ul style="list-style-type: none"> • 0-15km
	Trail Profile	<ul style="list-style-type: none"> • Gently rolling with short steep sections • Typical elevation gain of 100-500m
	Trail Surface (material surface and average width)	<ul style="list-style-type: none"> • Surfaced or natural surface • Firm and stable • Typical average width of 0.5-1.5m
	Signage (general signage and information provided)	<ul style="list-style-type: none"> • Basic trailhead information • Route markers • Trail orientation maps • Moderate information provided
	Obstacles or Stairs	<ul style="list-style-type: none"> • Infrequent obstacles • Stairs may be present
	Facilities or Amenities	<ul style="list-style-type: none"> • Parking lot • Outhouse/pit toilets • Bridges • Benches
	Recommended Experience	<ul style="list-style-type: none"> • Some experience recommended

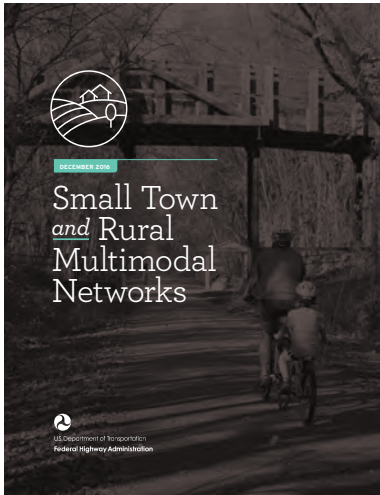
Difficult Trail Rating

Trail Rating Definition	Definition	<ul style="list-style-type: none"> • Suitable for users who have trail experience and are prepared • Variety of surface types including non-established surface • Estimated time to complete the trail may exceed five hours • May experience major elevation gain with long steep sections
	Symbol	<ul style="list-style-type: none"> • Black Diamond 
Rating Details	Distance (return)	<ul style="list-style-type: none"> • 0-15+km
	Trail Profile	<ul style="list-style-type: none"> • Rolling with many steep sections that may continue for long periods • Typical elevation gain of 500+m
	Trail Surface (material surface and average width)	<ul style="list-style-type: none"> • Natural surface • May be loose or may not exist • Typical average width of 0.25-1.0m
	Signage (general signage and information provided)	<ul style="list-style-type: none"> • Basic trailhead information • Minimal route markers • Minimal information provided
	Obstacles or Stairs	<ul style="list-style-type: none"> • Obstacles common • Stairs common
	Facilities or Amenities	<ul style="list-style-type: none"> • Bridges or other water crossings
	Recommended Experience	<ul style="list-style-type: none"> • Experience recommended

Roads as Route Connectors

During the trail inventory and analysis phase it became clear that the road network will play an important part in creating a connected trail and walking network within the town. A connected network is not developed by a single trail, sidewalk, or bike lane but is comprised of many facilities that support walking and bicycling throughout the community. Developing networks in rural settings can be challenging due to a number of factors:

- Auto Oriented Roadways - With lower densities and greater distances, many small towns have developed in a more auto-oriented fashion than urban areas. A strong focus on automobile mobility results in a lack of facilities for people walking and bicycling, making travel by these modes difficult and less safe.
- Constrained Terrain - Rural highways often have physical constraints that make the provision of cost-effective facilities for bicycling and walking difficult.
- Safety - Pedestrian crossings are often not defined and may be difficult to warrant based on low existing use; however, not providing pedestrian crossings makes streets act as barriers that divide communities.
- Highway as a Main Street - Local highways often pass through the heart of small towns and may prioritize through traffic over local access. Some may be wide and over designed, and some may be constrained and hard to change.
- Climate and Maintenance - Many small towns do not have adequate resources to pay for special equipment to clear certain types of active transportation facilities.



Solutions to these challenges are addressed in the Small Town and Rural Multimodal Networks guide created by the United States Federal Highway Administration. A summary of the tactics that the Town can use for their road networks is highlighted in this section.

The proposed trail network includes a number of road upgrades to improve the pedestrian experience, since these road corridors are required to make certain connections. While specific upgrades for each road are not identified in this Plan, an overview of different solutions that the Town can consider is provided. The Town can refer to the Guide for more details of the outlined solutions.

If the Town wishes to develop some of these opportunities within the community, they can aim to develop synergies among Capital Works projects. Pairing these types of projects with ongoing infrastructure projects such as sewer and street upgrades makes them more achievable. It is typically more economical to implement the infrastructure this way and minimizes construction disruptions for residents.

Roads that are important route connectors:

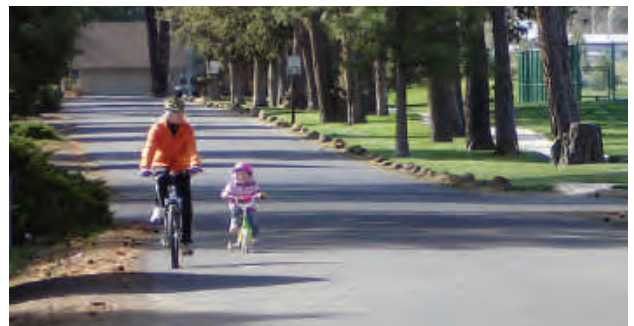
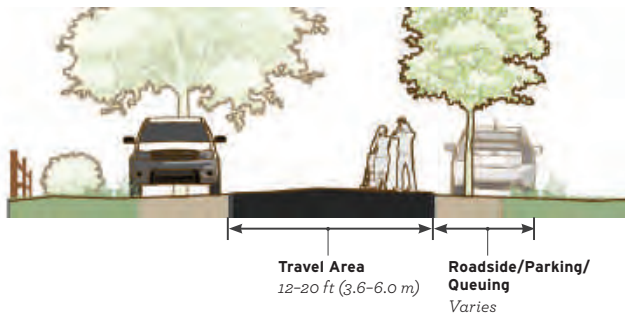
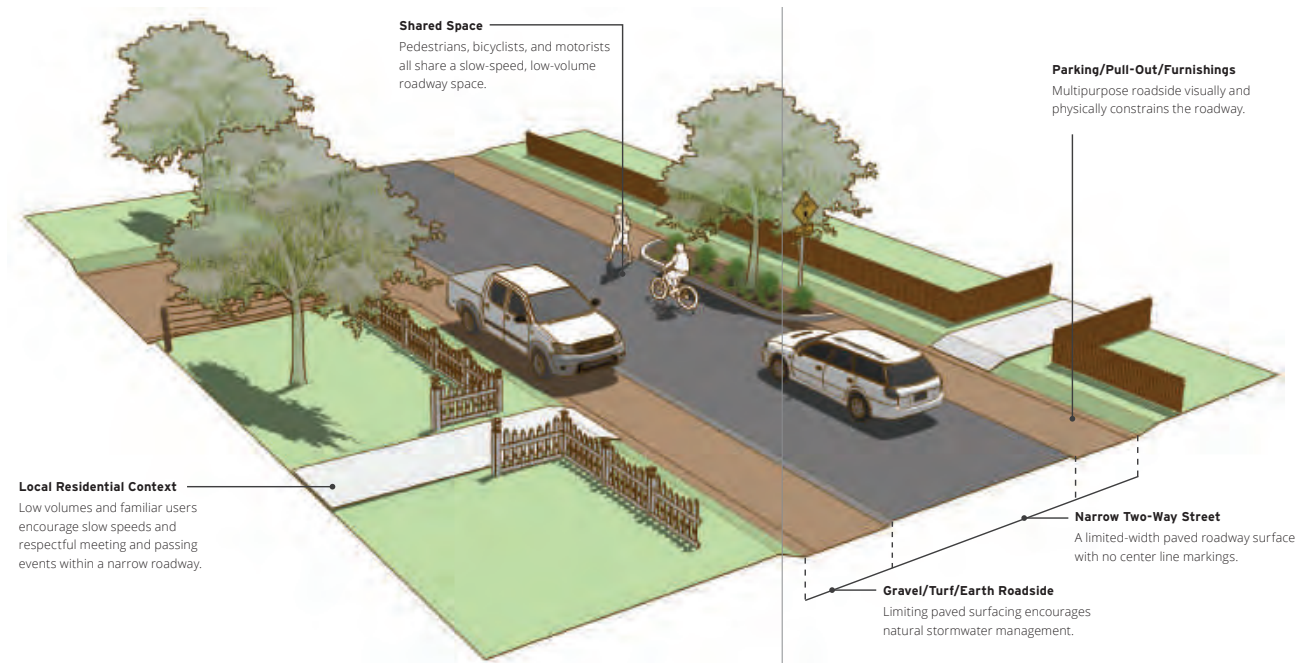
- Dogberry Hill Road
- Tuckers Hill Road
- Thorburn Road
- St. Thomas Line
- Old Broad Cove Road
- Round Pond Road
- Beachy Cove Road
- Portugal Cove Road
- Anglican Cemetery Road
- Indian Meal Line
- Tolt Road
- Bennetts Road
- Nearys Pond Road

See the maps starting on page 60 for a visual indication of the portions of these roads that will play an important part in connecting trail routes.

Mixed Traffic Facilities

(a) Yield Roadway

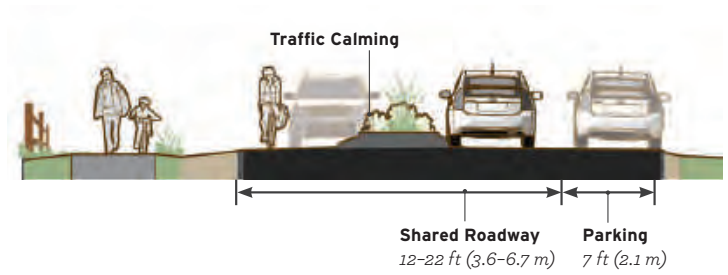
A yield roadway is designed to serve pedestrians, bicyclists, and motor vehicle traffic in the same slow-speed travel area. Yield roadways serve bidirectional motor vehicle traffic without lane markings in the roadway travel area. They are meant to be used in built-up areas, particularly near residential land uses where most traffic is familiar with prevailing road conditions. They are meant for local residential roadways and not through motor vehicle traffic, where there is very low traffic volumes and speeds.



(Small Town and Rural Multimodal Networks Guide, United States Federal Highway Administration)

(b) Bicycle Boulevard

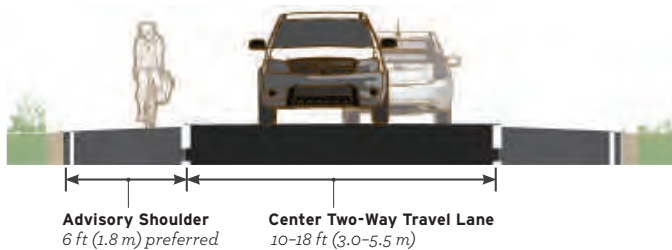
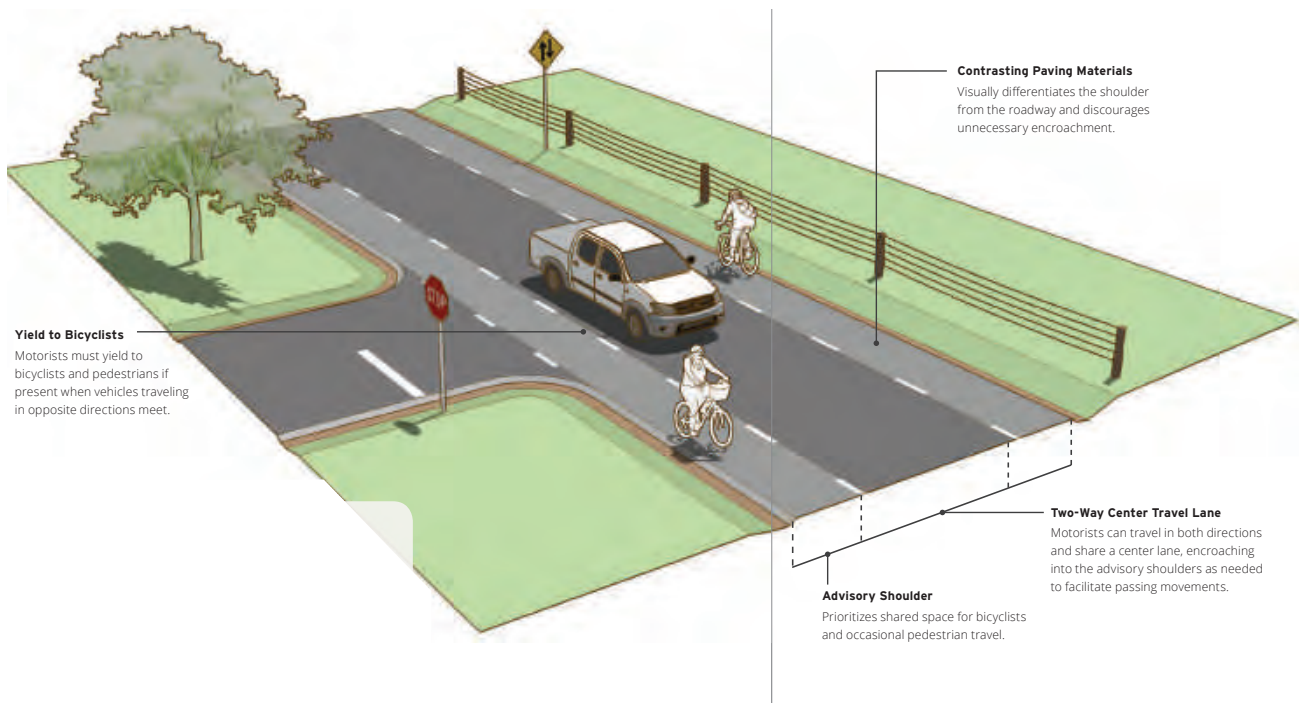
A bicycle boulevard is a low-stress shared roadway bicycle facility, designed to offer priority for bicyclists operating within a roadway shared with motor vehicle traffic. They are meant to be used in built-up areas to connect biking and walking routes in small town street networks. They are meant for local residential roadways and not through motor vehicle traffic, where there is very low traffic volumes and speeds. Speed and volume management may be necessary to create desired operating conditions.



(Small Town and Rural Multimodal Networks Guide, United States Federal Highway Administration)

(c) Advisory Shoulder

Advisory shoulders create usable shoulders for bicyclists on a roadway that is otherwise too narrow to accommodate one. The shoulder is delineated by pavement marking and optional pavement colour. Motorists may only enter the shoulder when no bicyclists are present and must overtake these users with caution due to potential oncoming traffic. They are meant to be used outside, between, and within built-up areas with bicycle and pedestrian demand and limited available paved roadway surfaces. They are only meant for constrained connections between built-up areas and are most appropriate on streets with low volumes and moderate speeds.

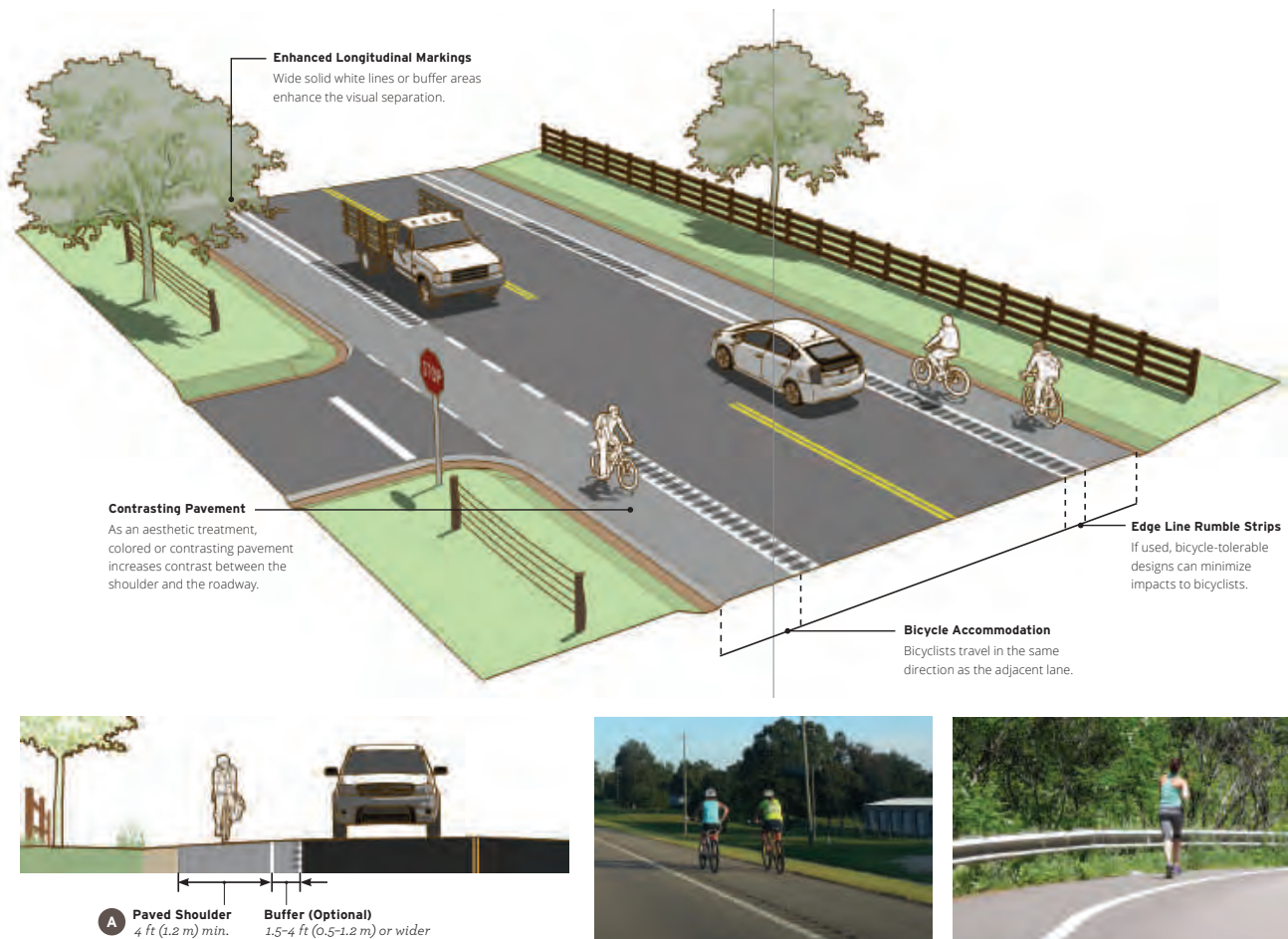


(Small Town and Rural Multimodal Networks Guide, United States Federal Highway Administration)

Visually Separated Facilities

(a) Paved Shoulder

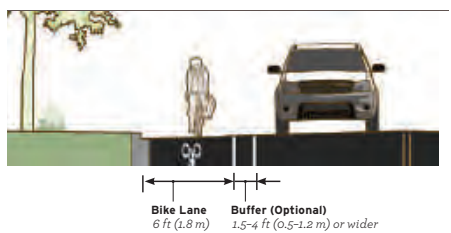
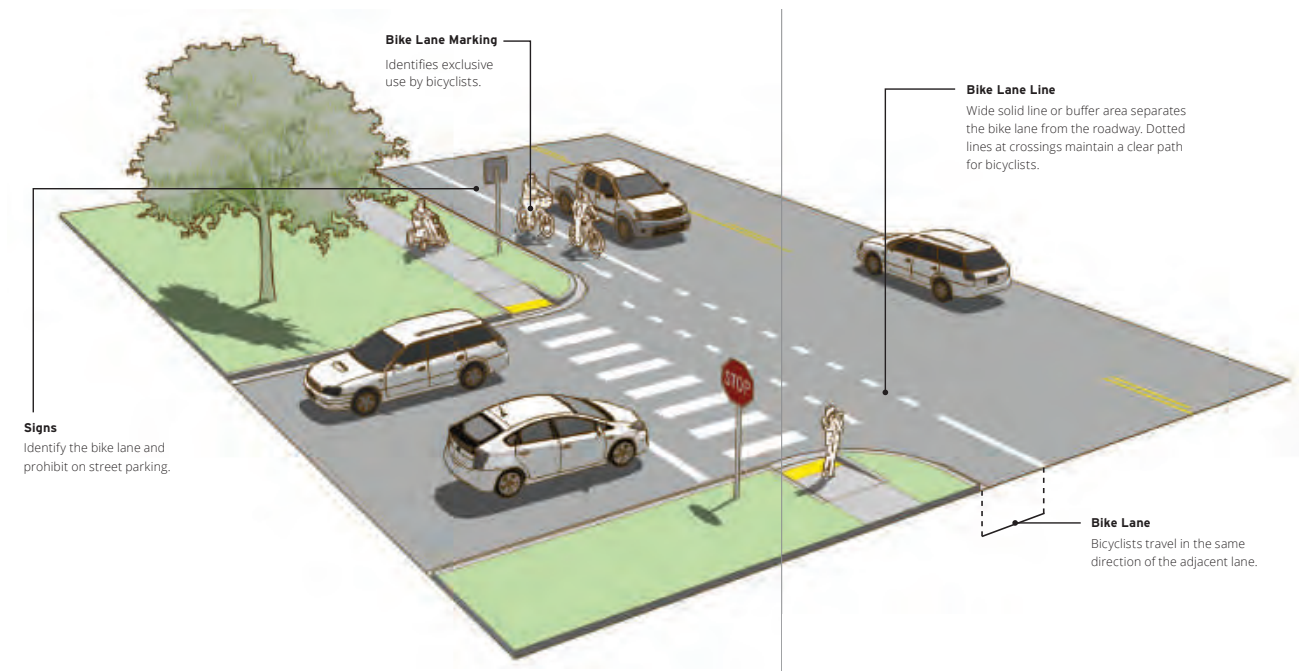
Paved shoulders on the edge of the roadways can be enhanced to serve as a functional space for bicyclists and pedestrians to travel in the absence of other facilities with more separation. They are meant to be used outside and within built-up areas, near school zones and where there is expected pedestrian and bicycle activity. Walkable shoulders should be provided along both sides of rural roads and highways routinely used by pedestrians. They are meant to serve long-distance and regional travel and are appropriate for roads with moderate to high vehicle volumes and speeds. They may function on roads with heavy traffic, but will fail to provide a low-stress experience in those instances. This infrastructure is similar to the Green Mile project that the Town put off in the past.



(Small Town and Rural Multimodal Networks Guide, United States Federal Highway Administration)

(b) Bike Lane

Bike lanes designate an exclusive space for bicyclists through the use of pavement markings and optional signs. A bike lane is located directly adjacent to motor vehicle travel lanes and follows the same direction as motor vehicle traffic. They are meant to be used inside or between built-up areas where increased pedestrian and bicycle activity is present or expected. They are meant to serve moderate distance trips connecting local bikeway routes to regional corridors. They are appropriate on streets with moderate volumes and moderate speeds. They may function on roads with heavy traffic, but will fail to provide a low-stress experience in those instances.



(Small Town and Rural Multimodal Networks Guide, United States Federal Highway Administration)

Physically Separated Facilities

(a) Sidewalk

Sidewalks provide dedicated space intended for use by pedestrians that is safe, comfortable, and accessible to all. Sidewalks are physically separated from the roadway by a curb or unpaved buffer space. They are appropriate inside of built-up areas and may serve short distance travel between built-up areas. They are appropriate on all types of roadways where pedestrian activity is likely, and they are recommended on all but the most low-speed and low-volume roadways.



(Small Town and Rural Multimodal Networks Guide, United States Federal Highway Administration)

Trail Safety

Intersections between trails and roads represent one of the biggest potential challenges for any trail network. It is here that vehicular and pedestrian conflict is at its greatest, and when trail users are most likely to feel unsafe or uncomfortable due to the risk of being struck by a vehicle. If not treated carefully, these intersections also have the potential to seriously disrupt or impede vehicle traffic on the roads as well as pedestrian traffic on the trails. It becomes very important that attention is paid in these instances to ensure pedestrian safety and driver awareness are both considered.

Crosswalks are an essential trail planning tool in these cases. As a rule of thumb, trail users should be able to safely traverse all road crossings. Crosswalks should be provided and clearly marked with signage, pavement markings, and push buttons (where appropriate) so that it is intuitive for the pedestrian and visible for the driver.



Example of a painted crosswalk with a flashing light and signage (Traffic Safety Supply Company)

Trailhead Development

Simply put, trailheads refer to trail access and entry points. This is where the trail user enters the trail network and is where they generate their first impression of the trail system. As such, it represents an opportunity to create a gateway or sense of arrival. Trailheads set the tone for the rest of the trail system, so it is important that they receive appropriate attention and careful design consideration. Trailheads can include rest areas, parking areas, small plaza spaces, mapping, signage, landscaping, bike racks, public art, lighting, or any other number of design elements. The addition of a land acknowledgment of traditional territory on the sign can also be considered.



Trailhead signage, seating, and shelter (Ekistics Design Studio)



Trailhead signage (The Great Trail)



Trailhead signage (Lake Tahoe Water Trail)

Accessibility & Inclusion

It is important that all trail users have equal opportunity to enjoy the trail, at their own pace and skill level, and that they feel safe and comfortable when doing so. *Ontario's Accessibility Standard* outlines best practices to ensure that recreational trails are accessible. The Town should consider following this standard wherever possible:

- meet minimum clear width (1 m) and height (2.1 m) specifications;
- have a firm and stable surface (but does not necessarily have to be paved);
- meet restrictions on the size of surface openings (must not allow passage of an object that has a diameter of more than 20 mm), and orient elongated openings perpendicular to the direction of travel;
- meet specifications on edge protection (50 mm) when located beside water or a drop-off, except where a protective barrier already exists;
- provide minimum clear width at its opening (0.85 m to 1 m), regardless of entrance design (e.g., gate, bollard, etc.);
- meet requirements for tonal contrast and font type to be used for the signage, and
- ensure online platforms (such as digital trail maps) are as accessible as possible.

While no such standard currently exists in Newfoundland and Labrador, the Ontario guidelines can be used as a best practice. Before developing a new trail or redeveloping an existing trail for pedestrian use, the Town should consider consulting with Inclusion NL or other accessibility advocates including local senior's and inclusion groups.



Boardwalk with side barriers to improve accessibility (Parks Canada)



Level, well-graded granular trails can meet accessibility guidelines, trails do not necessarily have to be paved

Wayfinding & Signage

A wayfinding system is much more than simply a series of strategically placed signs along a trail. It should be carefully designed to be visually appealing, legible, consistent, and most importantly, to facilitate movement in a clear and intuitive manner. A successful wayfinding system provides a positive first impression and allows visitors to orient themselves, draw a mental map, and confidently and easily navigate to where they want to go.

From a design perspective, the Town has recently been involved in the *Northeast Avalon Regional Wayfinding Program*. This program will address signage and wayfinding throughout the community and broader region. The Town has recently also installed new community welcome signs. Should a trails signage program become a priority for the Town, it should consider professionally designed trail signage to complement these larger initiatives.

There are typically several key types of signs on a trail network that work together to help users orient and guide themselves.

(a) Trailhead Signage

Trailhead signage is located at trail access points and provides trail users with all of the information that they need to know before starting their hike. The trailhead signage should include:

- length of trail and a time estimate to hike it;
- trail rating (easy, moderate, or difficult);
- notes on any rules, regulations, risks or hazards; and
- a trail map showing location of noteworthy features or stopping points.

(b) Route Markers

Route markers are used to remind trail users which trails they are on and instill confidence that they are heading in the right direction. It is important to place markers at decision points, to inform hikers of the trail route or direct them towards other intersecting trails. On trails that are rated Difficult, route markers might be simple icons mounted to trees (similar to the East Coast Trail). On Easy trails though, they can be more descriptive, potentially marking a km/distance or providing a time estimate to the next destination.

(c) Trail Orientation Maps

Trail orientation maps give users a visual idea of where they are on the broader trail system and how close they are to other trails or destinations. These maps are useful at the trailhead, but can also be helpful at destinations or rest stops so trail users can check their progress before continuing on the trail.

(d) Regulatory Signage

Regulatory signage is used to communicate important rules, regulations, or risks to trails users.

(e) Interpretive Signage

Interpretive signage is used to tell stories about the surrounding area. They can focus on everything from local wildlife to history and they come in many different shapes and sizes. Interpretive planning is a recognized profession and these professionals can assist in developing themes, content, and delivery methods for the interpretive signage. The Town has recently embarked on a storyboard design project. Interpretive signage on trails should be designed to complement this initiative.

(f) Accessibility Considerations

Providing clear signage can help users decide how best to enjoy the trail experience according to their needs and abilities. The trailhead should have signage containing information about the physical characteristics of the trail, including:

- length of trail;
- type of surface of which the trail is constructed;
- average and minimum trail width;
- average and maximum running slope and cross slope; and
- location of amenities, where provided.



Interpretive signage can be installed in many different sizes and designs, depending on the content and context (Drumminhands Design)

Freestanding Route Marker (Fitzpatrick Woolmer)



East Coast Trail route marker

Trail orientation map at Voisey's Brook Park

Road signs can indicate where trail access exists (Google Maps)

Trail Features & Amenities

Successful trails must provide amenities that accommodate comfort and convenience of a variety of trail users. Typical trail amenities to consider include benches, waste receptacles, bike racks, and more. These amenities should be thoughtful, complementary of one and other, and prescribed. These items may seem somewhat inconsequential, however they serve important functions and, when considered holistically across the entire trail, create a positive experience for trail users. Further, objects that do not visually relate to one another can seem haphazard or disorganized, diminishing the overall character and experience of the trail.

(a) Site Furniture

Site furniture includes items such as benches, seating, waste bins, bollards, and planters that stand in the landscape and help create comfortable, functional, and enjoyable spaces. When choosing site furniture, styles should be chosen that complement one another to help create continuity across the trail network. Simple wooden designs may be used for cost savings as long as they are maintained properly.

Benches are necessary on trails to provide spaces for users to sit and rest. Different trails should provide more benches than others, depending on the trail rating. For example, Easy trails should provide benches frequently, with a minimum of 1 bench every 500m. Waste receptacles should be provided at the same locations. On a Moderate trail, benches will be provided less frequently, with potentially only a few located on the entire trail, at key lookouts or rest areas.

It is also a good idea to include pet waste bag dispensers throughout the trail network, especially along Easy trails. This will help cut down on pet waste along the trails which is an issue that occurs across many different trail networks.

(b) Parking

Parking areas should be strategically located throughout the trail network so that users have many opportunities to access the trails. Most trailheads should have a small parking area if the space is available. Larger parking lots may be provided at popular trails and destinations where more space may be available.

Granular parking areas are acceptable and will likely help reduce construction costs. They are also generally more appealing in rural settings. If granular parking areas are used, some means of delineating parking spaces can be explored such as precast curbs or pavers/markers inset in the granular.

(c) Other Infrastructure

Depending on the type of trail, different infrastructure may be installed to address obstacles on the trail. On an Easy trail, wide bridges, railings, and ramps may be used to address grade changes or water crossings. On a Difficult trail, less robust infrastructure may be used such as log bridges or wooden steps (similar to what’s seen on sections of the East Coast Trail).



Existing waste bin in Voisey’s Brook Park



Existing bench in Voisey’s Brook Park



Existing picnic table at Nearys Pond



Precast concrete curbs used to delineate parking spaces in a granular parking area (Pinterest)



East Coast Trail stairs at Beachy Cove



A robust bridge may be required for well-used trails (Interior Trails)

Maintenance

To ensure the sustained success of the trail network, it is critical that trails are managed and maintained in a safe, accessible, and visually appealing condition. Currently, the Town does not have a scheduled maintenance program for its trails and repairs are generally completed on an as-needed basis. The Town should consider implementing an ongoing trail maintenance program.

Ongoing maintenance is recommended as a preventative measure. It ensures the trail system is kept in its best condition and that small issues are identified and corrected prior to becoming bigger problems which may result in substantial repairs or closing sections of the trail network. A list of general tasks has been provided as a starting point however this may be expanded upon by Town staff. Staff may also decide to focus maintenance efforts along high priority sections of trail that are more frequently used.



Knowledgeable trail construction crews should be used for critical construction and maintenance activities (Appalachian Mountain Club, Pacific Northwest Association)

Community cleanup days and maintenance outings are organized on the East Coast Trail and a similar format could be adopted in PCSP (CBC)

Item	Maintenance Task	Frequency		
		Type 1 Trails	Type 2 Trails	Type 3 Trails
Drainage	Inspect known low points, wet spots, and drainage infrastructure (such as culverts)	Pre-season, then monthly	Pre-season	Pre-season
	Remove debris build up and blockages in culverts	Pre-season	Pre-season	Pre-season
	Repair major damage such as ponding or washouts	As needed, inspect after rain events	As needed, inspect after rain events	As needed, inspect after major rain events
Vegetation	Remove branches that obstruct trail clearance	Pre-season, then as needed	Pre-season, then as needed	Pre-season
	Remove deadwood that poses a hazard	Pre-season, then as needed	Pre-season, then as needed	Pre-season
Turf Management	Mow grass along trail edges to a height of 50 to 75mm (where applicable, such as at trailheads, or along easy trails)	As needed	Likely not applicable	Likely not applicable
Trail Surface	Inspect trail surface for failures such as cracking, settlement, root intrusions, and other hazards and repair as needed	Pre-season, then as needed	Pre-season, then as needed	Pre-season
	Repair broken wooden boards or steps	Pre-season, then as needed	Pre-season, then as needed	Pre-season
Signage	Ensure all signage is visible and free of obstructions	Pre-season, then as needed	Pre-season, then as needed	Pre-season, then as needed
	Replace deteriorated or damaged signs	Pre-season, then as needed	Pre-season, then as needed	Pre-season

Item	Maintenance Task	Frequency		
		Type 1 Trails	Type 2 Trails	Type 3 Trails
Trash	Perform a trail-wide cleanup to collect accumulated winter debris	Pre-season	Pre-season	Pre-season
	Empty waste receptacles	Bi-weekly	Bi-weekly	Bi-weekly (at trailheads)
Lighting	Perform visual inspection of all trail lighting and replace failed lamps	Pre-season, if applicable	Likely not applicable	Likely not applicable
Amenities	Inspect benches for broken, damaged, or deteriorated boards and replace as needed	Pre-season, then monthly	Pre-season, then as needed	Pre-season
	Paint benches, waste receptacles, and other trail amenities, if applicable	Pre-season	Pre-season	Pre-season
	Restock dog waste bag dispensers	Monthly	Monthly	Likely not applicable
	Inspect handrails, stairs and ramps and repair as needed	Pre-season, then as needed	Pre-season	Pre-season
	Replace amenities that have been stolen or severely damaged	As needed	As needed	As needed

Trail Network Development

Upgrades to Existing Trails

The Town has a number of established and developed trails including Voisey's Brook Park and Rainbow Gully Park. These trails form the foundation of a successful trail network. During the community engagement phase, residents suggested further improvements as summarized below.

Voisey's Brook Park

- More Trails (18 responses)
- Biking (15 responses)
- Better Wayfinding Signage (11 responses)
- Nordic Ski Trails (2 responses)
- No Changes Required (10 responses)
- Lighting (9 responses)
- Better Maintenance (6 responses)
- Snow Clearing (4 responses)
- Dog Clean-up Rules (3 responses)
- ATV Friendly (2 responses)
- Parking at Jera Street (1 response)
- More Garbage Cans (1 response)
- Public Art (1 response)
- More Rest Spots (1 responses)
- Better Accessibility (1 response)
- Skating Trail (1 response)
- Food Forest (1 response)

Rainbow Gully Park

- More Trails (27 responses)
- Biking (10 responses)
- Connect to Dans Road ATV Trails (9 responses)
- Lighting (4 responses)
- No Changes Required (4 responses)
- Dog Park (1 response)
- Nordic Ski Trails (1 response)
- Public Art (1 response)
- Better Maintenance (1 response)
- Snow Clearing (1 response)
- Better Drainage (1 response)
- Boardwalk Near School (1 response)
- Tennis Court (1 response)
- More Parking (1 response)

Future Trail Development

Throughout the inventory and analysis phase, the design team visited a number of trails that had been highlighted by the public as potential routes. These potential routes were assessed based on a number of factors and those that were found to have potential have been included in the proposed trail network.

Disclaimers

- The routes of these proposed trails are currently conceptual in nature. The full route of the trail was visited where possible, however time and physical constraints did not allow for scouting out the entirety of each trail as part of this project. As each trail is developed, the exact route will have to be determined as part of the detailed design phase. More details can be found in the Implementation section of this report.
- The proposed trail network has been checked against the NL Public Land Inquiry database and the Town's mapping data. The proposed routes avoid the use of any private land and stick mostly to Crown Land, Town-owned land, and river and pond protection buffers (which allow trail development within the buffer). That being said, during the detailed design phase, land ownership will have to be confirmed for each trail. The trail routes were developed with the assumption that the Town does not currently have the desire to acquire additional private land for the trail network. If the Town does have that desire, that could positively change the direction of the trail network development, as many connections throughout the community are limited due to the vast amount of private property.

While developing the proposed trail network, the Guiding Principles informed decision-making.

- Improve connectivity and access to local destinations and surrounding communities.
- Protect the natural environment and rural sense of character within the community.
- Create a trail network that provides year-round recreation opportunities for different user groups.
- Prioritize sustainability.

User Groups

On the following charts outlining the different proposed trails, “targeted user groups” have been identified. These user groups were determined based on community feedback during the engagement phase and were approved by Council. The priority user groups include walkers, hikers, bikers, cross-country skiers, and snowshoers. ATVs and snowmobiles are considered and included in the plan, but should not be prioritized as highly as the other user groups.

For **hikers and walkers**, trails have been prioritized that help fulfill Guiding Principle #1 (improve connectivity and access to local destinations and surrounding communities). Community feedback made it clear that new destination trails (like the East Coast Trail) should not be the priority. The group being called “walkers” in this report also includes trail users traveling with strollers and wheelchairs. Trails marked as suitable for “walkers” are meant to be accessible for a wide number of pedestrians.

For **snowshoers and cross-country skiers**, thought has been given to which trails have terrain that would be suitable for those uses in the winter.

For **bikers**, the focus has been mostly on mountain biking trails, due to the high number of residents that expressed desire for those types of trails. However, in most cases, trails that have been marked as suitable for “bikers” would be suitable for both mountain bikes and other recreational bikes. Two areas have been identified as having potential specifically for mountain biking due to their terrain.