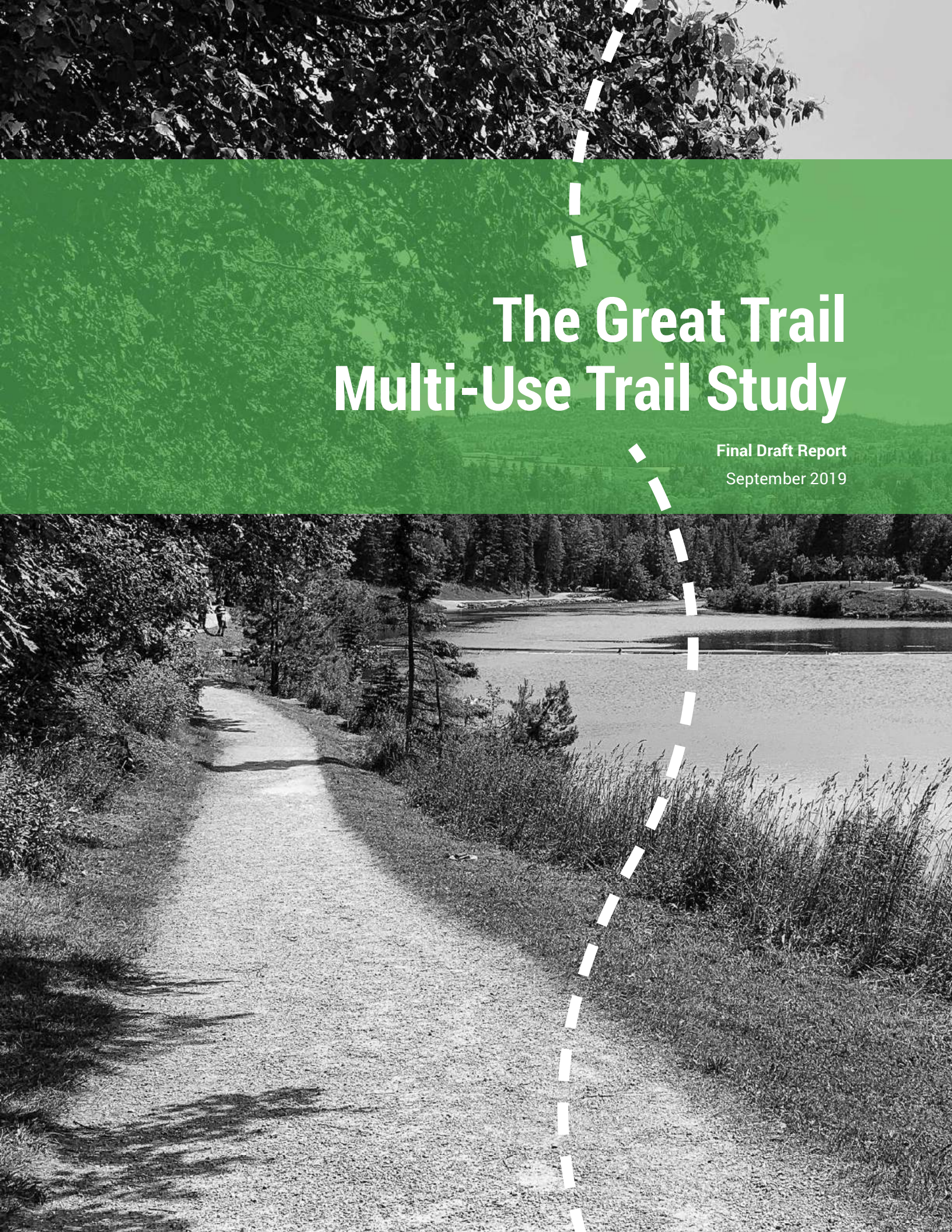

The Great Trail Multi-Use Trail Study

Final Draft Report

September 2019

This project was spearheaded by the City of Corner Brook with generous financial support from its project partner, The Great Trail. The project team wishes to thanks its funding partners as well as the following individuals who contributed to this study.

Special thanks to the residents and enthusiastic trail lovers of Corner Brook who attended the public drop-in sessions to share their ideas for Corner Brook's Great Trail.

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Councillor Vaughn Granter
Councillor Bernd Staeben
Councillor Tony Buckle
Councillor Josh Carey
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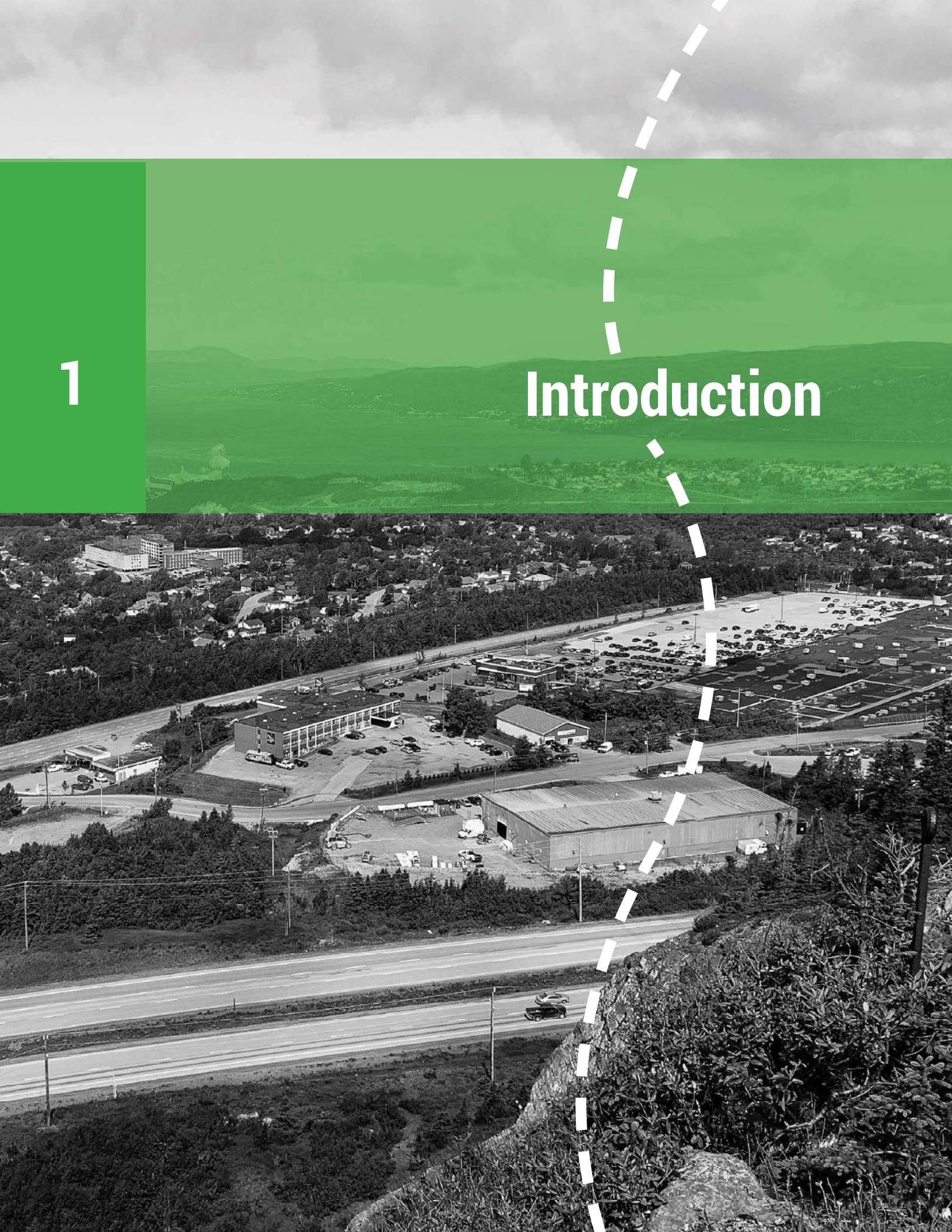
Contents

1 Introduction



Trails are a vital part of any community. These are the public spaces where residents and visitors gather, socialize and recreate. When designed and implemented thoughtfully, they become an extension of the community itself, highlighting community values such as personal health and well-being, and creating a distinct sense of place and pride. Trails encourage and enable a healthy and active lifestyle by providing opportunities to increase physical activity and an enjoyable way to get around. They encourage alternative methods of transportation, such as walking, jogging or cycling, which can lead to a reduction in significant health issues including obesity, stress, and many other ailments associated with a sedentary lifestyle. And they can have a positive effect on the environment as well. When people are walking more, they are driving less, which can lead to decreased vehicle emissions and less wear and tear on transportation infrastructure like roads. As part of a larger green space network, trails can serve as the "green lungs" of a community through providing valuable ecosystem services such as carbon capture and rainwater infiltration and increasing stewardship and environmental awareness.

Perhaps no other trail exemplifies these characteristics better than The Great Trail; an incredibly ambitious trail project, unprecedented in Canada, that aims to connect the country from coast to coast to coast through 24,000-kilometres of multiuse trail. Representing the largest recreational trail in the world, The Great Trail aims to deliver a safe, enjoyable, high-quality trail that allows users to experience landscapes, history, and culture that are as vast and diverse as the country itself. From urban landscapes to pristine natural environments, and everything in between, The Great Trail represents a truly one-of-a-kind recreational and tourism destination experience.

The largest municipality on the province's west coast, Corner Brook represents a regional service centre and hub for western Newfoundland. The City offers many essential services and has multiple world-class outdoor experiences on its doorstep, such as Marble Mountain, Gros Morne National Park, the scenic Humber Valley, the picturesque Long Range Mountains, and the stunning Bay of Islands. Recreational opportunities abound, making it no wonder that Herald Magazine named Corner Brook the best place to live in Atlantic Canada for active living in 2014.

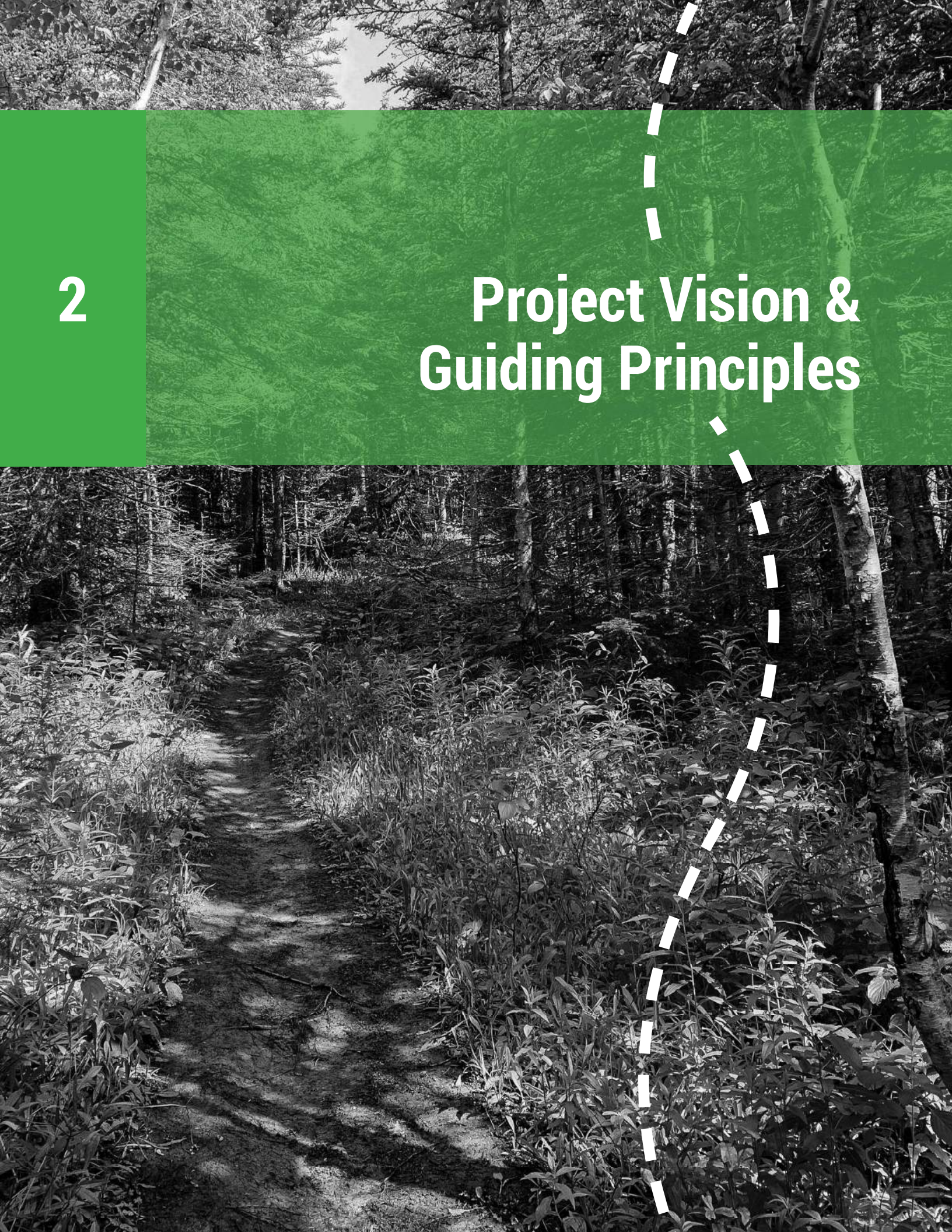
With so much going for it as an outdoor adventure destination, it makes perfect sense that the City would want its section of The Great Trail to meet the same exemplary standards of its other recreational and outdoor experiences. However, the City has recognized that this is not currently

the case. As seen on the following pages, the current section of Great Trail in Corner Brook feels confusing, dangerous in sections, and somewhat haphazardly planned, with sections sporadically following local streets, highways, shoulders, and existing trails. There is very little signage and no indication that the user is on The Great Trail.

Overall, it is clear that the current Great Trail route in Corner Brook does not provide the world-class trail experience that has been mandated.

The City has initiated this trail study to investigate opportunities to improve the Great Trail route through Corner Brook. Several routes will be identified, analyzed, and explored with the objective of aligning with The Great Trail's greenway vision, as described below.

> ***"To provide a multiuse trail route that is safe, enjoyable, inclusive, and high-quality, that encourages recreation and active transportation while protecting the natural environment"***



2 Project Vision & Guiding Principles

The City of Corner Brook has committed to exploring several trail route options with the ultimate goal of selecting one that aligns with The Great Trail's mandate. As such, the overall goals and objectives of this project mirror those of The Great Trail's *Greenways: Vision and Core Principles* document.

Vision

1. Protect and increase the number of designated greenway sections on The Great Trail, and offer unique opportunities to get outdoors, explore major cities and small towns, experience our ever-changing landscapes, and discover Canada's rich history and diverse cultures and communities

2. Strive to ensure that The Great Trail offers one of the best fitness and active living destinations for Canadians and international visitors, allowing them the opportunity to participate in healthy and low cost recreation activities

3. Maintain connection of the hundreds of local Trail sections that form the world's longest network of recreational multi-use trails, in order to offer a variety of Trail experiences in all seasons

Core Principles

The Great Trail is committed to:

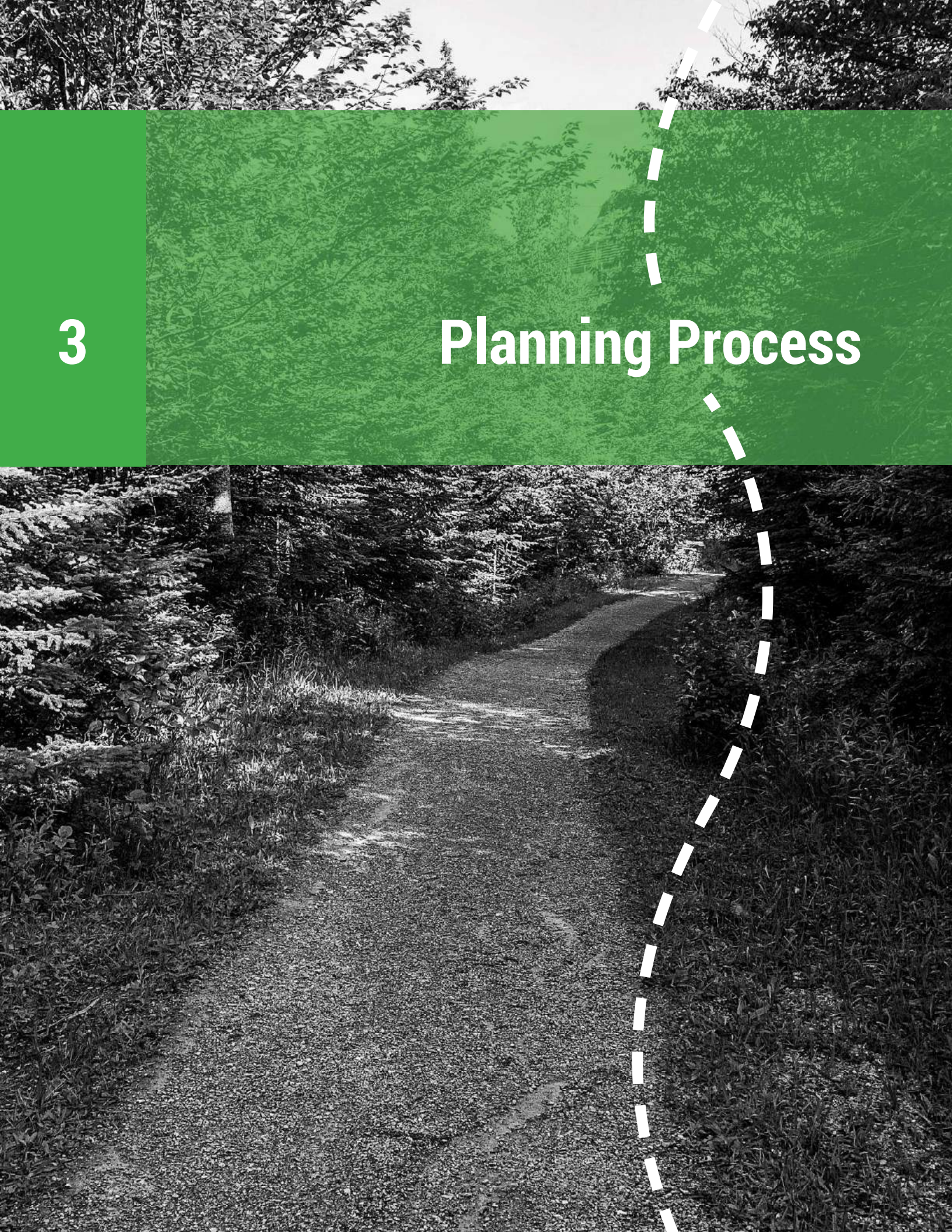
1. Protecting and increasing the number of designated greenway sections with the support and consent of local Trail communities

2. Planning and developing, where feasible, the conversion of road sections and mixed-use trail into greenway

3. Making routing decisions based on what is best for non-motorized users, while maintaining connection

4. Providing a safe and enjoyable experience on the highest quality Trail possible

5. Promoting an active and healthy lifestyle and encouraging active transportation



3 Planning Process

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Understanding the Context

The first project phase was intended to provide a current snapshot of the existing condition. The entirety of the existing Great Trail route was reviewed to perform an inventory and analysis. The objective of this assessment was to gain a sound understanding of the trail and its current condition, as well as to identify places of significance, character-defining elements, and opportunities and challenges for future development.

Existing municipal studies and policy documents were also reviewed to extract pertinent information that could impact future trail development and to ensure all recommendations of this plan remained aligned with previous municipal goals and objectives.

Stakeholder Engagement

Engagement is critical to create a shared understanding of the project goals as well as to inform decision-making during the design process. Several methods were used to collect stakeholder input.

Public Drop-In Sessions Informal drop-in sessions were scheduled at convenient times such as during lunch hour or the after-work commute to introduce the project to the community and receive input from the general public in a casual, relaxed setting. Several interactive displays were used to gain feedback.

Key Stakeholder Meetings Several key stakeholder groups were identified as having a vested interest in the project. Those groups were interviewed in a face-to-face meeting, small focus group, or via phone conversation to collect their input.

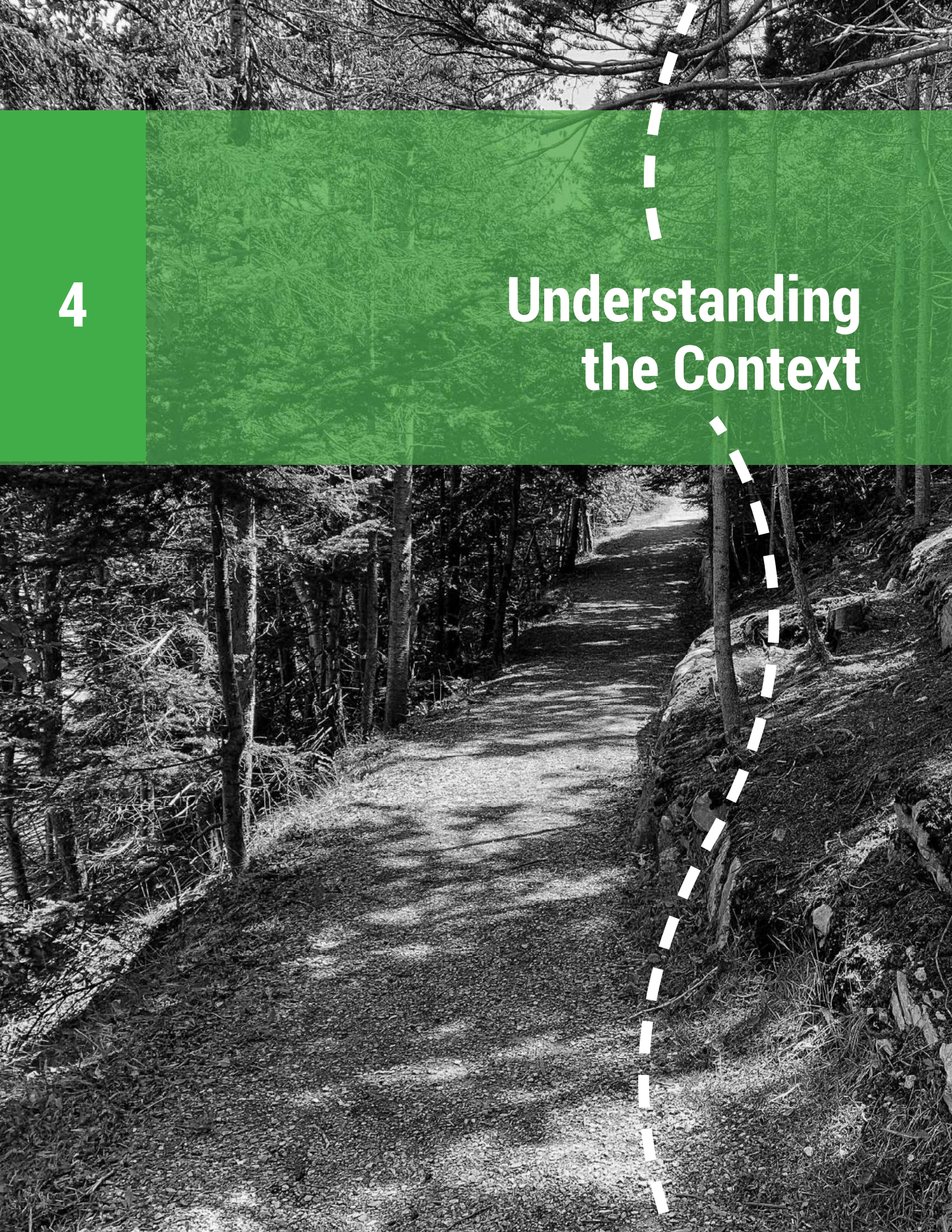
Exploring the Options

Using information gathered in the previous project phases, the next step entailed exploring scenarios for routing the Great Trail. Five initial routes were selected for consideration that represented a diversity of trail experiences, from urban routes passing through the city centre to backcountry routes that circumvented Corner Brook. Preference was given to routes that incorporated existing rights-of-way and other trail infrastructure to create efficiencies and minimize development costs. Ultimately, five options were refined to three plausible options. Once routes were identified, a SWOC analysis was used to compare each route's strengths, weaknesses, opportunities, and challenges. Items considered included trail use, user experience, sustainability, probable costs, land ownership, infrastructure, safety, accessibility, social equity, aesthetics, maintenance,

Analysis of Preferred Option

Ultimately, a single preferred route was selected based on stakeholder feedback and the preliminary SWOC analyses. The preferred route utilized existing trail and road rights-of-way and was determined to be the most accessible, appeal to the widest possible number of users, and function as an active transportation corridor between Corner Brook and Steady Brook. Detailed analysis of the preferred route focused on three characteristics:

1. Physical Trail Characteristics
2. Long-Term Sustainability
3. Probable Costs



4 Understanding the Context

The Existing Great Trail

The existing Great Trail route is indicated on the following plan by the dashed green line. Starting east as shown, it follows the unpaved shoulder of the Trans Canada Highway from Steady Brook until exit 6 to the Lewin Parkway. This section is very scenic and connects trail users to popular amenities like the Man in the Mountain and Marble Mountain Resort. Once users have taken exit 6 and are on the Lewin Parkway, the route continues along the shoulder of the road which is narrow and in poor condition in several places. The trail continues through the centre of Corner Brook, uphill in many places, until it eventually connects with Provincial Highway Route 450 at the intersection of O'Connell Drive. At this transition, an unmarked, abrupt turn onto O'Connell presents a wayfinding challenge as the route is not clearly indicated. Once again the route continues along the shoulder of the road through Curling until reaching Hilliards Road. From here, the trail takes another unmarked turn down Hilliards Road before connecting with the Newfoundland T'Railway which is now a shared path with ATVs. Sections of this trail are in poor condition and exhibit issues such as ponding, erosion, and uneven terrain. This trail provides a significant regional connection to the community of Mount Moriah and beyond to Port aux Basques to the west.

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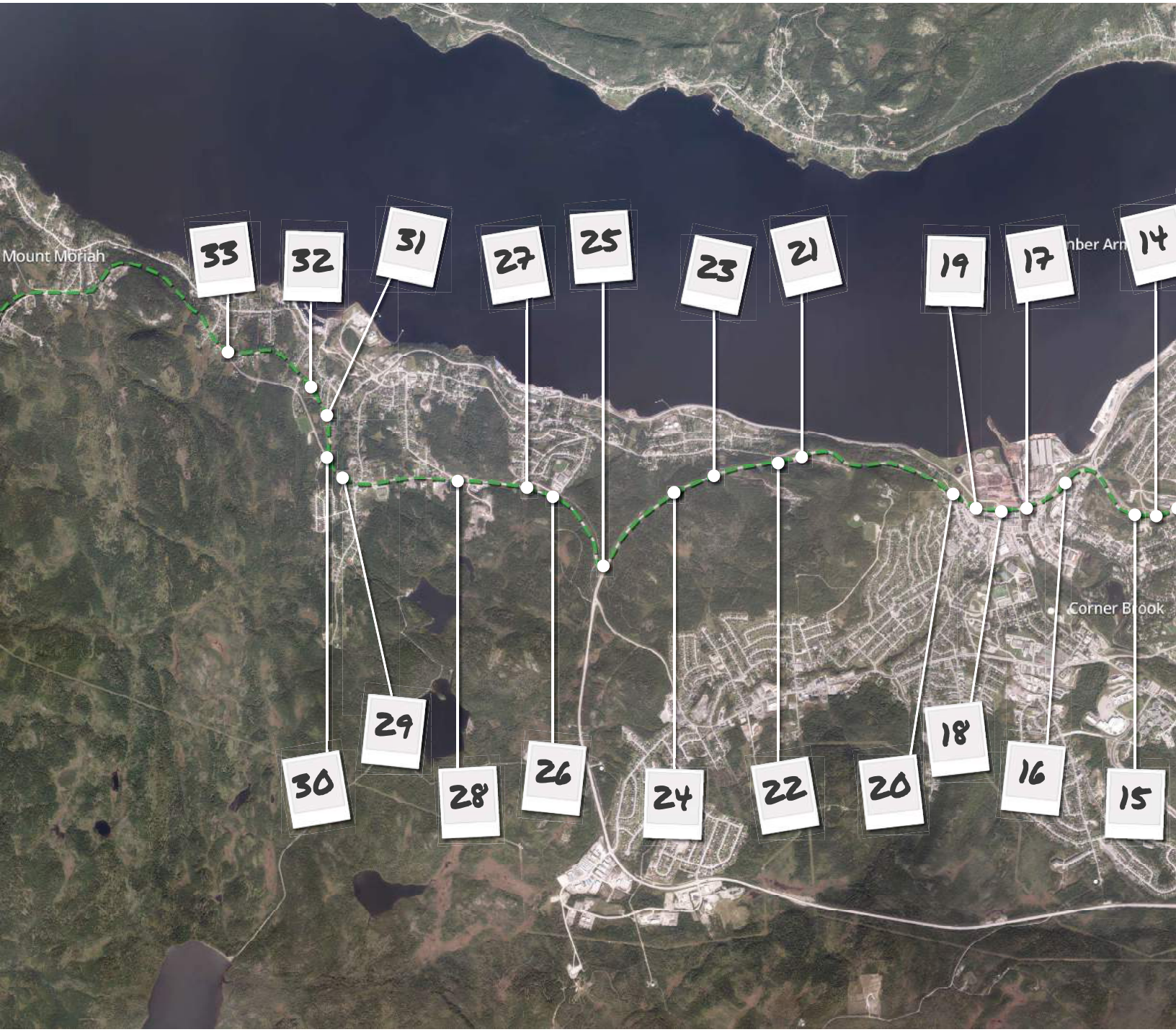

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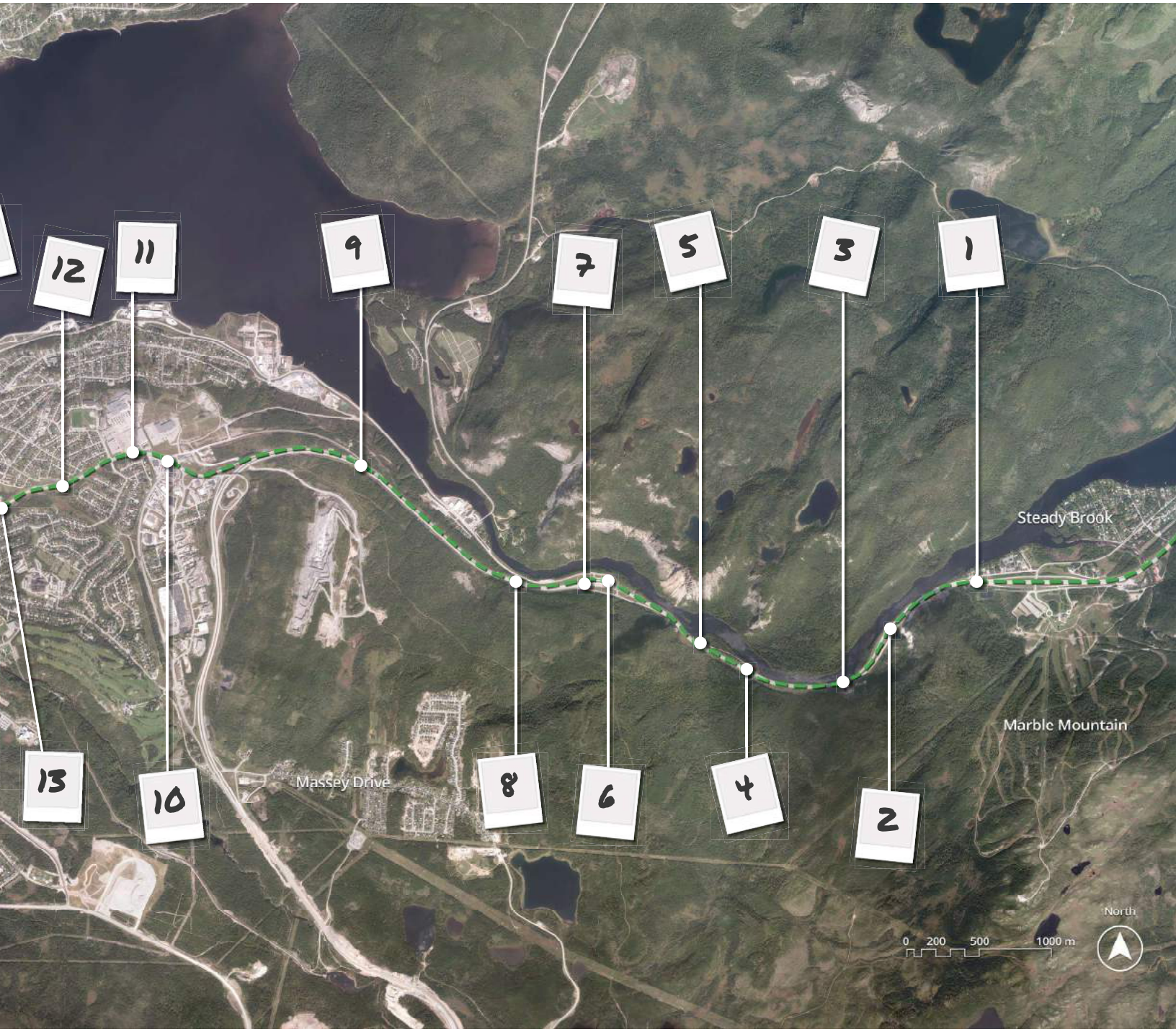
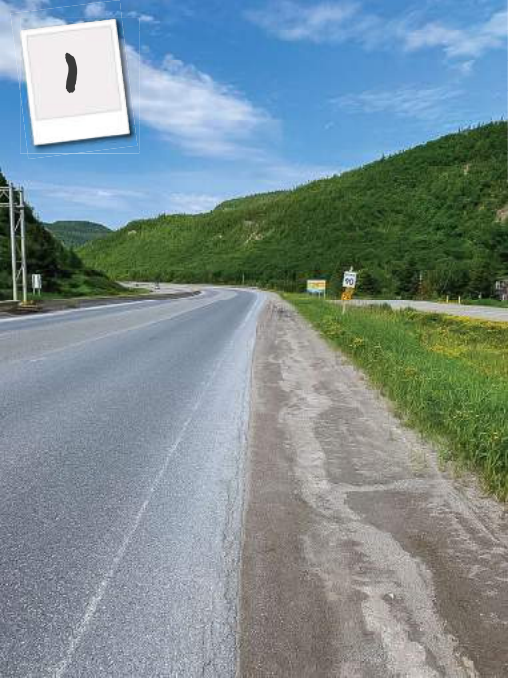
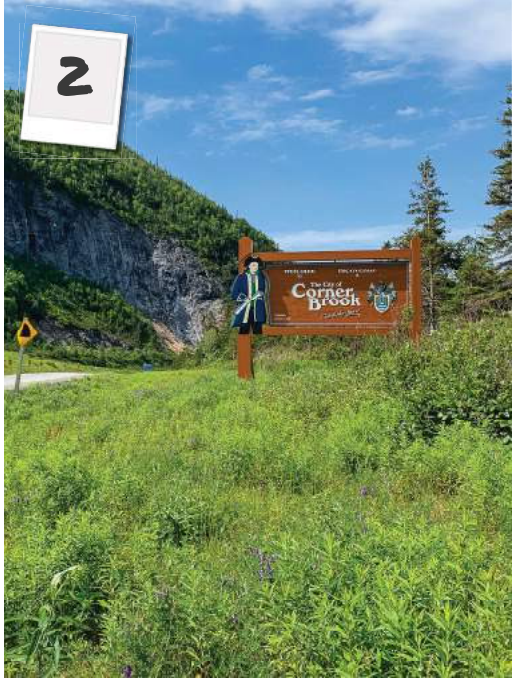
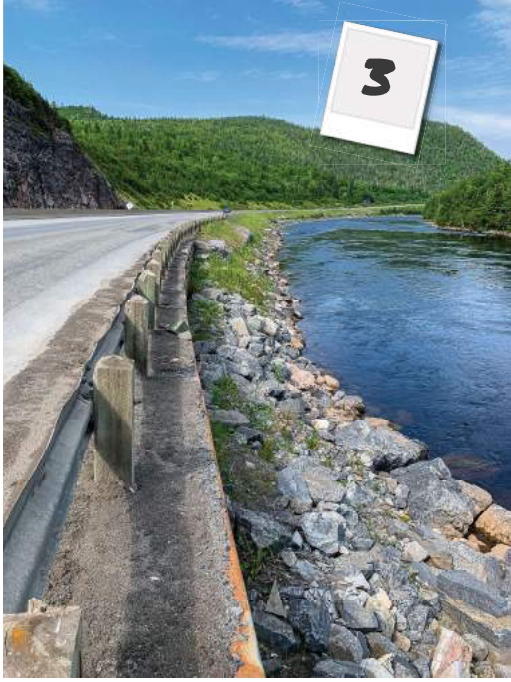
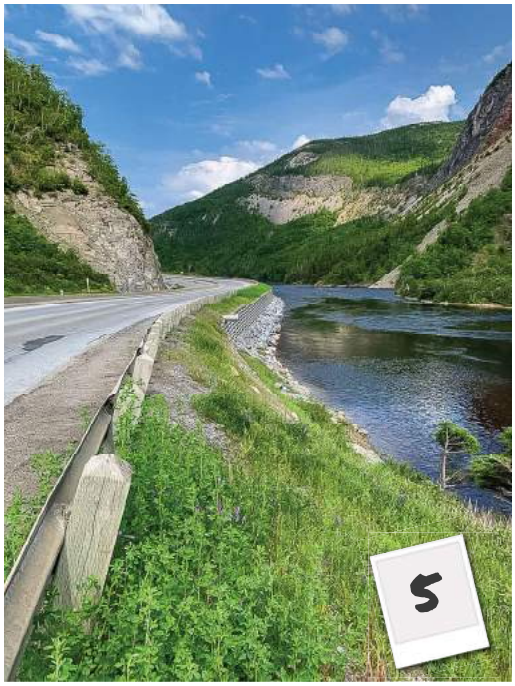


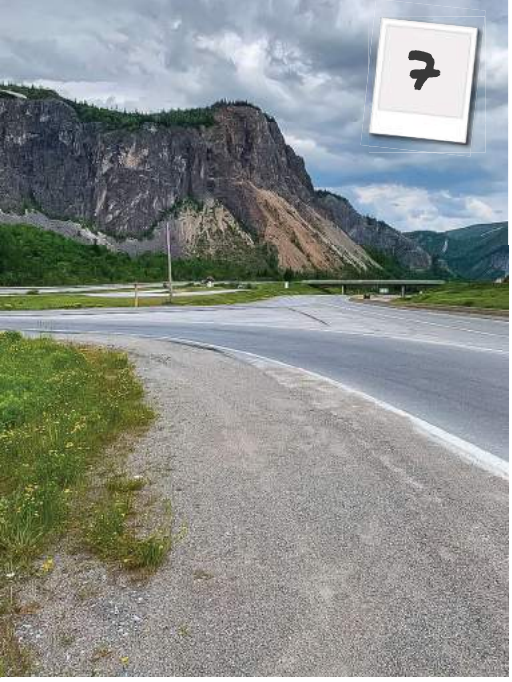


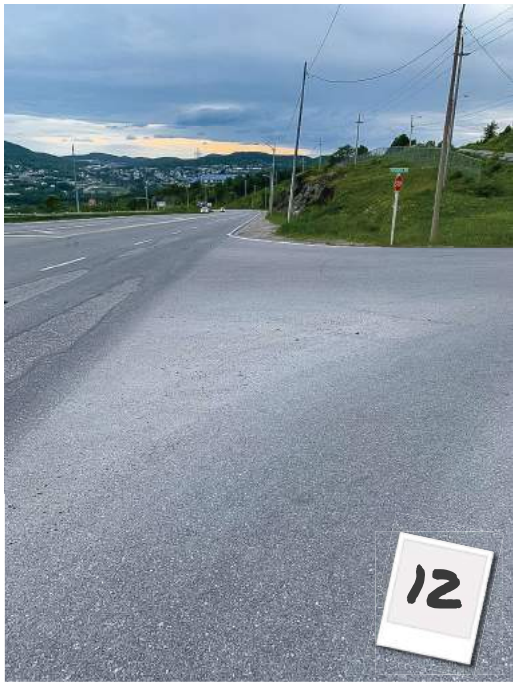






1. Trail follows shoulder on TCH
2. Existing city gateway sign
3. Shoulder here gets narrow, pinch point between Humber River & rock face, little opportunity to build on south side due to river
4. Narrow shoulder
5. Another challenging spot; see comments for #3 above
6. The Great Trail existing info kiosk at the Man in the Mountain lookout





7. Trail crosses large intersection, no signage or crosswalk marking
8. Narrow shoulder in poor condition
9. Significant grade change/uphill climb may be challenging for some users
10. High traffic area, crossing point has no signage or crosswalk marking
11. Narrow sidewalk in poor condition
12. Lewin Parkway crosses Batstones Road and Premier Drive, no signage or crosswalk markings at either

13. Major erosion, shoulder in poor condition

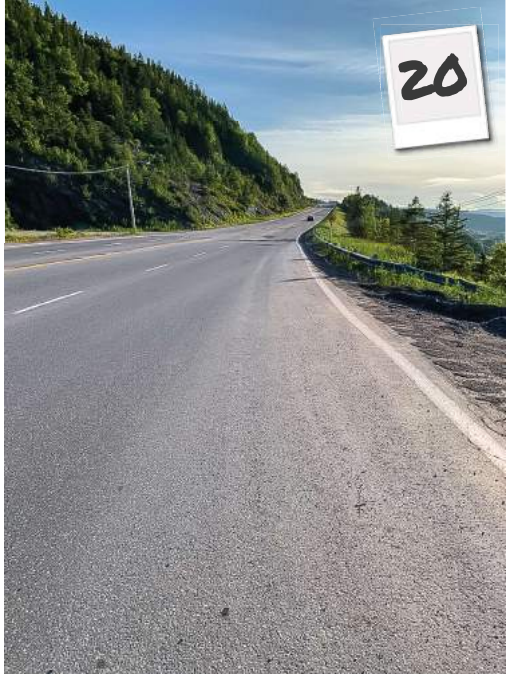
14. Pinch point as shoulder narrows

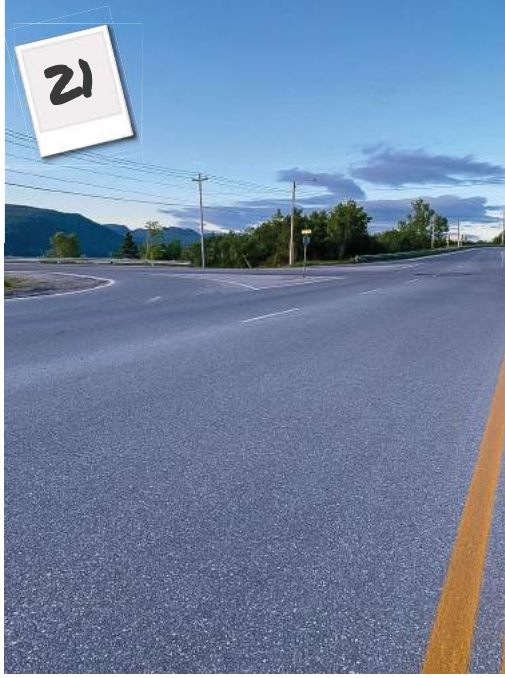
15. Further erosion, shoulder remains in poor condition

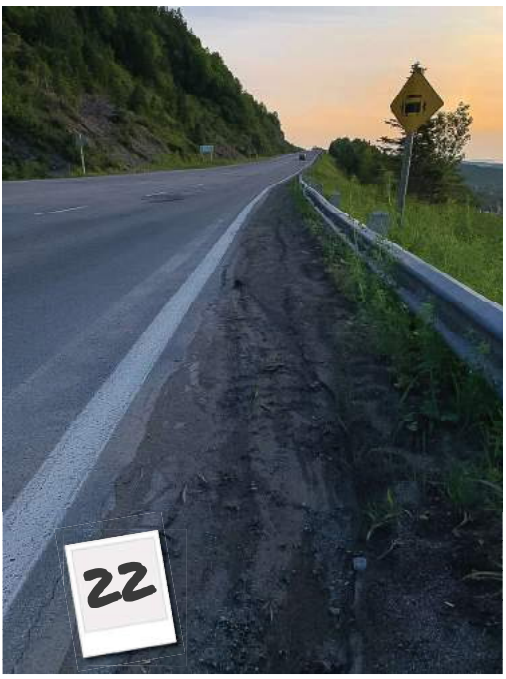
16. Shoulder disappears at bridge, nowhere for pedestrians to go but into traffic

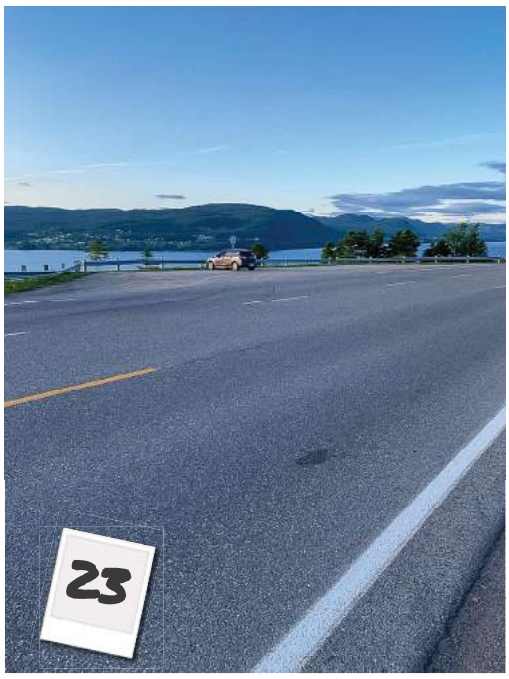
17. Informal trail for pedestrians adjacent to Mill bridge is too narrow

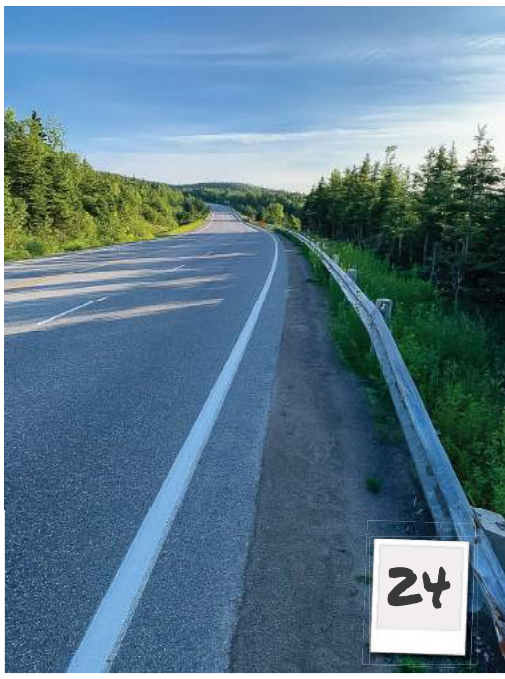
18. No separation (curb) between pedestrians and traffic, shoulder condition improves slightly











19. Long section of narrow shoulder in poor condition, uphill climb

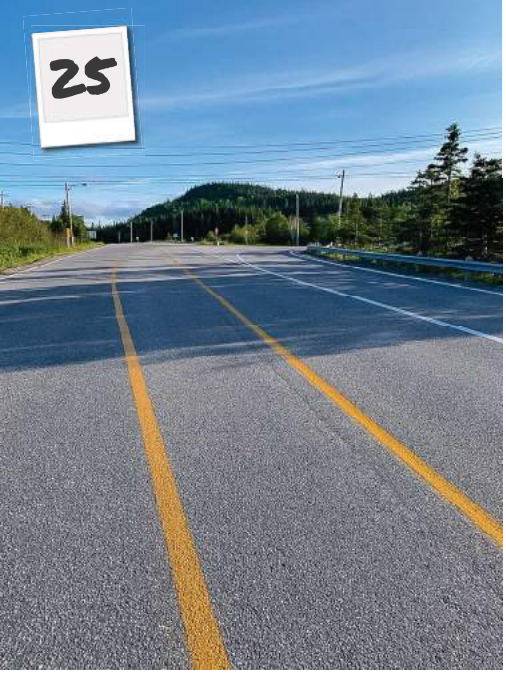
20. Significant uphill climb on road shoulder challenging for some users

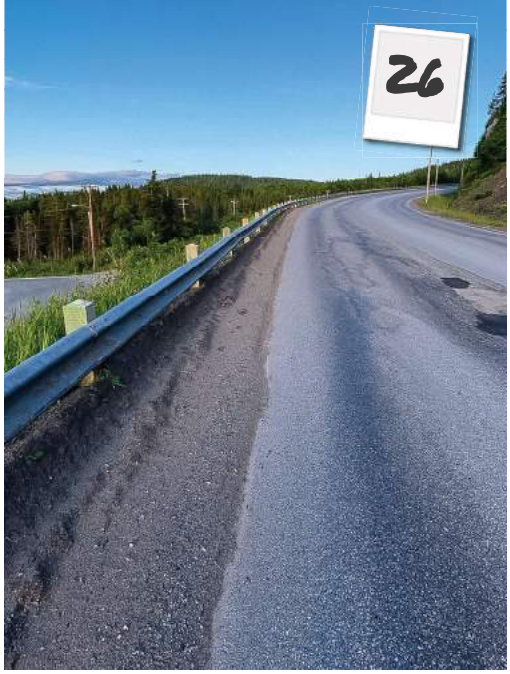
21. No signage or markings at Curling Street crossing

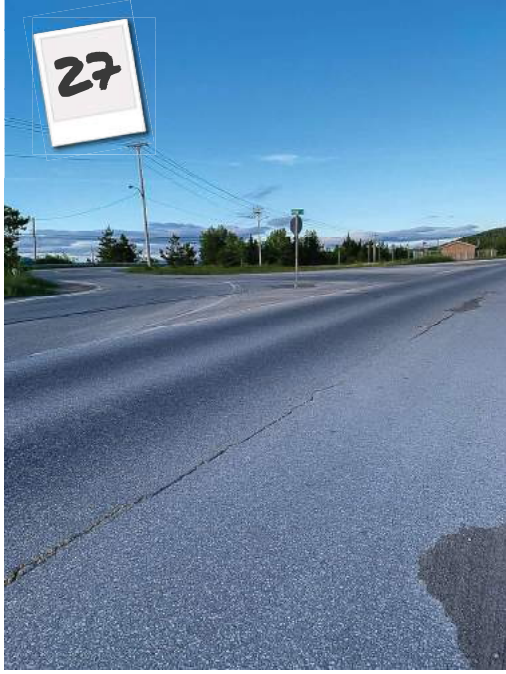
22. Significant uphill climb continues, erosion in places, shoulder in poor condition

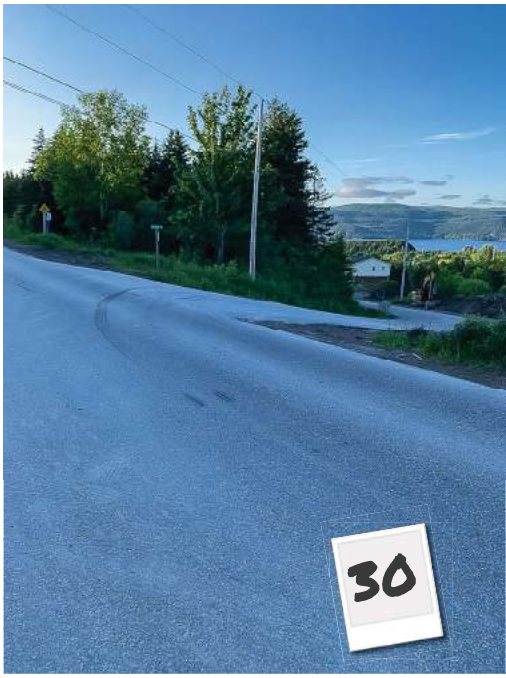
23. Rest/parking area, beautiful view

24. Uphill climb continues, shoulder narrows









25. Trail abruptly turns to follow Highway 450 with no signage or warning

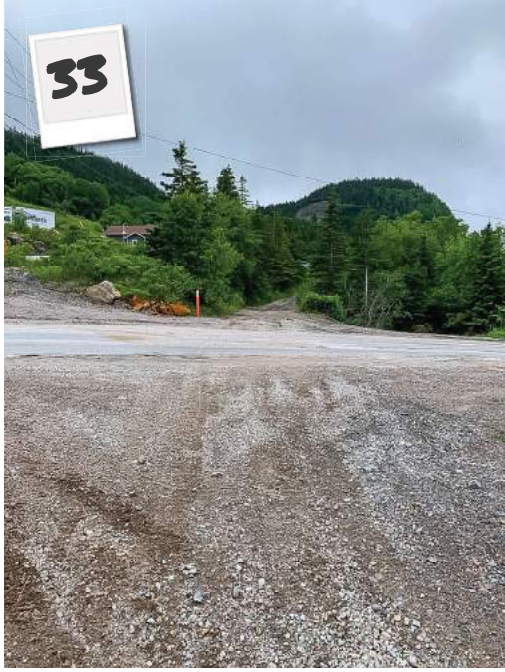
26. Shoulder narrows and is in poor condition in several places

27. Trail crosses Woodbine Avenue with no signage or crosswalk marking

28. Trail crosses Allens Road with no signage or crosswalk marking

29. Shoulder narrows at guard rail forcing trail users into the road, asphalt in poor condition in places

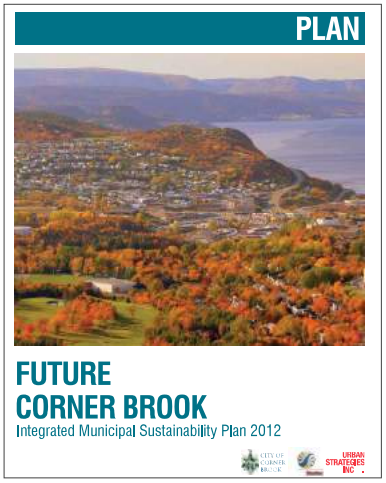
30. Trail abruptly turns down Hilliards Road with no signage or warning



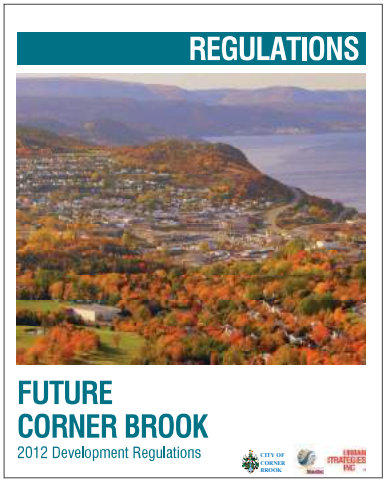
31. Trail connects with NL T'Railway, becomes shared route with ATVs
32. Trail in poor condition in place, erosion & ponding is evident
33. No signage or markings Knights Road/Snooks Lane crossing

Planning Context

The following municipal plans and studies were reviewed to extract pertinent information that could impact future trail development and to ensure all recommendations of this plan remained aligned with previous municipal goals and objectives.



The **Integrated Municipal Sustainability Plan (2012)**, which has its legal basis in the Urban and Rural Planning Act, is a continuation of a forward planning process that commenced in 1955. It is intended to provide policies for the overall physical design and development of the City of Corner Brook for the next ten years in order to improve the physical, social, environmental and economic well-being of the community. The Plan is intended to be of use to Council and City Staff as well as all public agencies and private individuals concerned with development, sustainability and the longterm health and well-being of the community.



The guiding regulatory document for all land use considerations related to the enforcement and implementation of the Municipal Plan is the **City of Corner Brook Development Regulations (2012)**.

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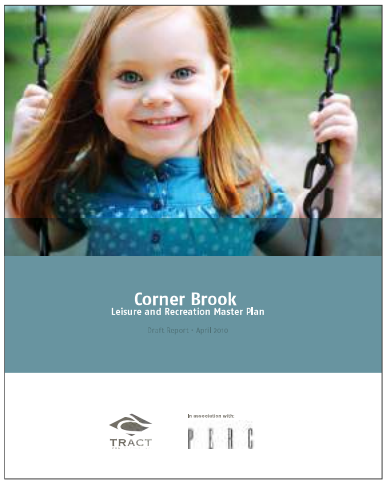
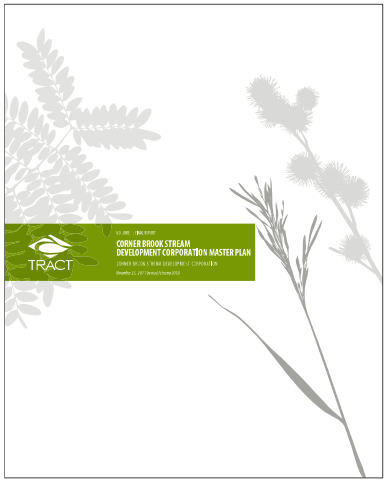
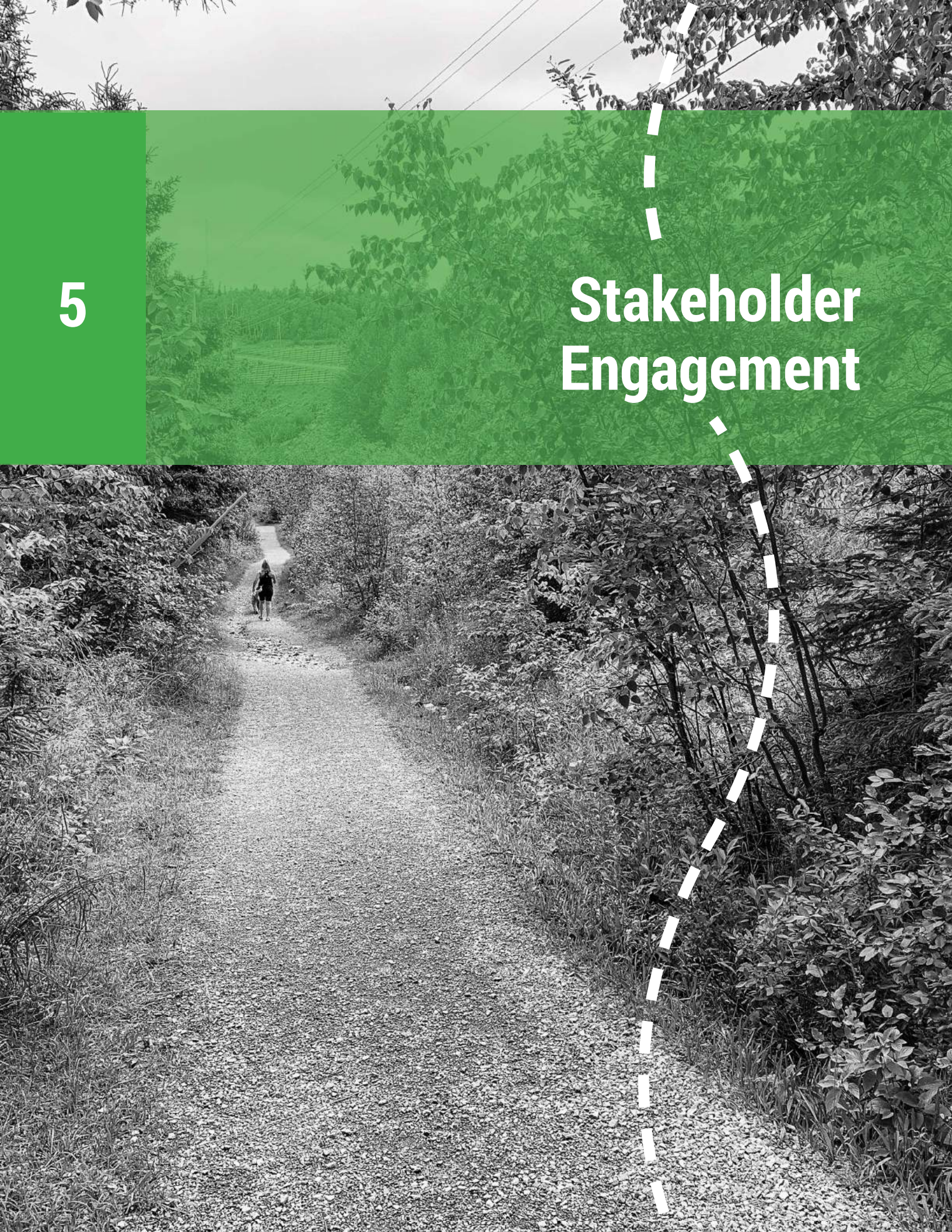


The purpose of the **Leisure/Recreation Master Plan (2010)** is to provide the City of Corner Brook with a comprehensive set of recommendations, and a decision making framework, for the future provision of parks and recreation facilities and services in the community. The recommendations reflect the strategic priorities identified in the three broad areas of (1) Indoor Facility Provision; (2) Outdoor Facilities, Parks, and Trails; and (3) Operations and Services.



The **Corner Brook Stream Development Corporation Master Plan (2012)** provided the rational and direction needed to guide trail development activities for the next five years and beyond. This plan provided instruction for the complete implementation of the CBSDC trail network and associated signature projects.

This **Opportunity Assessment Report (2017)** provides an unbiased overview of Corner Brook - how it is seen by a visitor. It includes a review of local marketing efforts, signage, attractions, critical mass, retail mix, ease of getting around, customer service, visitor amenities such as parking and public washrooms, overall appeal, and the community's ability to attract overnight visitors.



5 Stakeholder Engagement

Public Drop-In Sessions

Three informal drop-in sessions were scheduled on July 16th (5-7pm), July 17th (12-2pm), and July 19th (12-2pm). The sessions were held during convenient times such as during lunch hour or the after-work commute to maximize participation from members of the public. The intent of these sessions was to introduce the project to the community and receive input in a casual, relaxed setting. Several interactive displays were used to gain feedback including large maps which allowed visitors to draw their ideal trail routes and an ideas wall where participants could post their big ideas (and concerns) for the Great Trail. The event was hosted by one member of the consulting team as well as the City's Project Manager. In total, fourteen community members attended the three sessions. The following feedback was received:

- *Most participants were not aware of the current Great Trail route through Corner Brook.*
- *A section of former rail bed was identified (north of Riverside Drive).*
- *The decommissioned water supply area has become a popular spot for hikers and ATV users.*
- *There are several established mountain biking trails in the area (Ginger Route and Curry Trail were identified specifically).*
- *A section of the Appalachian Trail exists on the north side of the Humber River. This section of trail can be challenging and may not be ideal for motorized uses.*
- *There is an existing snowmobile trail that goes from a parking area by Marblewood Village Resort up Marble Mountain and around the ski hill, eventually connecting with Massey Drive. This could become a bypass route.*

- *Need to consider the trail user; will the average user be interested in a circuitous or challenging bypass route? Will commuters actually use it if it is not convenient?*
- *Bartlett's Point Park was identified as a popular local and tourist attraction.*
- *The existing bike path on Riverside Drive is challenging to use during winter due to snowclearing, snow melt (runoff) and salt.*
- *The areas around the mill and cruise ship dock were identified as being tourist areas.*
- *Two pinch points adjacent to the TCH were identified as being the most significant challenges to installing a continuous route between Steady Brook and Corner Brook.*
- *Crossing over the Humber River, either with new pedestrian bridges or cantilevering off the side of the TCH, were posed as possible solutions to this problem.*
- *Many agreed that a commuter route between Steady Brook and Corner Brook would be welcomed and likely well-used.*
- *The area north of the Man in the Mountain lookout (around Wild Cove Lake) was identified as a popular ATV area.*
- *There is much natural history in this area including several sections of old growth forest.*
- *A trail connection to Cook's Lookout would be welcomed.*
- *Connecting Great Trail users to the Corner Brook Stream trail system and into the downtown area was thought to be a good idea.*
- *Other ideas put forward on the Ideas Wall:*
  - *more viewpoints*
  - *wildflowers*
  - *clean trails*
  - *sidewalks along urban routes*
  - *fine gravel or wood chip surfacing*
  - *safety*
  - *dedicated routes for vehicles and pedestrians*
  - *providing zones*
  - *marketing and promoting the trail system*


Mount Moriah
Humber Arm
Existing Great Trail Route
Can we tie into Cook's Lookout?
Pave Riverside to Lewin Parkway
More trails here
Leisure
Corner Brook
Steady Brook
Marble Mountain
There hiker Hard!
Do you have an idea for a Great Trail? We'd love to hear it. Feel free to place a post-it note anywhere on the plan to leave a suggestion, or draw right on the map!
0 200 500 1000 m


Mount Moriah
Humber Arm
Existing Great Trail Route
Bikers use
Trailway
Access
could not do this on bike or quad
Doesn't allow motorized vehicles
Corner Brook
Steady Brook
Marble Mountain
This area attractive to ATVers/ sledders
Biking Heart
Explore a bypass route here
Do you have an idea for a Great Trail? We'd love to hear it. Feel free to place a post-it note anywhere on the plan to leave a suggestion, or draw right on the map!
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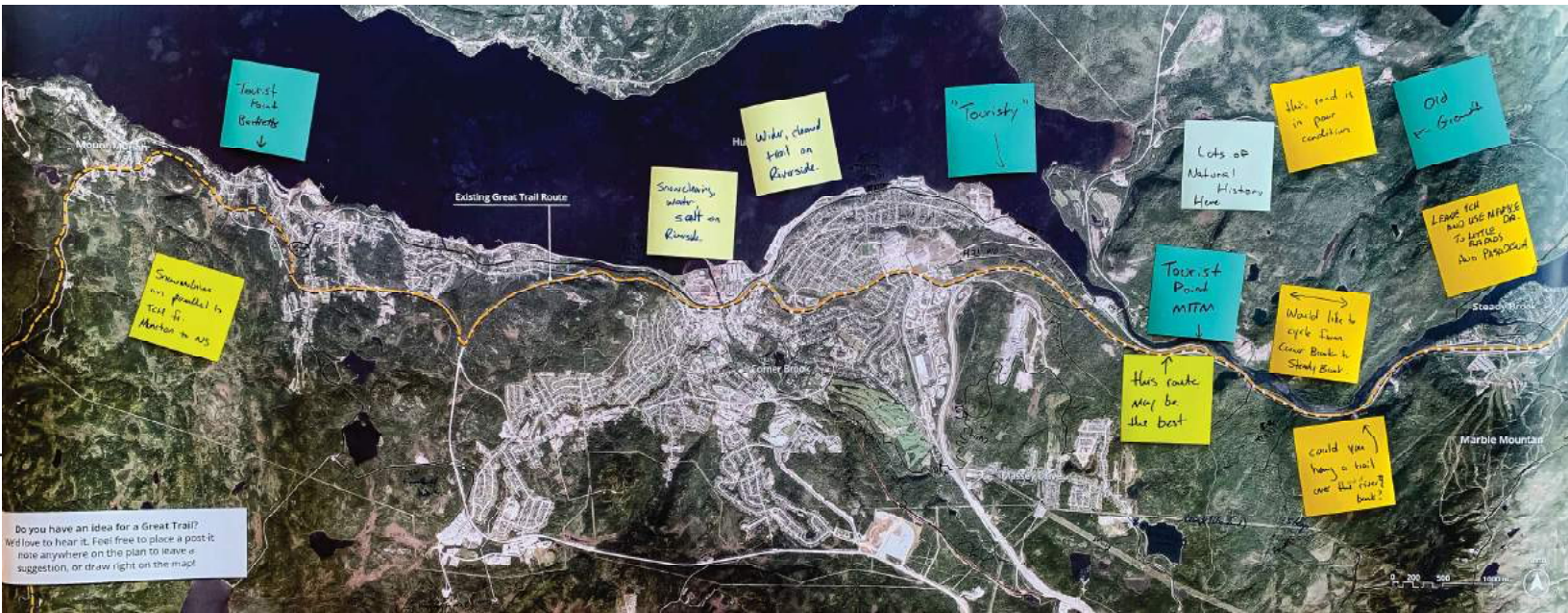
Tourist Point Beothuks
Mount Moriah
Existing Great Trail Route
Snow clearing, wider cleared trail on Riverside
Snow clearing, weather salt on Riverside
"Touristy"
This road is in poor condition
Old
Lots of Natural History Here
Tourist Point MTTM
Would like to cycle from Corner Brook to Steady Brook
This route may be the best
could you have a trail over the river?
Corner Brook
Steady Brook
Marble Mountain
Do you have an idea for a Great Trail? We'd love to hear it. Feel free to place a post-it note anywhere on the plan to leave a suggestion, or draw right on the map!
0 200 500 1000 m

Key Stakeholder Meetings

Meeting with City Staff
July 16, 2019, 1:30-2:30pm

- *Nobody present at the meeting was aware of the current Great Trail route through Corner Brook.*
- *Once a new trail route has been identified and implemented, ongoing maintenance was raised as a possible concern for the City; there were questions about who would be responsible, especially if the trail is shared with other stakeholder groups.*
- *Accessibility was identified as a priority, but also as a significant challenge.*
- *The existing bike trail along Riverside Drive is intended to provide access to the Man in the Mountain.*
- *Several potential routes for the Great Trail were discussed including the old rail bed above Riverside Drive; snowmobile trails around top of Marble Mountain, connecting to Ginger Trail and into the downtown; and the Corner Brook Stream trail system.*
- *Bringing people into the city was considered advantageous due to tourism and economic development opportunities.*
- *Many ATV users travel from Deer Lake/ Nicholsville to Hughes Brook; this is a preferred route for ATVs.*
- *Council has recently introduced an ATV route to provide access for ATV users going from Ballam Bridge east of the city to Mount Moriah.*
- *Most undeveloped land around the city is Crown land or owned by the City or Kruger.*
- *Kruger seems amenable to trail development except within powerline easements.*
- *The old water supply is currently being decommissioned but could be a possible attraction for swimming or other outdoor activities.*
- *Watson's Pond is one of the largest snowmobile hubs in the area.*
- *Snowmobilers cannot currently access downtown.*
- *Shared trails with ATV users would be welcomed; the City has engaged ATV users and has developed a positive relationship.*
- *Several potential future projects may influence proposed Great Trail routes including the new hospital, a pool at Grenfell Campus, development on Boone's Road, and a new water treatment facility on the waterfront.*

Meeting with Mayor Jim Parsons
July 17, 2019, 2:00-3:00pm

- *ATV use can be expected to increase slightly with the recent introduction of the ATV route, however it will be limited to designated routes.*
- *Steady Brook is considering allowing ATVs on Marble Drive.*
- *ATV routes will not travel through residential or commercial areas.*
- *It would be ideal to keep ATVs off the road, but only if it is practical.*
- *Regarding a possible route for the Great Trail, it would be preferable to bring trail users into the city instead of around it.*
- *A trail connection from the new hospital site to the Corner Brook Stream trails is a good idea.*
- *Land ownership or available land may pose a challenge to expansion along Riverside Drive.*
- *There is a section of old rail bed in Curling that is not currently leased from the Province.*
- *An improved trail connection down Mount Bernard Avenue from Grenfell to downtown would be welcomed.*
- *The Qalipu First Nation are developing a park (Participark) in this area which may provide another opportunity.*

Meeting with Randa James, Supervisor of Planning
July 19, 2019, 2:00-2:30pm

- *It's important to ensure all user groups are considered, including skateboarders and longboarders.*
- *There can be a conflict between user groups on a trail, especially between pedestrians (walkers) and users in motion.*
- *Vancouver faced similar challenges, tried painting a line on the trails which did not work. Perhaps two separated routes would work.*
- *The trail system needs to be made clear including expectations and trail etiquette.*
- *Consider ways of slowing users down such as ridges or crosscuts. Explore best practices.*

West Coast Cycling Association

Meeting with the West Coast Cycling Association (WCCA)
July 17, 2019, 9:30am-10:30am

- *The WCCA's mandate is mountain bike trail development, but their trails are generally multiuse; uncertain if snowmobiling would be practical.*
- *They currently develop trails to International Mountain Bicycling Association (IMBA) standards for intermediate to advanced skill levels.*
- *Self-policing is important on trails; signage and awareness are important tools to familiarize users with rules and etiquette.*
- *The City is not currently accessible to inexperienced cyclists such as children; the Corner Brook Stream trails do not permit bikes on the trail system, however they are the safest trails for beginner cyclists.*
- *A connection to Bartlett's Point Park should be a priority for families.*
- *The existing Riverside Drive bike trail is preferred for cycling over the current Great Trail route along Lewin Parkway.*
- *It is important to consider user groups when selecting a new route for The Great Trail; it should be geared toward the average user who may not use difficult or remote wilderness trails (such as around Marble Mountain).*
- *A connection between Steady Brook and Corner Brook would be welcomed; people commute between the two communities daily.*
- *Parks Canada previously racked users on the Ginger Route, a trail developed by WCCA volunteers, and found it had 300+ users per day.*

Qalipu FIRST NATION

Meeting with the Qalipu First Nation (QFN)
July 19, 2019, 9:00-10:30am

- *The Humber River is magnificent; could this become a paddling route? Going from west to east (upstream) would be difficult however.*
- *The scenery along the river is breathtaking.*
- *The existing trail along Riverside Drive/Griffin Drive is an opportunity.*
- *There is a section of Appalachian Trail in Benoit's Cove that connects to Port aux Basques.*
- *The mill and port areas in Corner Brook are currently lacking aesthetic and tourism appeal.*
- *Perhaps pedestrians can be re-routed from the port up to Humber Road to get away from these areas.*
- *This has the added benefit of bringing visitors by popular local businesses such as the Harbour Grounds.*
- *Connection could continue along Main Street and eventually to Broadway.*
- *Regarding a bypass route around Marble Mountain, it was thought possible, but would take users away from the scenic entry experience along the Humber River.*
- *From a tourism perspective, trails inside the city would give the best experience.*
- *Wayfinding and directional signage within the city is currently lacking and presents an opportunity for improvement.*
- *QFN is currently involved in several projects under development that could represent trail connection opportunities including the Participark, Majestic Lawn, and the STAR project.*

Meeting with the International Appalachian Trail (IATNL)
July 29, 2019, 10:30am-11:00am

- *ATVs are currently a priority in Corner Brook due to the introduction of the new ATV route.*
- *The Great Trail is currently on the south side of the Humber River, the IATNL trail is on the north; the Great Trail connects users to adjacent communities whereas the IATNL trail bypasses them.*
- *This is because of IATNL's focus on through-hikes and adventure routes.*
- *Connectivity to communities should be a priority for the Great Trail.*
- *Linkages will be very important; the Great Trail could become a spine upon which other trails are built from.*
- *Self-navigation is used on IATNL trails.*
- *IATNL is tolerant of multiuse trails, however insurance costs have been an issue in the past.*
- *When weighing the proposed options, it is important to consider value for money; as an example, one expensive pedestrian bridge vs. 100-kilometres of new trail may cost the same.*
- *It is also important to consider the return on investment; is it worth developing a commuter route between Steady Brook and Corner Brook if it is only used by a few people?*
- *The biggest challenge expected for the new Great Trail route will be accommodating motorized vehicles; the IATNL studied this for a long time and could not find practical solutions to accommodating all users on a single trail.*
- *The Cabox Geopark is a current priority project for IATNL and has been in development since 2014. A trail connection to the Geopark would be welcomed and encouraged.*

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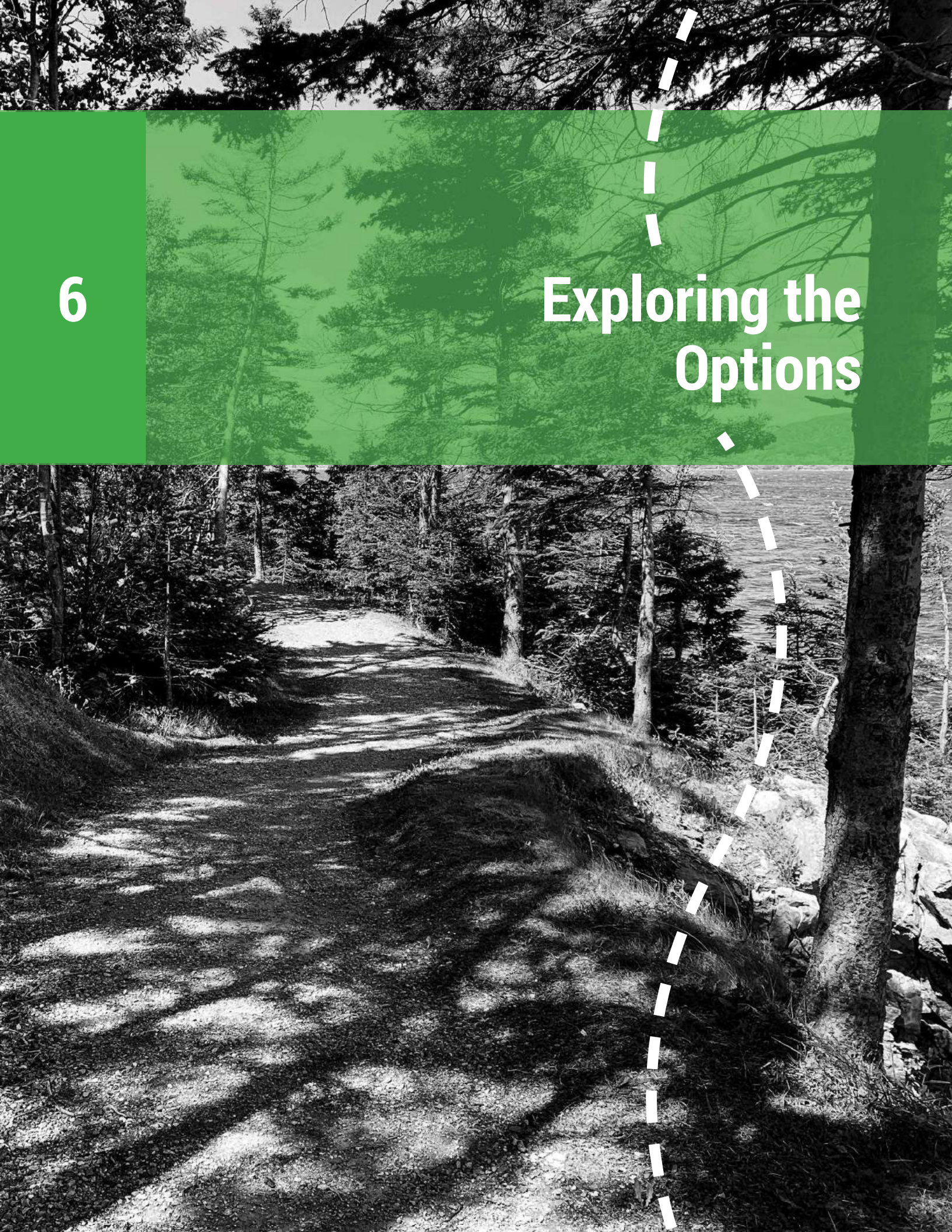
Meeting with The Great Trail
July 30, 2019, 10:30am-11:00am

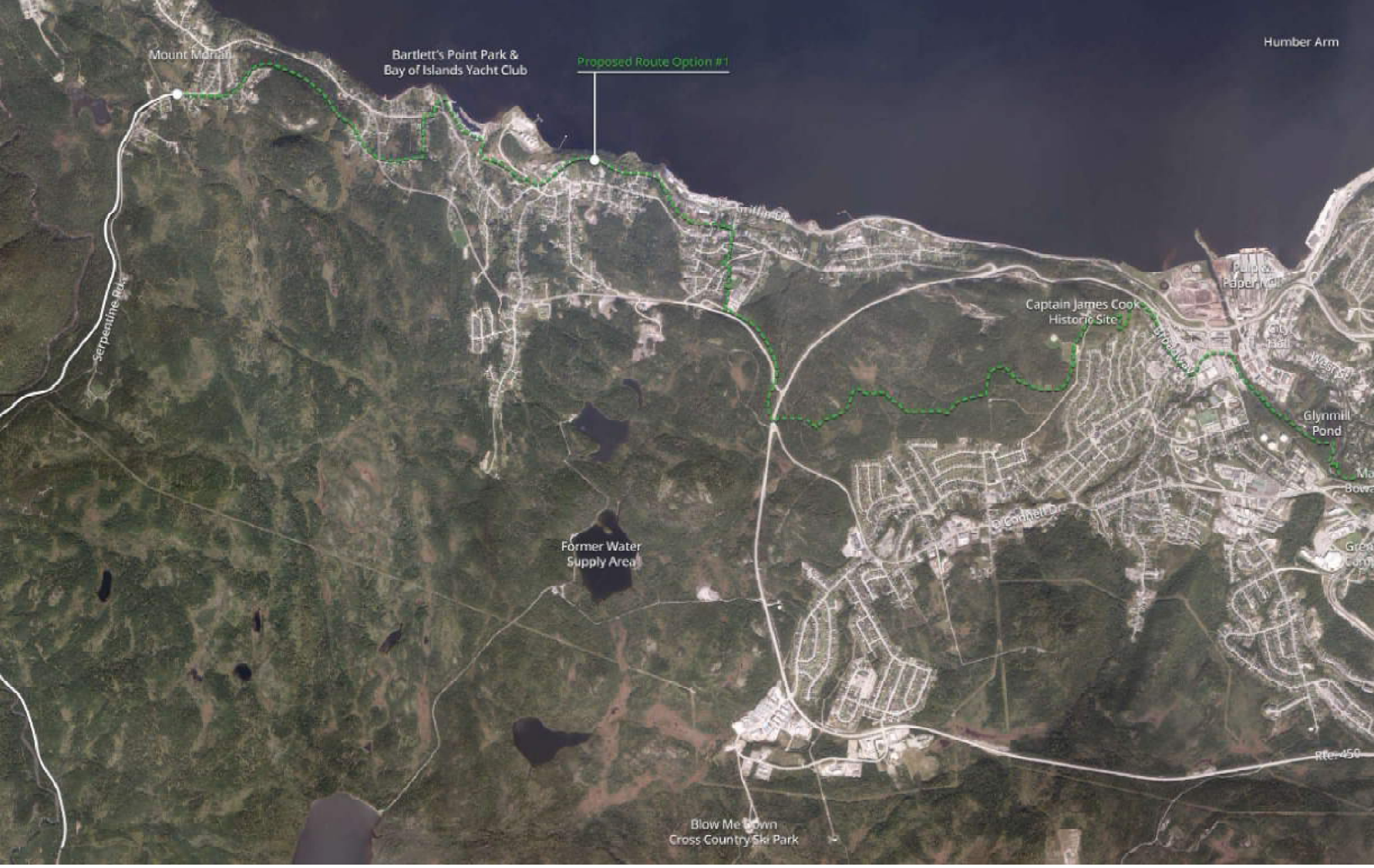
- *The Great Trail's mandate is to develop a trail that connects the three coasts of the country.*
- *The trails are intended to be focused on non-motorized uses during summer months.*
- *The current Great Trail route in Corner Brook was registered before the Great Trail organization developed its mandate, so it has been grandfathered in.*
- *It was understood that the current Great Trail route is no longer ideal.*
- *They would be open to permitting motorized uses, however would need rationale to be provided as a result of this study.*
- *Of the six uses listed in the Great Trail's Greenways Vision and Core Principles, it is not mandatory that all six uses be provided on a single route.*
- *There is an updated Greenways Vision and Core Principles to be released shortly that removes the six uses and would consider allowing motorized uses.*
- *Motorized uses would require regulation, safety plan, and enforcement.*
- *If motorized uses are permitted, the trail must still allow other uses; it cannot be a motorized use trail only.*
- *ATVs are not preferred, however snowmobiles are ok; ATVs typically cause trail damage and impact the enjoyment of the trail for other users during summer.*
- *The Great Trail organization leaves construction details and standards up to its partners. Items such as trail width, surface material, etc. are dependent on the type of trail uses, practicality of maintenance, etc.*
- *The Great Trail engages the idea of bringing people into the city; if there is an opportunity to do so, it is encouraged as this will only increase trail usage.*
- *In their experience, fringe trails eventually get relocated or additional linkages installed to city centres anyway.*

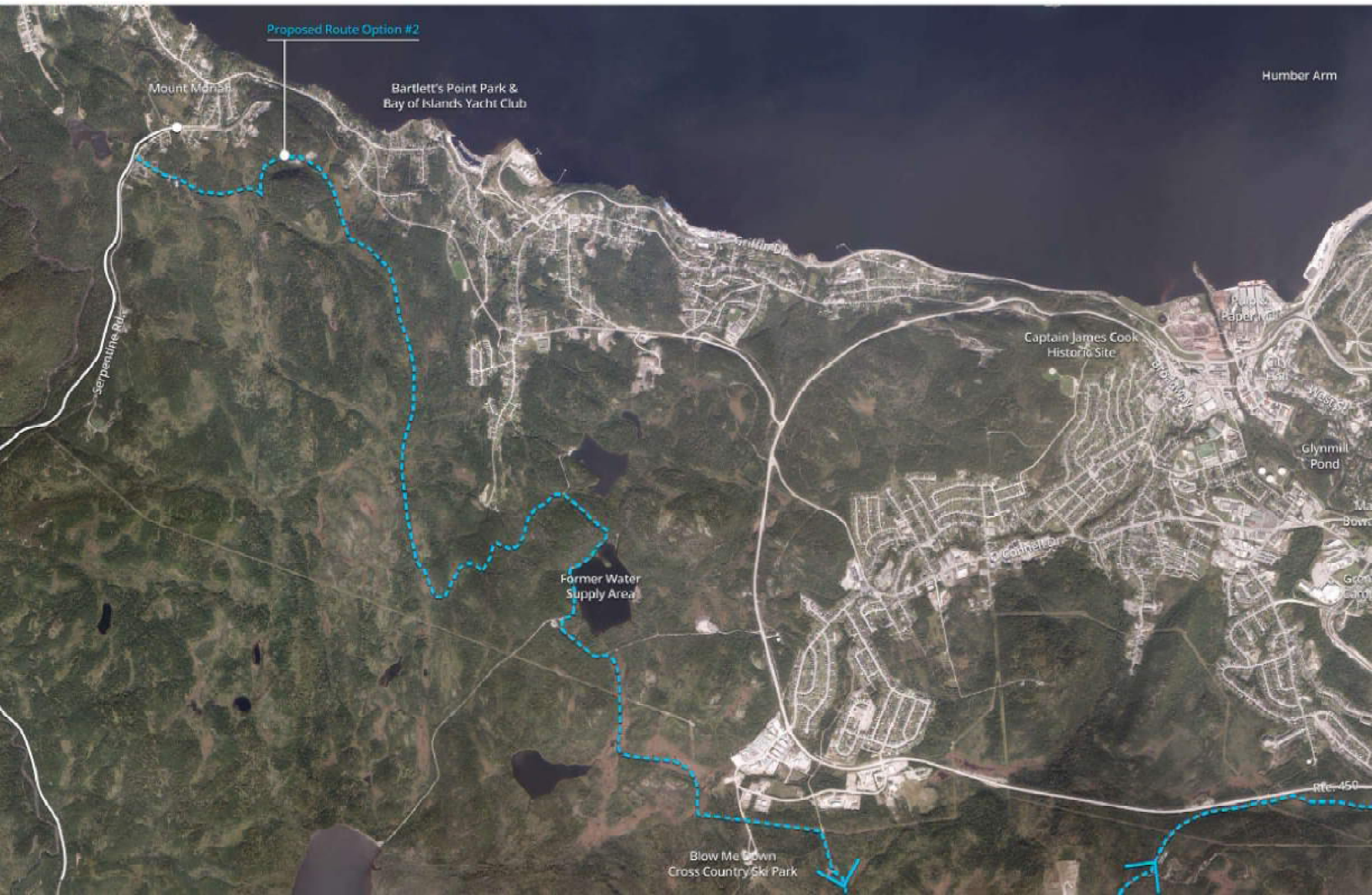


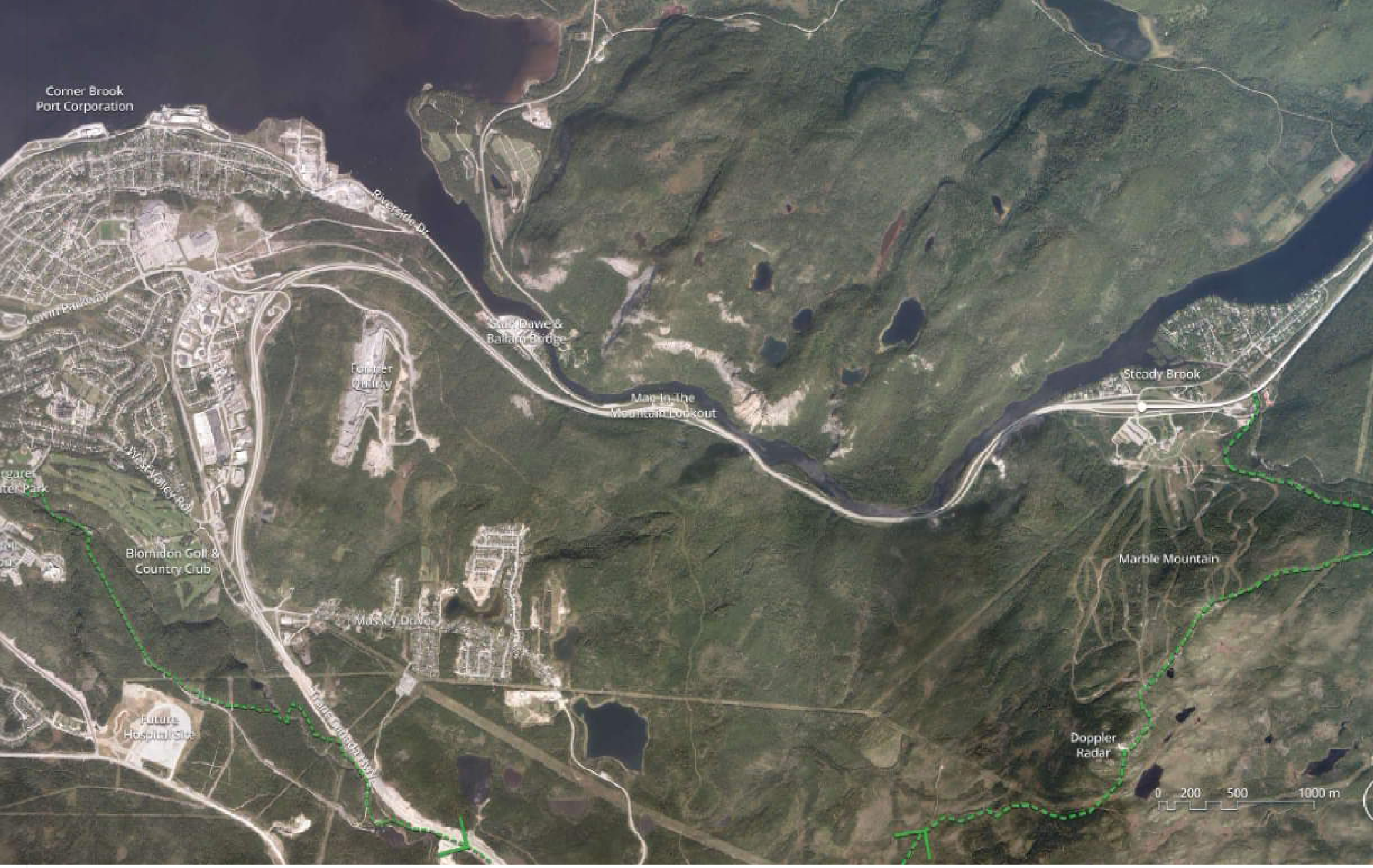
6 Exploring the Options

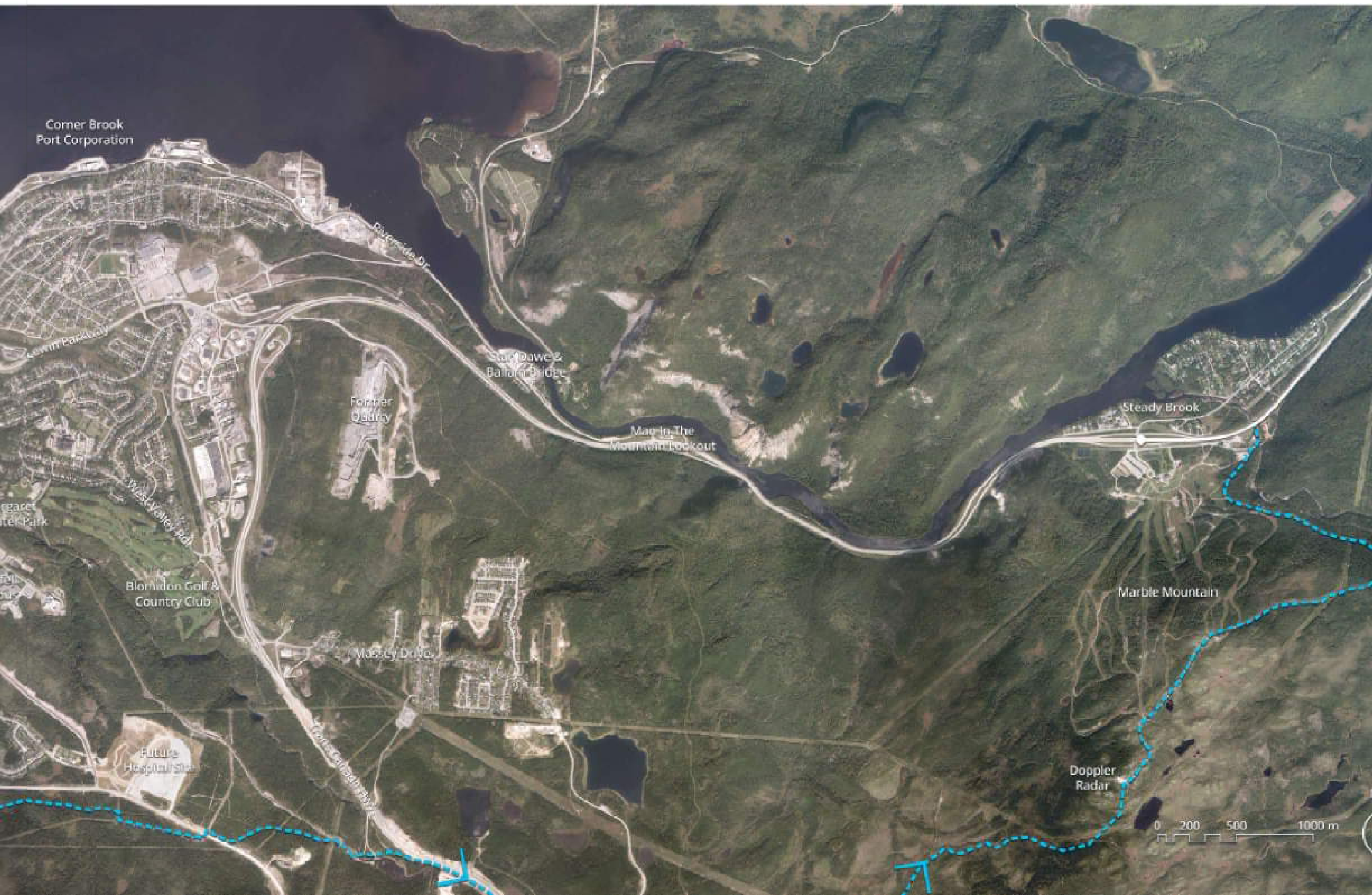
Based on feedback received during the previous project phases, five potential routes were identified for preliminary exploration. Stakeholder discussions and review of City mapping revealed an extensive network of existing trails around Corner Brook, which included a mix of walking, snowmobile, ATV, adventure, and mountain biking trails. The study team therefore decided to choose routes that incorporated existing trail rights-of-way and other infrastructure to create efficiencies and minimize development costs. Routes aimed to provide a variety of trail experiences ranging from urban trails to backcountry greenways. The following routes were selected for preliminary consideration:

Route	Description	Notes from Initial Analysis
Option #1: Cultural Connector	Connects users with several prominent attractions within the city	Trails pass through land with future development potential as well as through areas behind Marble that may inhibit construction and present accessibility concerns. This option not suitable for further consideration.
Option #2: Bypass Route	Option that bypasses the city for a backcountry experience	Trail route that entirely bypasses the city is not desirable. This option not suitable for further consideration.
Option #3: Riverfront Route	Scenic route that follows the water's edge	Relatively flat, scenic, and strong downtown connections. This route represents a plausible option and merits further assessment.
Option #4: Urban/Rural Hybrid	Provides a mix of rural backcountry and urban city routes	Trails around Marble may be challenging to construct and present accessibility concerns. Avoid the active quarry site. Trail along waterfront and connection to Bartlett's Point Park are positive. This route represents a plausible option and merits further assessment.
Option #5: Downtown Detour	Route that brings users through the heart of the city	Strong connection to the city centre, however potential development lands should be avoided. This route represents a plausible option and merits further assessment.


Humber Arm
Mount Moriah
Bartlett's Point Park &
Bay of Islands Yacht Club
Proposed Route Option #1
Serpentine River
Captain James Cook
Historic Site
Trans Canada Trail
Glynmill
Pond
Former Water
Supply Area
Rte 450
Blow Me Down
Cross Country Ski Park


Proposed Route Option #2
Humber Arm
Mount Moriah
Bartlett's Point Park &
Bay of Islands Yacht Club
Serpentine River
Captain James Cook
Historic Site
Trans Canada Trail
Glynmill
Pond
Former Water
Supply Area
Rte 450
Blow Me Down
Cross Country Ski Park


Corner Brook Port Corporation
Riverside Dr
Lewin Parkway
Cecil Dawe & Ballam Bridge
Former Quarry
Man In The Mountain Lookout
Steady Brook
West Valley Rd
Blomidon Golf & Country Club
Marble Mountain
Massey Drive
Future Hospital Site
Trans Canada Hwy
Doppler Radar
0 200 500 1000 m


Corner Brook Port Corporation
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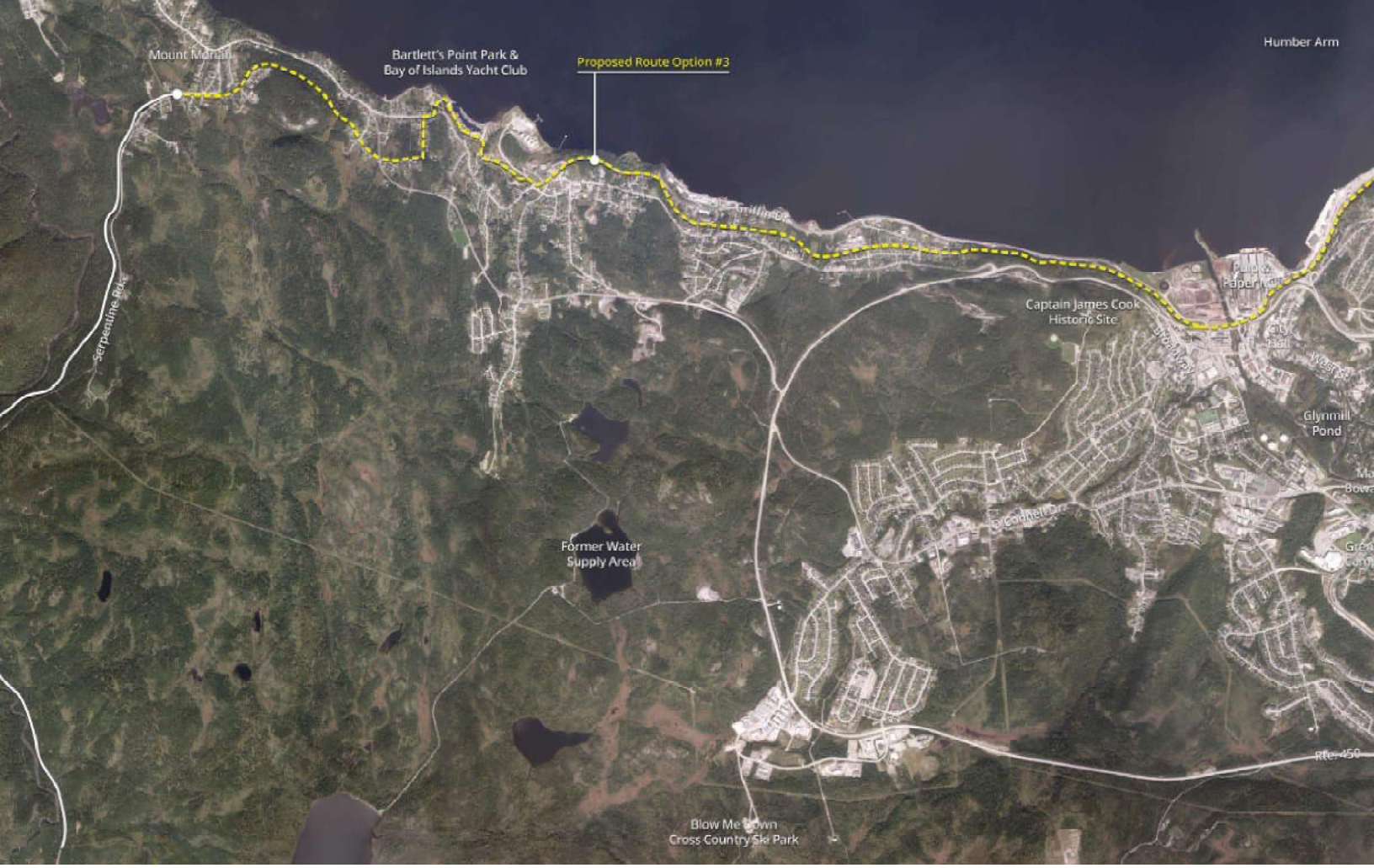
Mount Moriah
Bartlett's Point Park &
Bay of Islands Yacht Club
Proposed Route Option #3
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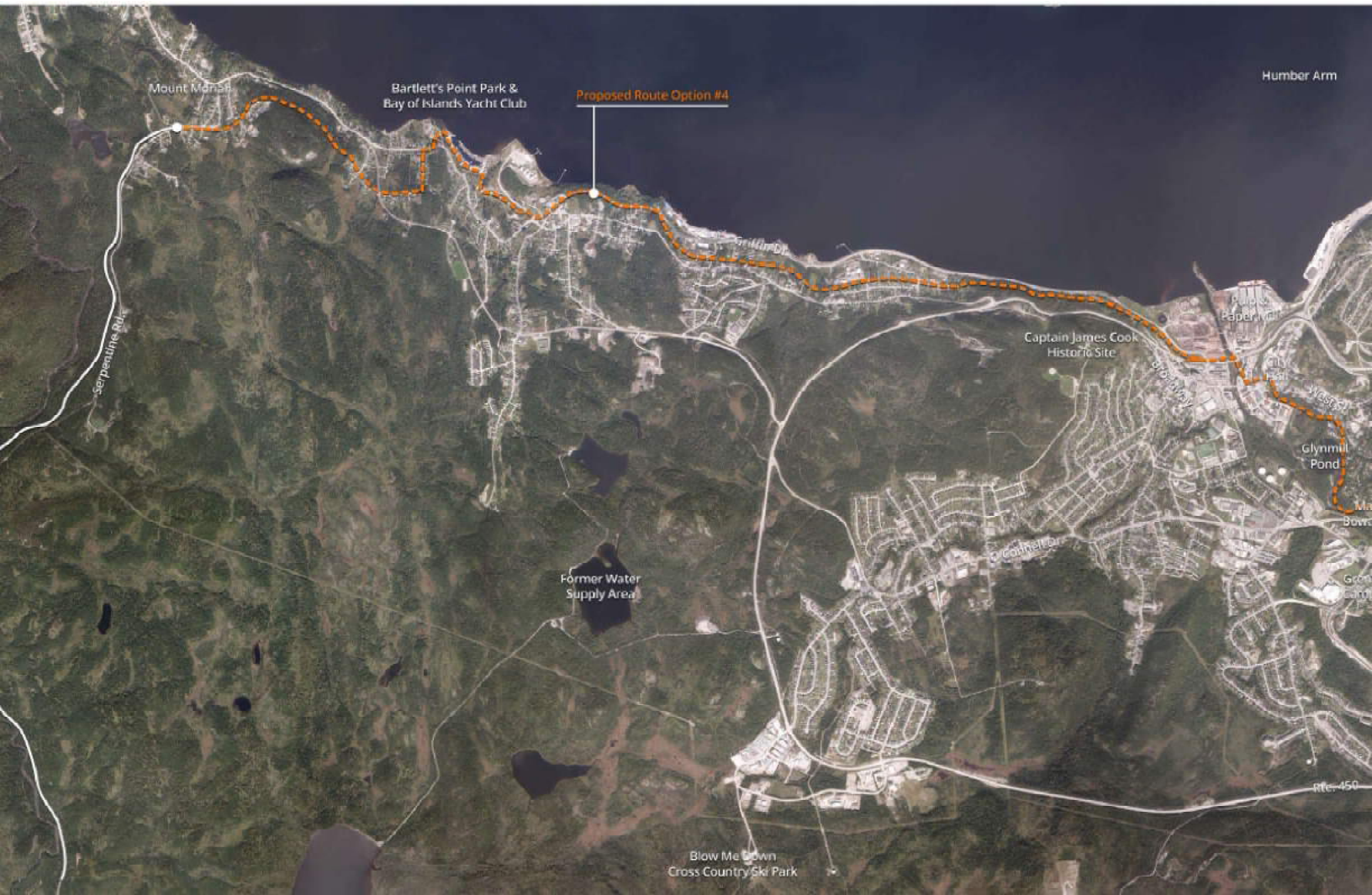
Serpentine River
Captain James Cook
Historic Site
Glynmill
Pond
Former Water
Supply Area
Blow Me Down
Cross Country Ski Park


Mount Moriah
Bartlett's Point Park &
Bay of Islands Yacht Club
Proposed Route Option #4
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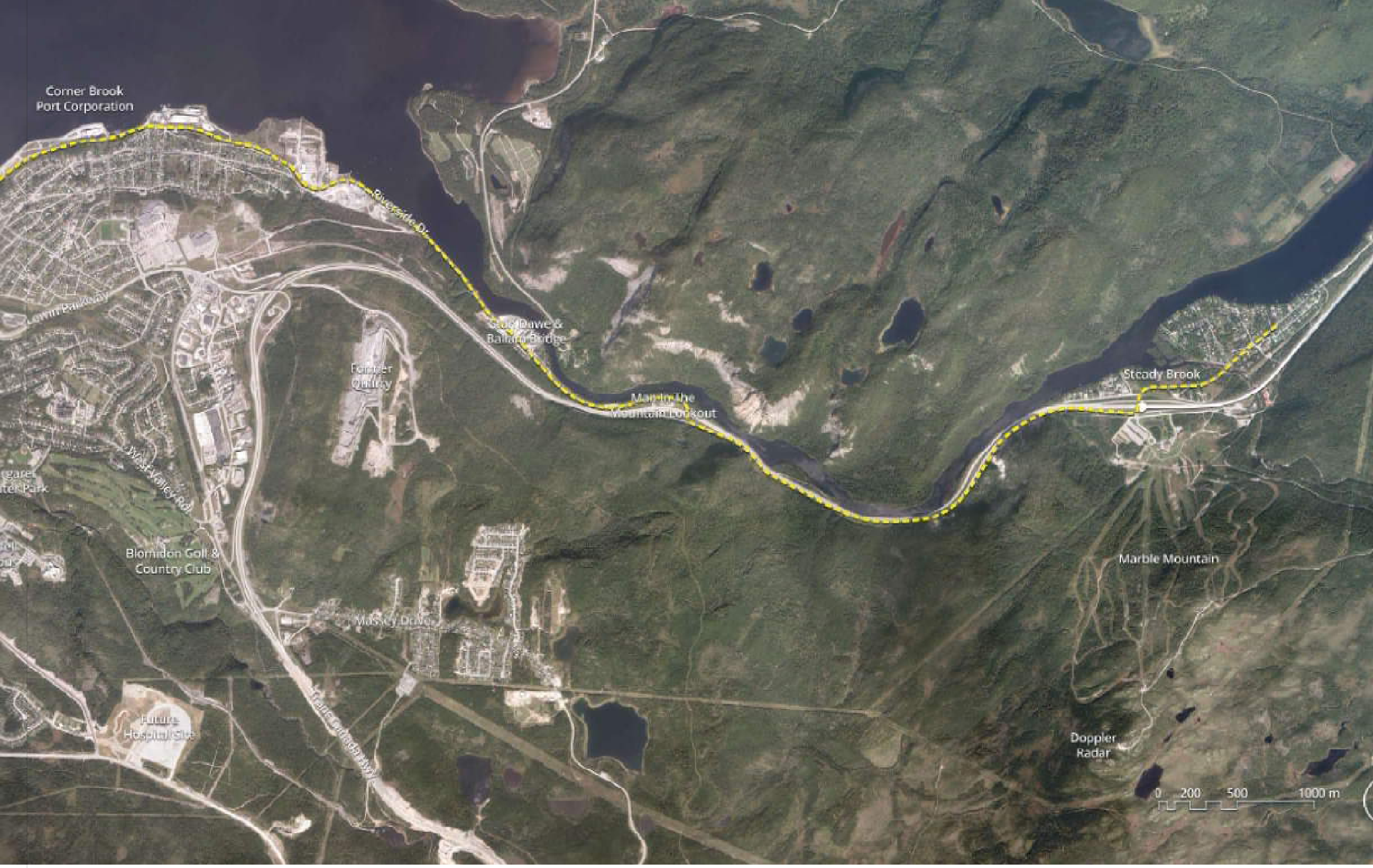
Serpentine River
Captain James Cook
Historic Site
Glynmill
Pond
Former Water
Supply Area
Blow Me Down
Cross Country Ski Park


Corner Brook
Port Corporation
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Ballam Bridge
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Quarry
Man in The
Mountain Lookout
Steady Brook
West Valley Rd
Blomidon Golf &
Country Club
Marble Mountain
Massey Drive
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Corner Brook
Port Corporation
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Glynmill Dawe &
Ballam Bridge
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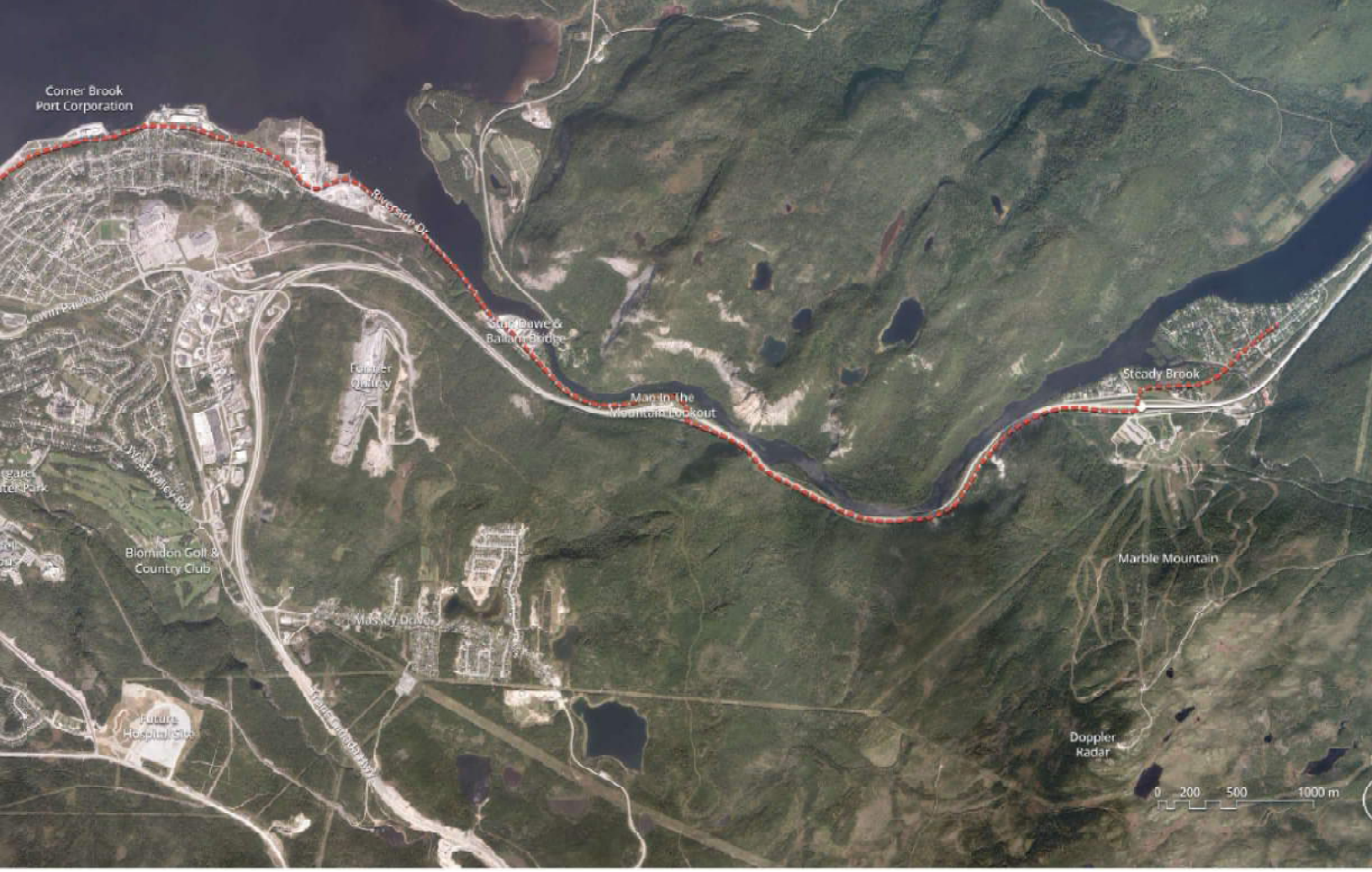
Quarry
Steady Brook
Man in The
Mountain Lookout
West Valley Rd
Blomidon Golf &
Country Club
Marble Mountain
Massey Drive
Trans Canada Hwy
Future
Hospital Site
Doppler
Radar
0 200 500 1000 m


Mount Moran
Bartlett's Point Park &
Bay of Islands Yacht Club
Proposed Route Option #5
Humber Arm
Serpentine Rd
Captain James Cook
Historic Site
Glynmill
Pond
Former Water
Supply Area
Rte 450
Blow Me Down
Cross Country Ski Park


Corner Brook
Port Corporation
Riverside Dr
Former
Quarry
Steady Brook
Marble Mountain
Blomidon Golf &
Country Club
Doppler
Radar
0 200 500 1000 m

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Refining the Options

Preliminary exploration resulted in three options being selected for further refinement. A SWOC analysis was performed to provide further evaluation of each option. A SWOC analysis is a planning tool which provides an objective analysis of an option based on a number of variables, called Strengths, Weaknesses, Opportunities, and Challenges. Strengths and Weaknesses are items which the City has a degree of control over and therefore may be able to change to improve a situation. Opportunities and Challenges are external items which the City does not control where special strategies or partnerships may be required. The three options and SWOC analyses were colour-coded and then presented to the public to receive further feedback.

Route	Description
Option #1: Cultural Connector	This option aims to maximize connections to prominent attractions within the city. It connects the T'Railway in Mount Moriah to the west of the city and Steady Brook to the east. It utilizes sections of the existing T'Railway, municipal sidewalks downtown, sections of the Corner Brook Stream Trail, and existing mountain biking and snowmobile routes. It avoids the TCH by following established trail routes around the top of Marble Mountain and reconnects with the TCH at the snowmobile staging area by the Marblewood Village Resort.
Option #2: Urban/Rural Hybrid	This option aims to provide a mix of urban and rural scenery. It connects the T'Railway in Mount Moriah to the west of the city and Steady Brook to the east. It utilizes sections of the existing T'Railway, municipal sidewalks downtown, sections of the Corner Brook Stream Trail, and existing mountain biking and snowmobile routes. It avoids the TCH by following established trail routes around the top of Marble Mountain and reconnects with the TCH at the snowmobile staging area by the Marblewood Village Resort.
Option #3: Waterfront Route	This option aims to maximize exposure to the dramatic views of the Bay of Islands by following the waterfront. It connects the T'Railway in Mount Moriah to the west of the city and Steady Brook to the east. It utilizes sections of the existing T'Railway, municipal sidewalks along Riverside Drive, and the shoulder of the Trans Canada Highway. It also features connections to Bartlett's Point Park, Captain James Cook Historic Site, and a downtown loop that follows Park and West Streets.

Members of the public discuss the three options with the project team at a drop-in session on August 27th

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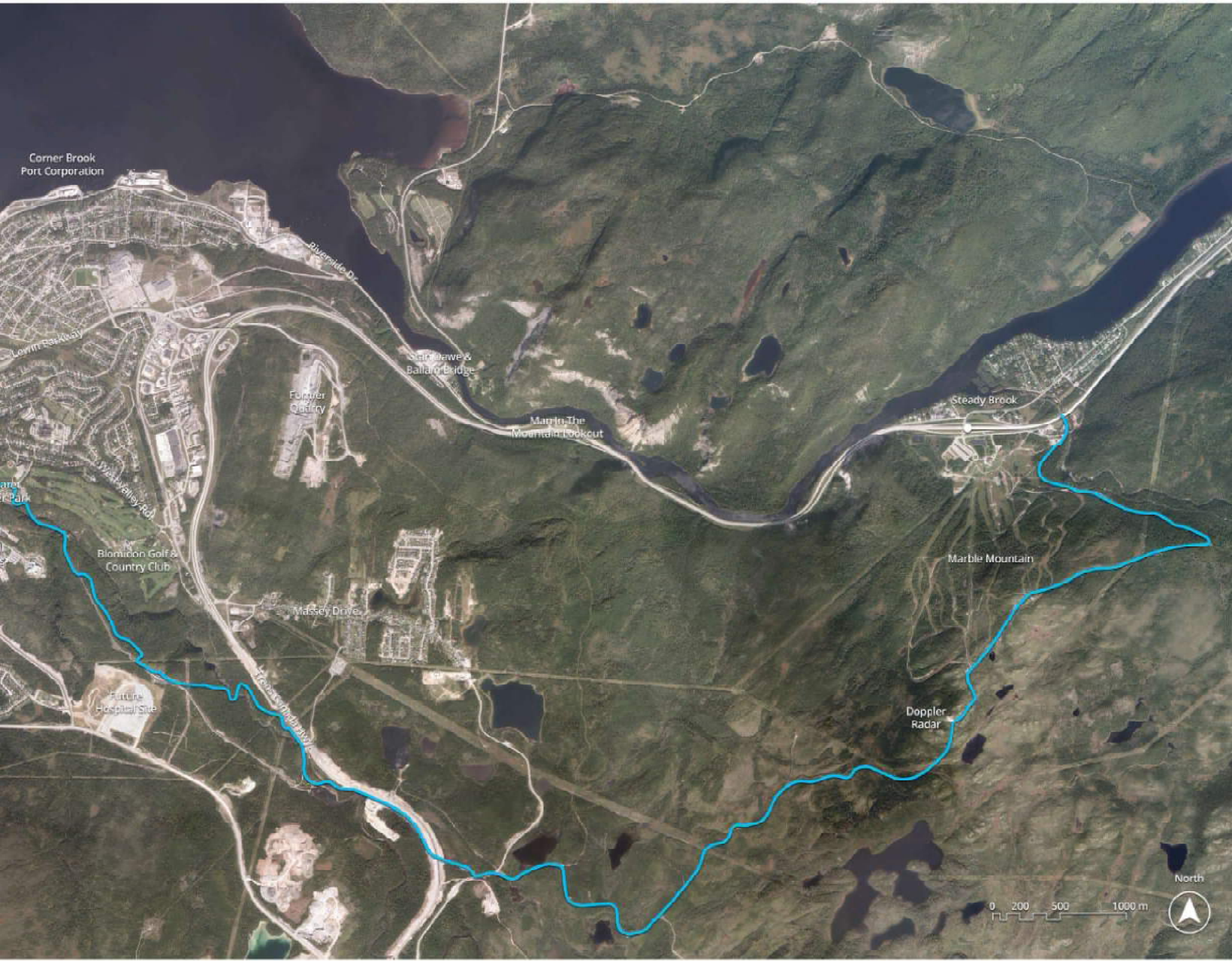

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Strengths

- Utilizes existing T'Railway rights-of-way and municipal sidewalks, reducing the need to develop new trails or disturb existing landscapes; T'Railway upgrades required are relatively minor
- Utilizes existing established trails such as the Glynmill Inn Pond Trail, the Gorge Trail, the Pipeline Trail, and mountain bike/snowmobile routes
- The existing right-of-way of the snowmobile trail is wide, well-graded, and compacted, representing a good starting point for a multiuse trail
- Provides optional connection to Bartlett's Point Park and the Yacht Club
- Captures spectacular views of the Bay of Islands and the Long Range Mountains
- Passes by site of historical train wreck which could become an interesting interpretive feature
- Connection to Captain James Cook Historic Site
- Provides direct access to the downtown core via Broadway
- Trail easily accessible via neighbourhoods in Curling
- Provides connection to new hospital site
- Sections along the Corner Brook Stream Trail are well-maintained, signed, and contain lighting, benches, and waste bins
- Captures sweeping views of Steady Brook and Humber Valley from Doppler Radar site
- This option requires the fewest street crossings

Weaknesses

- Requires culvert or repair of collapsed bridge east of Hilliards Road on T'Railway
- Grade at end of Coopers Road requires attention to make connection to Bartlett's Point Park
- Pinch point east of Griffin Drive/Curling Street intersection will require narrow sidewalk along busy roadway
- Barry Place, Star Street, Barretts Road, and Brosnan Street do not currently have sidewalks
- Existing grades through Curling are unlikely to comfortably accommodate pedestrians and cyclists
- New section of trail (+/3.7km) required to connect Curling to Captain Cook site
- Broadway is not able to accommodate snowmobiles
- Very little wayfinding signage exists on this route outside of the Corner Brook Stream
- The existing mountain bike trail may not currently be able to accommodate snowmobiles; alternate motorized route may be needed
- Significant grade change from Captain Cook site to Broadway requires careful planning, erosion control, and multiple switchbacks
- Users must use the underpass near the Water Treatment Facility; no existing sidewalk
- Approach to Doppler site from the southwest is problematic due to areas of deep, wet bogs; this section may also prove challenging for an average trail user
- Current zoning in the areas east of the TCH permit trails as a discretionary use only

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Opportunities

- Trail route could be tied into Participark, Grenfell Campus, the LTC, and the Pepsi Centre
- Connecting to the Corner Brook Stream Trail would expand the Great Trail's reach and appeal to residents and tourists
- There is a general desire for improved alternative transportation options
- Corner Brook has an enthusiastic outdoor community
- Corner Brook has been named the best place to live in Atlantic Canada for active living
- Corner Brook is the hub and regional service centre for western Newfoundland
- This route supports the Corner Brook Stream Development Corporation's Master Plan
- This route supports the objectives of the City's Integrated Municipal Sustainability Plan
- Year-round tourism potential (hikers/cyclists during summer, snowmobilers/skiiers during winter)
- West Coast Cycling Association can assist with further trail development and implementation
- Old hydro line corridors in area east of TCH may present an opportunity for more straightforward trail development

Challenges

- Section of trail from Curling to Captain Cook Historic Site passes through developable lands
- Sections of the trail (the existing snowmobile trails around the Doppler and Marble Mountain) fall outside of City limits
- Agreements between stakeholder groups are required to accommodate this route, as sections utilize existing mountain bike, snowmobile, and Corner Brook Stream trails; multiple stakeholders means multiple priorities
- Winter activities such as snowclearing, runoff, and salt spray may deter some users on the urban portions of the trail route (downtown)
- Bicycles are currently not allowed on Corner Brook Stream Trails
- Non-favourable perceptions of the view of the mill
- Feedback from the Western Sno-Riders and the NL Snowmobile Federation has not yet been received
- Consultation with Environment Canada for access around the Doppler site

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Strengths

- Utilizes existing T'Railway rights-of-way and municipal sidewalks, reducing the need to develop new trails or disturb existing landscapes; T'Railway upgrades required are relatively minor
- Utilizes existing established trails such as the Glynmill Inn Pond Trail, the Curry Trail, the Ginger Route, and snowmobile routes
- The existing right-of-way of the snowmobile trail is wide, well-graded, and compacted, representing a good starting point for a multiuse trail
- Provides optional connection to Bartlett's Point Park and the Yacht Club
- Captures spectacular views of the Bay of Islands and the Long Range Mountains
- Passes by site of historical train wreck which could become an interesting interpretive feature
- Connection to Corner Brook City Hall
- Captures city views from the top of the Curry Trail and the Doppler Radar
- Sections along the Corner Brook Stream Trail are well-maintained, signed, and contain lighting, benches, and waste bins

Weaknesses

- Requires culvert or repair of collapsed bridge east of Hilliards Road on T'Railway
- Grade at end of Coopers Road requires attention to make connection to Bartlett's Point Park
- Pinch point east of Griffin Drive/Curling Street intersection will require narrow sidewalk along busy roadway
- Barry Place, Star Street, and St. Aiden's Road do not currently have sidewalks
- Sidewalk in front of mill requires upgrading
- Trail crosses entrances to parking lots in some downtown areas
- Downtown streets not able to accommodate snowmobiles
- Existing trail widths may not be able to accommodate multiple uses
- Very little wayfinding signage exists on this route outside of the Corner Brook Stream
- The rural portion of this route may prove challenging for an average trail user
- The existing mountain bike trails may not currently be able to accommodate snowmobiles; alternate motorized route may be needed
- Significant grade change on mountain bike trails
- Users must use the Massey Drive underpass
- Confederation Drive, Massey Drive, and Harveys Road do not currently have sidewalks
- New section of backcountry trail (+/1.0km) required to connect existing mountain bike to snowmobile trails
- Current zoning in the areas east of the TCH permit trails as a discretionary use only

Opportunities

- Connecting to the Corner Brook Stream Trail would expand the Great Trail's reach and appeal to residents and tourists
- There is a general desire for improved alternative transportation options
- Corner Brook has an enthusiastic outdoor community
- Corner Brook has been named the best place to live in Atlantic Canada for active living
- Corner Brook is the hub and regional service centre for western Newfoundland
- This route supports the objectives of the City's Integrated Municipal Sustainability Plan
- Year-round tourism potential (hikers/cyclists during summer, snowmobilers/skiiers during winter)
- Bringing the trail through Massey Drive creates opportunity for an intermunicipal partnership and resource sharing
- West Coast Cycling Association can assist with further trail development and implementation
- Old hydro line corridors in area east of TCH may present an opportunity for more straightforward trail development

Challenges

- Sections of trail fall within the Massey Drive town boundary and will require a partnership to implement and maintain the trail
- Sections of the trail (the existing snowmobile trails around the Doppler and Marble Mountain) fall outside of City limits
- Agreements between stakeholder groups are required to accommodate this route, as sections utilize existing mountain bike, snowmobile, and Corner Brook Stream trails; multiple stakeholders means multiple priorities
- Winter activities such as snowclearing, runoff, and salt spray may deter some users on the urban portions of the trail route (downtown)
- Bicycles are currently not allowed on Corner Brook Stream Trails
- Non-favourable perceptions of the view of the mill
- Feedback from the Western Sno-Riders and the NL Snowmobile Federation has not yet been received
- Consultation with Environment Canada for access around the Doppler site

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Strengths

- Utilizes existing T'Railway rights-of-way and municipal sidewalks, reducing the need to develop new trails or disturb existing landscapes; T'Railway upgrades required are relatively minor
- Provides optional connections to Bartlett's Point Park, the Yacht Club, Captain James Cook Historic Site, and the downtown core
- Captures spectacular views of the Bay of Islands and the Long Range Mountains
- Passes by site of historical train wreck which could become an interesting interpretive feature
- Connection to the Port Building and the Railway Society on Riverside Drive
- Connection to the Man in the Mountain Lookout
- Relatively easy grade enhances accessibility and inclusiveness
- Forms a direct and expedient commuter route to Steady Brook
- ATV route also follows Riverside Drive, forming an important active transportation link
- Maintenance requirements are in line with current capabilities of the City and Corner Brook Stream Development Corporation
- Proximity to cruise ship port brings visitors directly onto the trail route

Weaknesses

- Requires culvert or repair of collapsed bridge east of Hilliards Road on T'Railway
- Grade at end of Coopers Road requires attention to make connection to Bartlett's Point Park
- Pinch point east of Griffin Drive/Curling Street intersection will require narrow sidewalk along busy roadway
- Barry Place, Star Street, and St. Aiden's Road do not currently have sidewalks
- Sidewalk in front of mill requires upgrading
- Sidewalks on Riverside Drive require upgrading; new sidewalks needed in places
- Several industrial lots on Riverside Drive require screening
- Little existing streetscaping such as benches, lighting, waste bins, etc.
- High speed traffic on the TCH will require special attention to provide a safe trail route
- Trail is still required to follow route of the TCH from Man in the Mountain Lookout to Steady Brook; creating a safe and enjoyable pedestrian experience will be challenging
- Very little wayfinding signage exists on this route
- Significant grade change from Captain Cook site to Broadway requires careful planning, erosion control, and multiple switchbacks
- This option requires the most street crossings

Opportunities

- The waterfront in general presents tremendous potential as a pedestrian-oriented development
- Several sites along Riverside Drive present opportunities for adaptive reuse or new development
- There is a general desire for improved alternative transportation options
- Possibility of tying into the Corner Brook Stream Trail network would expand the Great Trail's reach and appeal to residents and tourists
- Corner Brook has an enthusiastic outdoor community
- Corner Brook has been named the best place to live in Atlantic Canada for active living
- Corner Brook is the hub and regional service centre for western Newfoundland
- This route supports the Corner Brook Stream Development Corporation's Master Plan
- This route also supports the objectives of the City's Integrated Municipal Sustainability Plan and the Recreation Master Plan
- Year-round tourism potential (hikers/cyclists during summer, snowmobilers/skiiers during winter)
- Possibility of installing a pedestrian bridge over the Humber River

Challenges

- Sections of Riverside Drive may fall within a designated flood risk zone
- Climate change may cause more frequent flooding events and rising water levels in the future
- The TCH falls under Provincial jurisdiction and may limit the City's ability to implement and maintain the trail
- Winter activities such as snowclearing, runoff, and salt spray may deter some users on the TCH and Riverside Drive
- Trail users may choose to bypass the downtown core
- Non-favourable perceptions of the view of the mill

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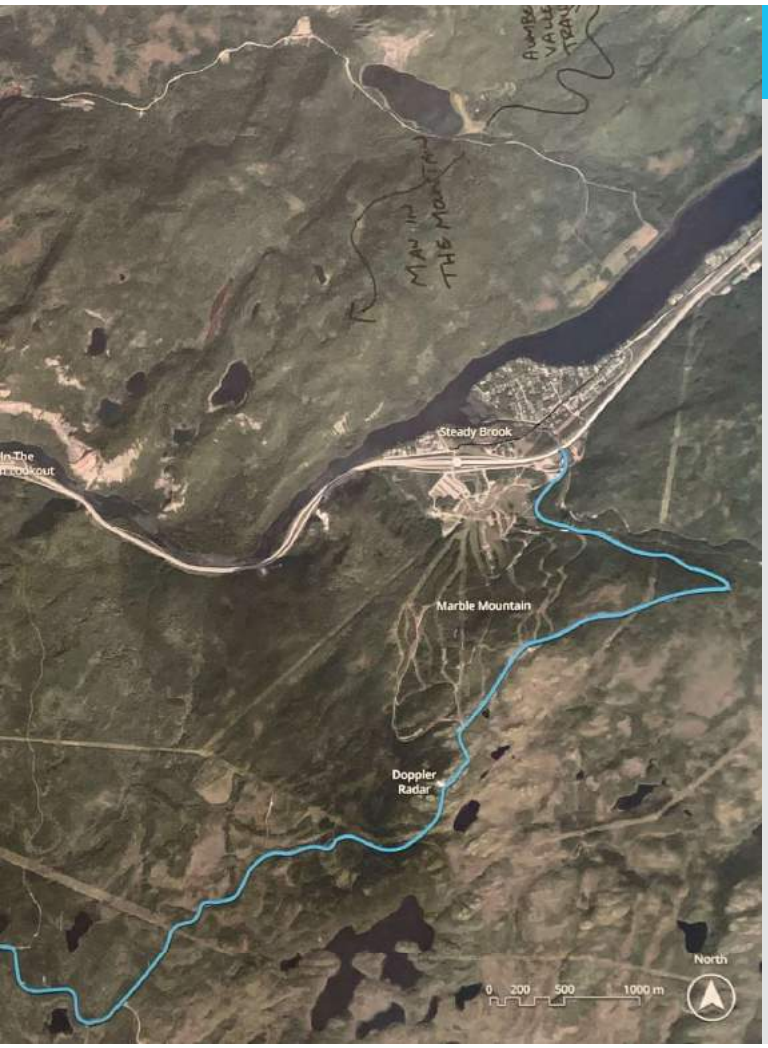
Public Feedback



Public Feedback on Trail Route Option #1

- *The new hospital will become a major employer for the area; it is good that this option provides a direct connection*
- *A connection should be considered to the Grenfell Campus as well as the long term care facility*
- *Be careful of ruining the experience on existing trails by introducing motorized vehicles*

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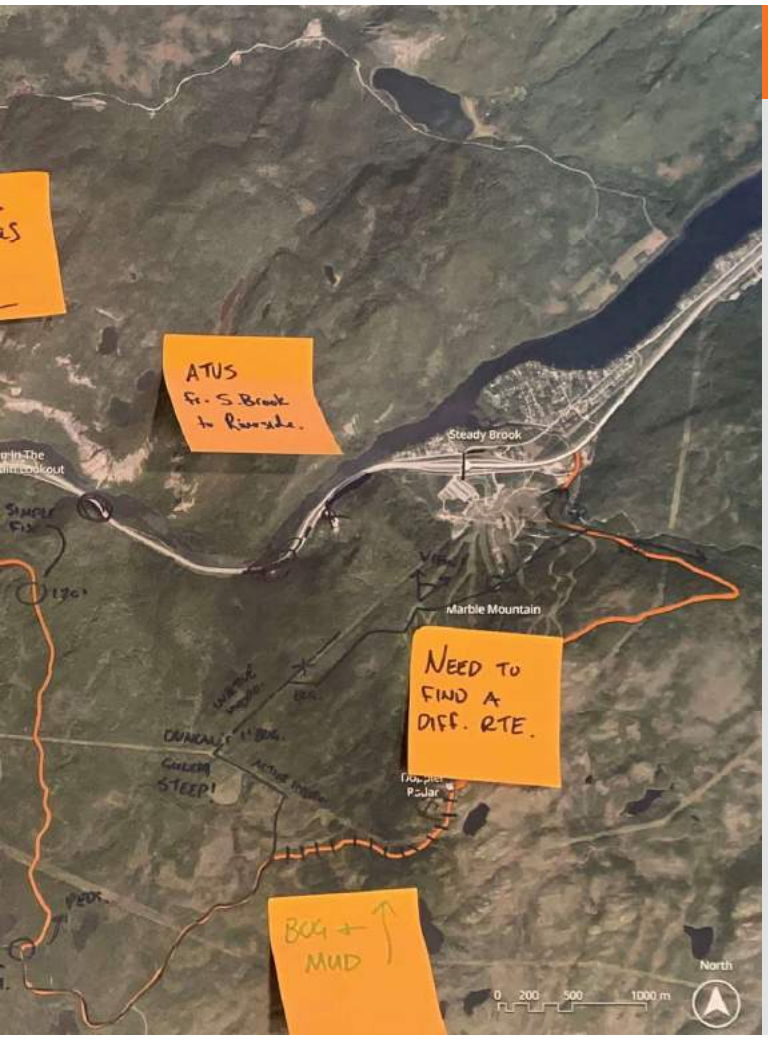

Public Feedback on Trail Route Option #2

- *This option is the least preferable of the three*
- *Using the existing mountain bike trails may ruin those trails*
- *Using the Curry Trail and the Ginger Route as shown would be considered a weakness, not a strength*
- *This option misses the need to link to the future hospital site as well as the Grenfell Campus and the long term care facility*
- *Portion of this option around the Doppler passes through several areas that are extremely boggy and steep and may not be suitable for trail development*
- *There may be a need to split user groups in some places; pedestrians versus motorized vehicles*

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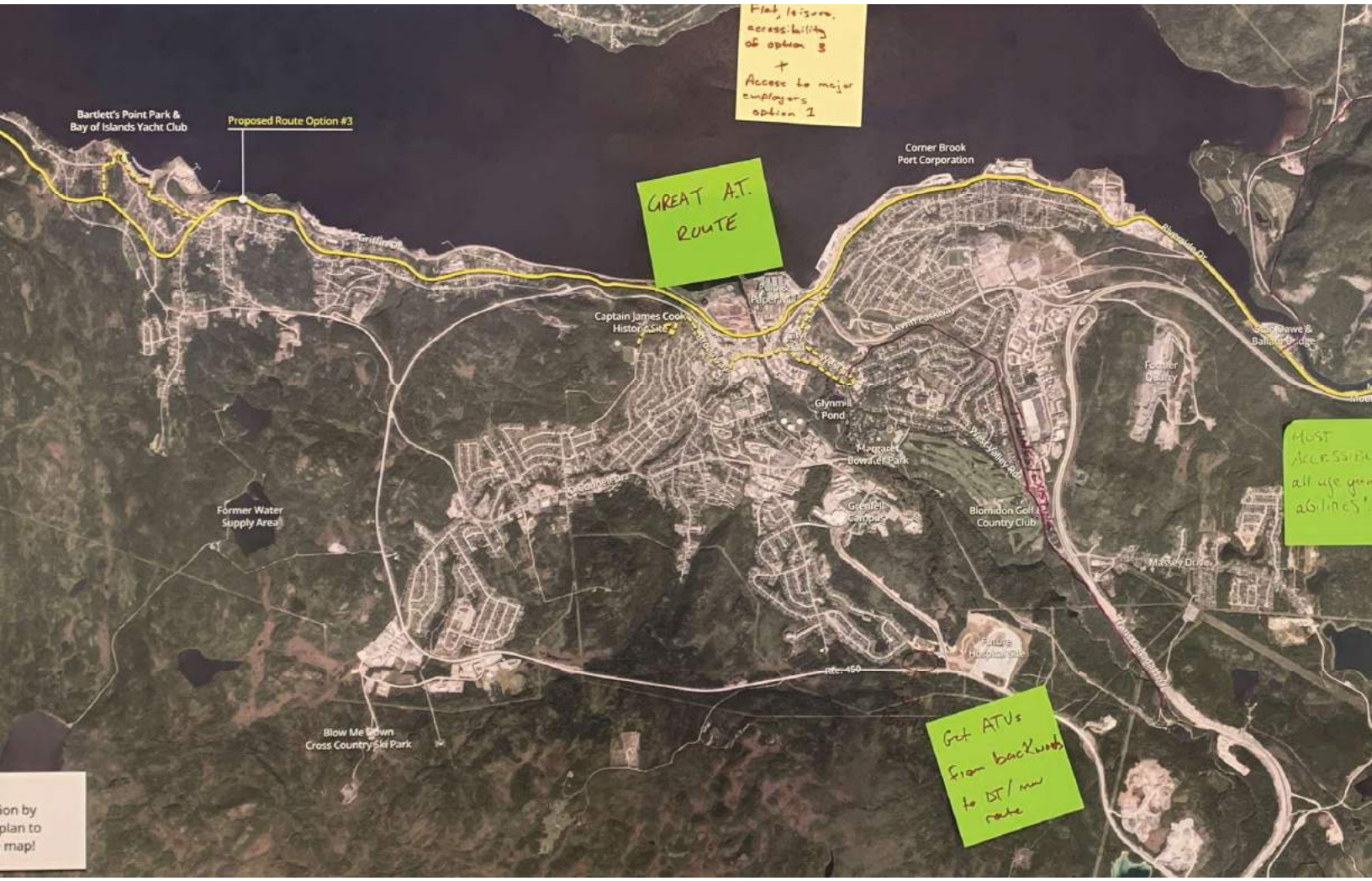

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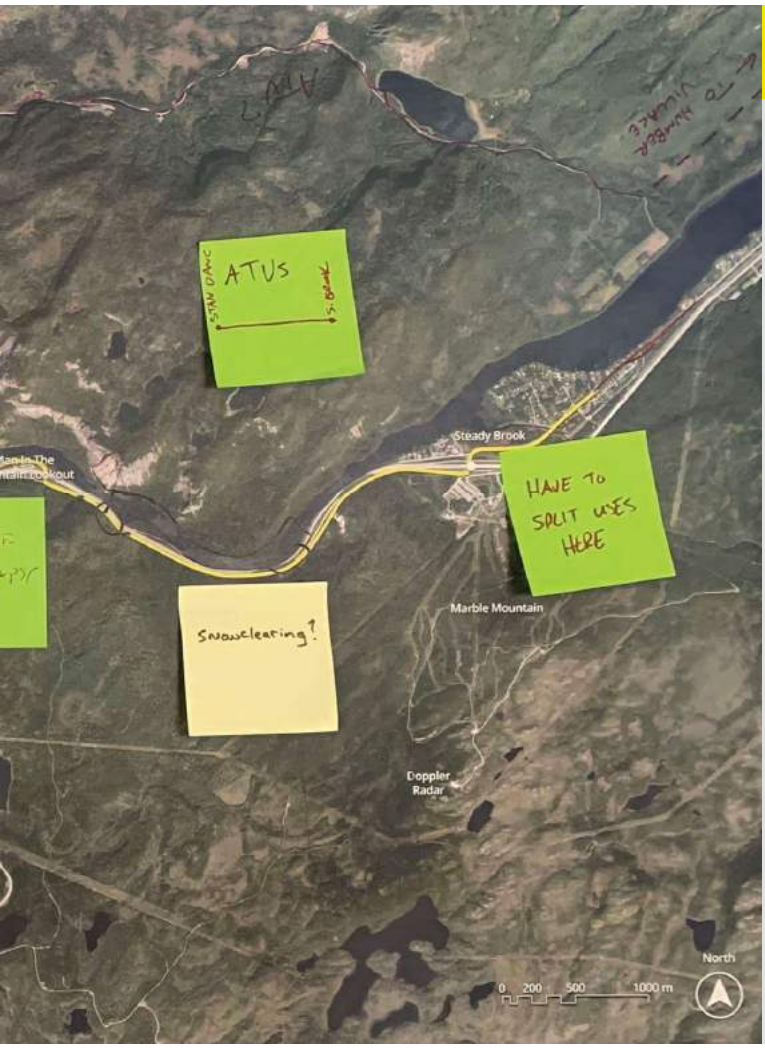
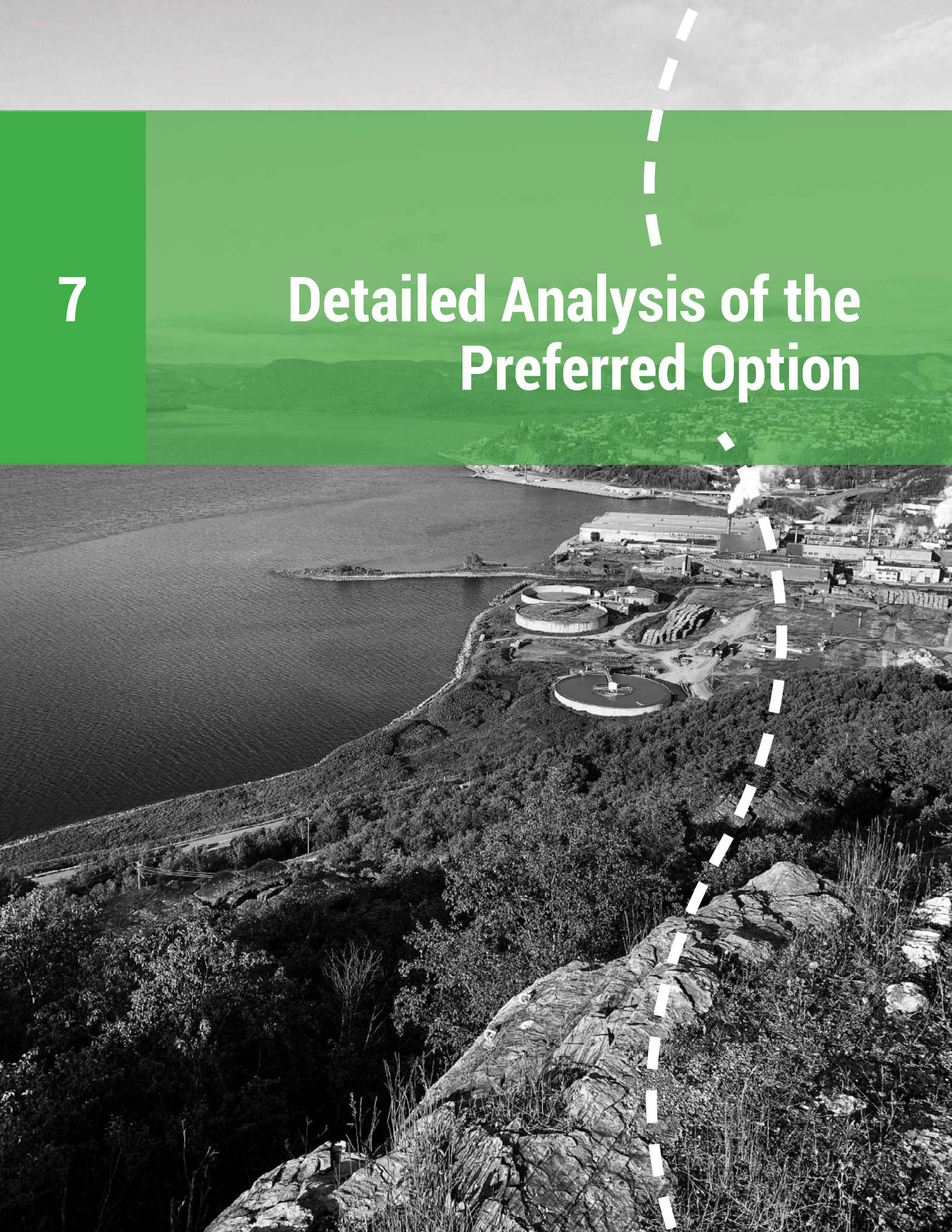


Public Feedback on Trail Route Option #3

- *This option is the most preferable of the three*
- *This is a relatively flat trail route which makes it more accessible, leisurely, and appealing to all ages and abilities*
- *Better access to major employers (such as the new hospital site) is still needed*
- *This route represents an excellent active transportation route*
- *Three separate "Great Trails" should be explored; one each for ATV users, snowmobilers, and walkers/ cyclists to reduce conflicts between users on each*
- *Snowclearing operations along the TCH may interfere with this trail route during winter*
- *This option should be called the "Bay-to-Brook" route*
- *ATVs need to be able to get from wooded areas south of the city to downtown core*

7 Detailed Analysis of the Preferred Option



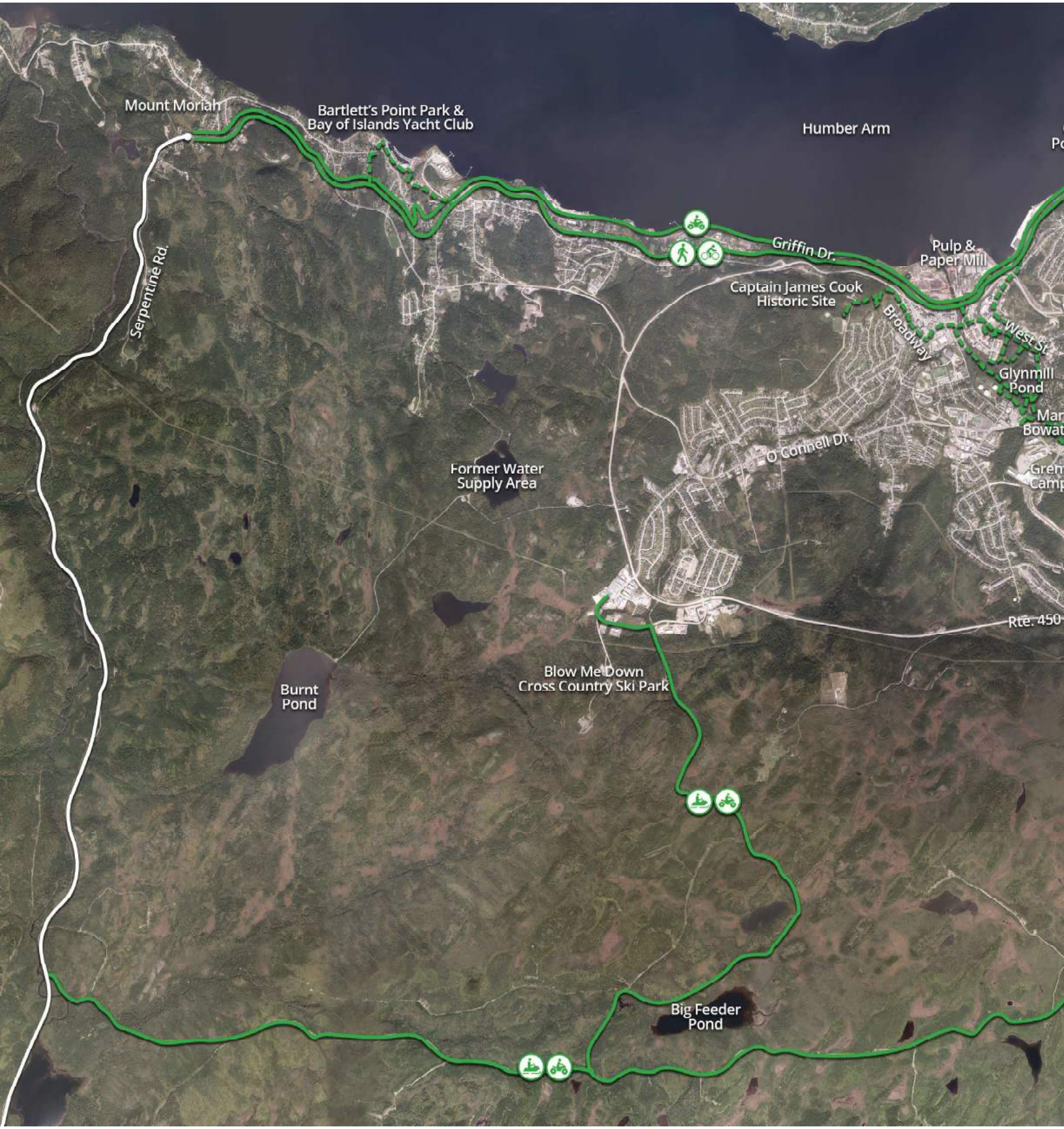
The Bay-to-Brook Trail

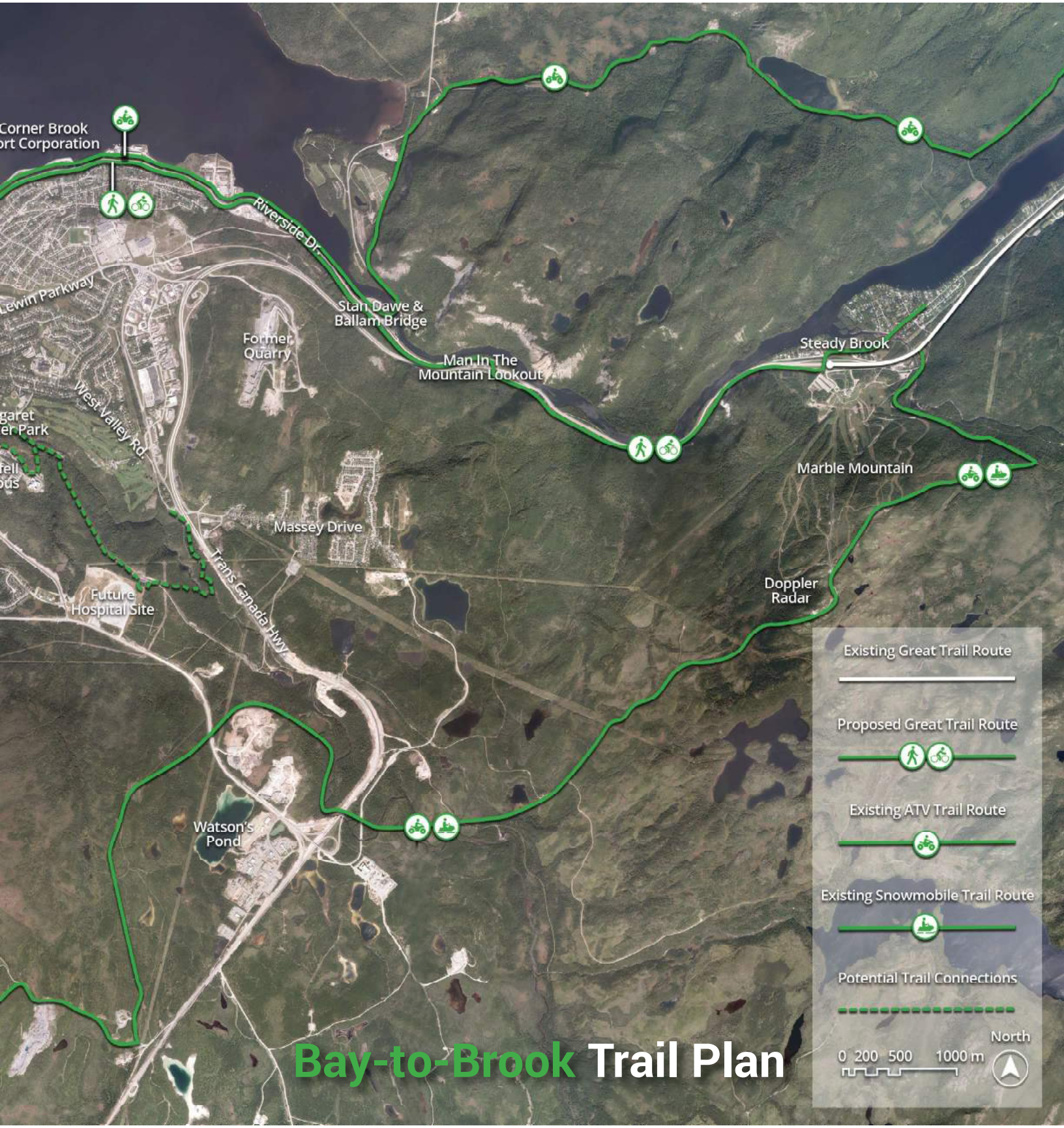
All three potential trail route options presented advantages and disadvantages, as summarized in the previous SWOC analyses. This is not uncommon when reviewing development scenarios; it is rare that a single option is able to accommodate every potential use or program item. One of the biggest challenges presented by all three scenarios was the ability to meet the needs of both motorized (ATV and snowmobile) and non-motorized (walkers and cyclists) users for the duration of the trail. The potential for conflict between user groups was identified very early during consultations. In fact, two of the key stakeholder groups, IATNL and The Great Trail, who both have extensive experience in developing trails, identified this as a significant challenge. Further, upon compiling mapping data of existing trails in the Corner Brook area, it was evident that an extensive network of trails already exists for motorized users. This is unsurprising given Corner Brook's position as a hub for recreational ATV and snowmobile activity in the province. As such, to reduce the possibility of user conflict and to improve trail functionality, it was determined that separate trail route options for both motorized and non-motorized user groups would be provided.

For the purposes of this study, both ATVs and snowmobiles have been accommodated by existing trails. Some of these trails are already well-developed, such as the new ATV route on Riverside Drive, while others are currently being reviewed for upgrades, such as the snowmobile trail near Watson's Pond. The focus of this study therefore shifted to become about finding the ideal route for the non-motorized user group. Review of the SWOC analyses as well as feedback received during the second round of public consultations revealed that Option 3 was the preferred trail route for this user group. The accessibility of this route, its ability to appeal to the widest possible number of users, as well as its function as an active transportation corridor between Corner Brook and Steady Brook made it the popular choice.

This section of the report provides detailed analysis of the preferred trail route, cleverly coined by one resident as the "Bay-to-Brook Trail" due to its linking of the Bay of Islands and Steady Brook. Detailed analysis of this route will be based on the following:

1. Physical Trail Characteristics
2. Long-Term Sustainability
3. Probable Costs


Mount Moriah
Bartlett's Point Park &
Bay of Islands Yacht Club
Humber Arm
Griffin Dr.
Pulp &
Paper Mill
Captain James Cook
Historic Site
Broadway
West St.
Glynmill
Pond
O Connell Dr.
Former Water
Supply Area
Rte. 450
Blow Me Down
Cross Country Ski Park
Burnt
Pond
Big Feeder
Pond
Serpentine Rd.



Bay-to-Brook Trail Plan

A Note on the Trans-Canada Highway

As seen on the previous map, there is a portion of the proposed trail route (from the overpass by the Man in the Mountain lookout eastward to Steady Brook) that follows the Trans-Canada Highway (TCH). This section of trail is envisioned to utilize part of the shoulder of the eastbound lane on the south side of the highway.

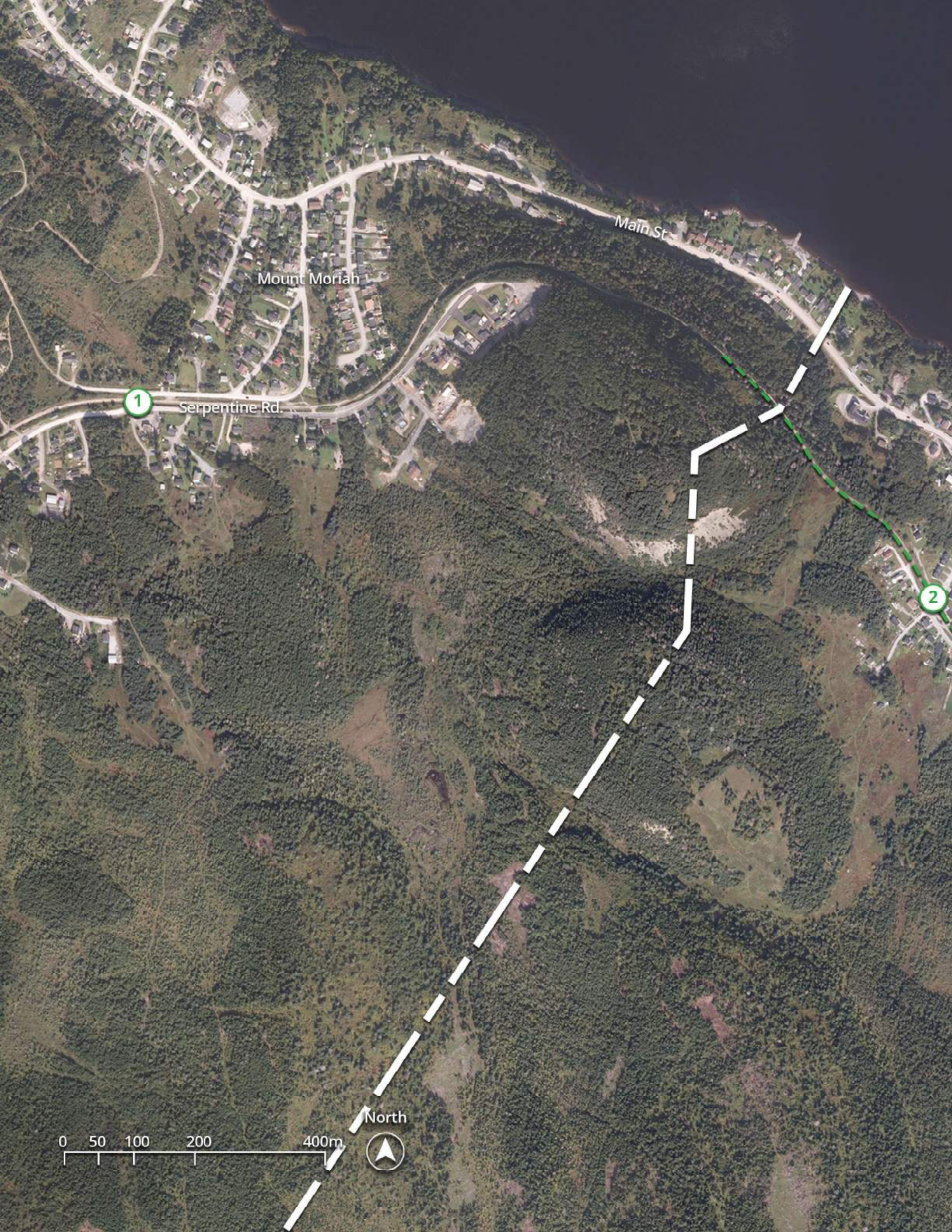
The right-of-way in this section is narrow and occupied almost entirely by the highway in places. In two cases in particular, existing rock faces on the south side of the highway and the proximity of the Humber River on the north create pinch points with little to no room for off-road trail development.

Several alternative routes were explored as seen in previous sections of this report, including a route around Marble Mountain using existing snowmobile trails. This option was not preferred as it was deemed to be too challenging for some users, potentially costly to develop, and impractical as a commuter route. Other options were explored preliminarily and omitted due to concerns with development costs, disturbance or encroachment on natural areas, or practicality. These included a cantilevered section of trail over the Humber River, a pedestrian bridge across the Humber River, or widening the shoulder of the westbound lane on the north (river) side of the highway. Ultimately, it was the study team's preference to choose the option that was most practical, accessible to the greatest number of users, and required minimal disturbance to pristine natural areas.

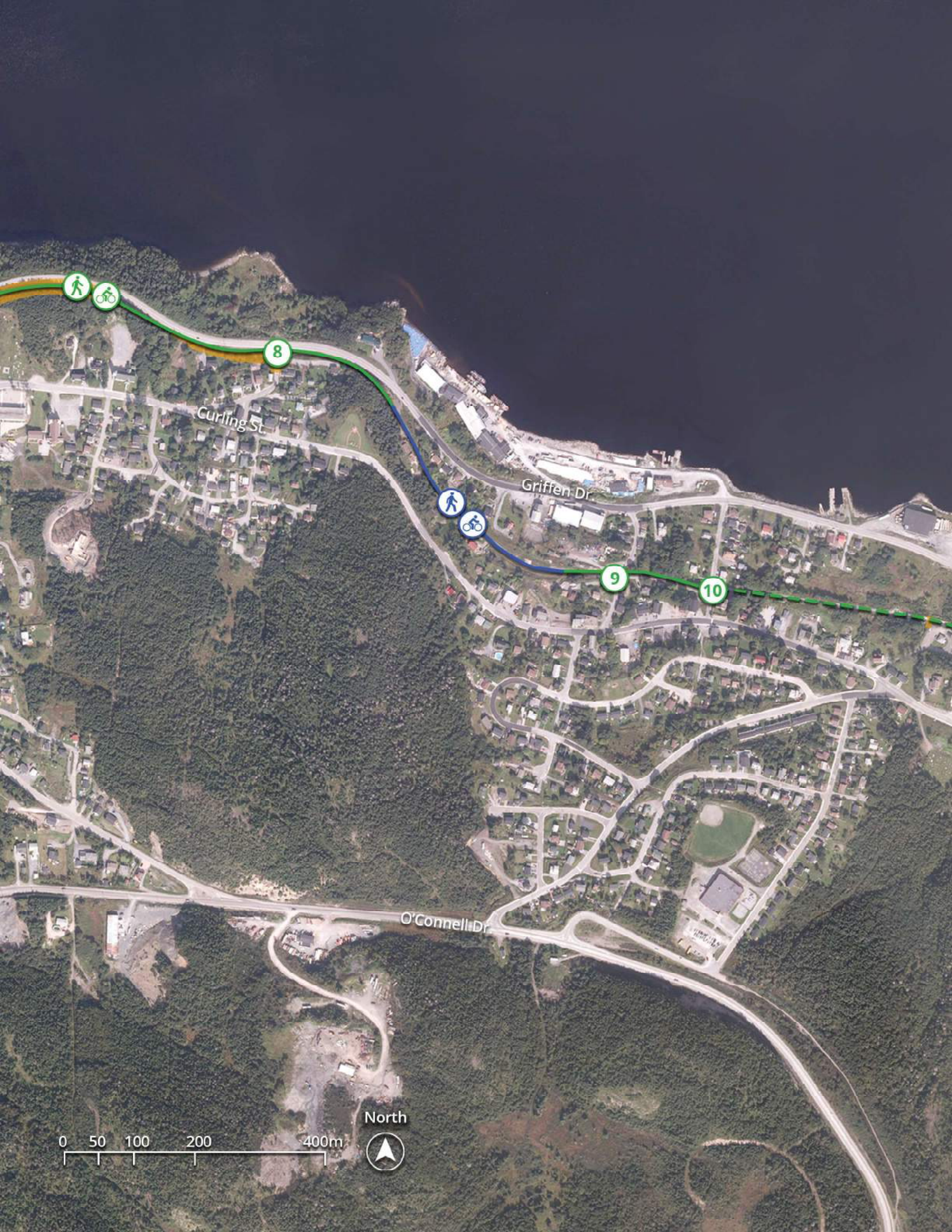
An important consideration for the trail route along this section will be user safety due to the high vehicle speeds on the TCH. Vertical separation (as conceptually shown on the following page) will be required between traffic lanes and the shoulder to protect trail users. While the primary objective of these barriers is to provide pedestrian safety, they need not be utilitarian. As shown, they can be painted or adorned with decorative railings to soften their visual impact. This will be especially important given the context in the picturesque Humber Valley.

For this section of trail to be realized, close collaboration with the Department of Transportation and Works will be necessary as the TCH right-of-way falls entirely within Provincial jurisdiction. Safety, road maintenance (snowclearing) operations, rock fall, and other potential concerns need to be considered. Preliminary conversations with the Deer Lake DTW office were positive but reiterated the need for further discussion. It is recommended that the City prioritize these discussions with DTW as a next step.

Conceptual visualization along the TCH in Humber Valley

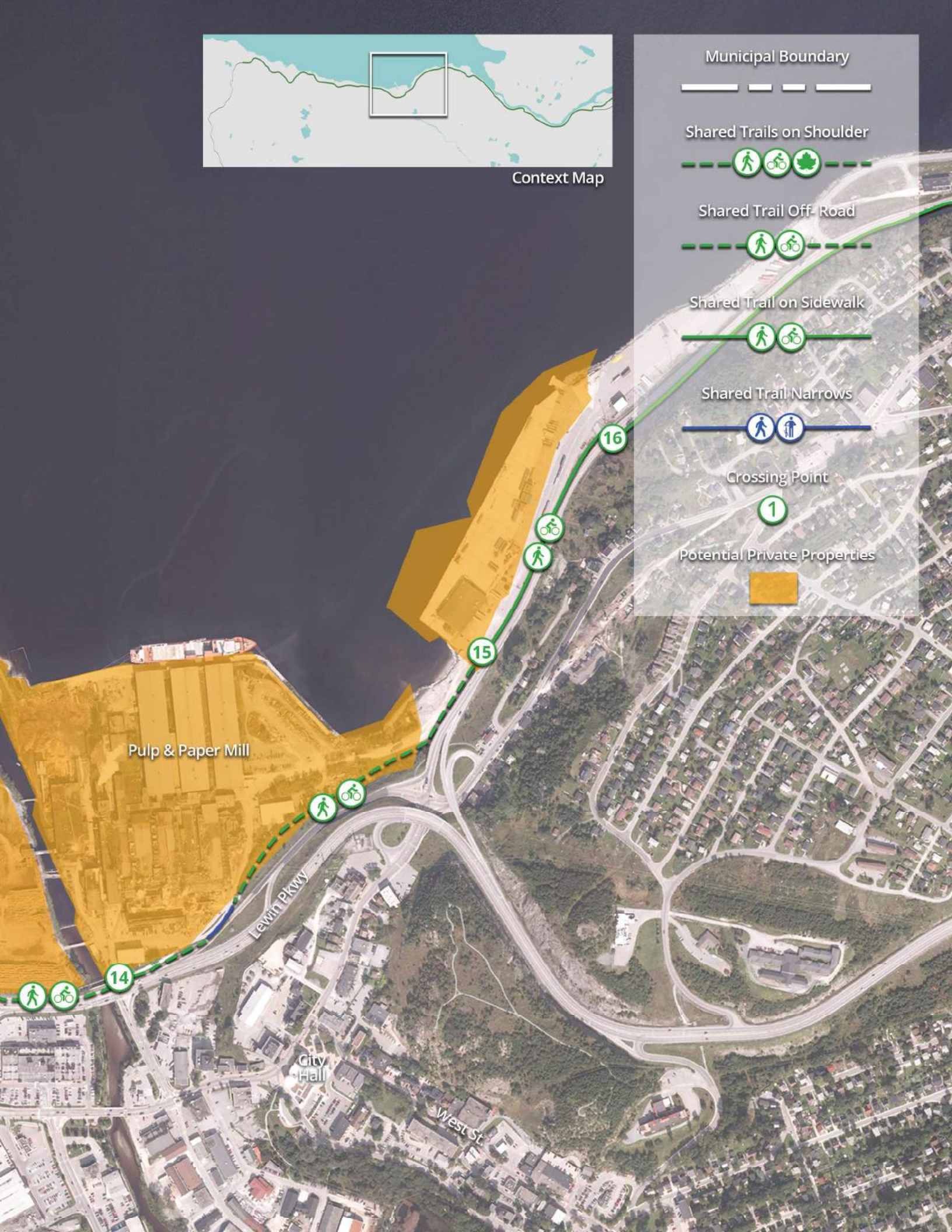

Main St
Mount Moriah
1
Serpentine Rd.
2
North
0 50 100 200 400m

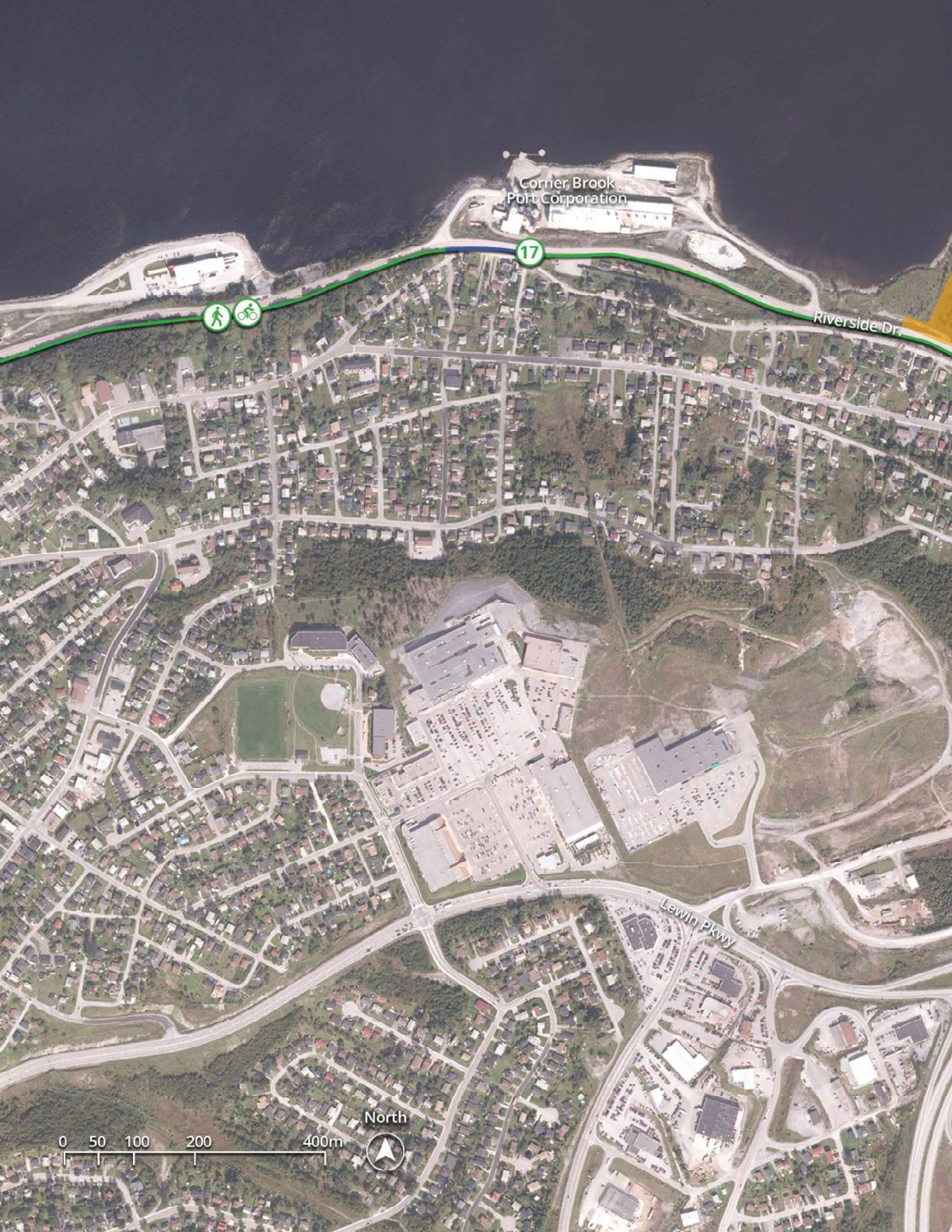

Context Map
Municipal Boundary
Shared Trails on Shoulder
Shared Trail Off- Road
Shared Trail on Sidewalk
Shared Trail Narrows
Crossing Point
Potential Private Properties
Bartlett's Point Park &
Bay of Islands Yacht Club
Petries St.
O'Connell Dr.
Petries St.
New Bridge Over
Petries Brook
1
3
4
5
6
7


8
Curling St
Griffen Dr
9
10
O'Connell Dr
North
0 50 100 200 400m


Context Map
Municipal Boundary
Shared Trails on Shoulder
Shared Trail Off- Road
Shared Trail on Sidewalk
Shared Trail Narrows
Crossing Point
1
Potential Private Properties
Griffen Dr.
Curling St.
11
12
Lewin Pkwy
Captain James Cook Historic Site


Griffin Dr
Lewin Pkwy
Captain James Cook
Historic Site
Broadway
13
North
0 50 100 200 400m


Context Map
Municipal Boundary
Shared Trails on Shoulder
Shared Trail Off- Road
Shared Trail on Sidewalk
Shared Trail Narrows
Crossing Point
1
Potential Private Properties
16
15
14
Pulp & Paper Mill
Lewin Pkwy
City Hall
West St

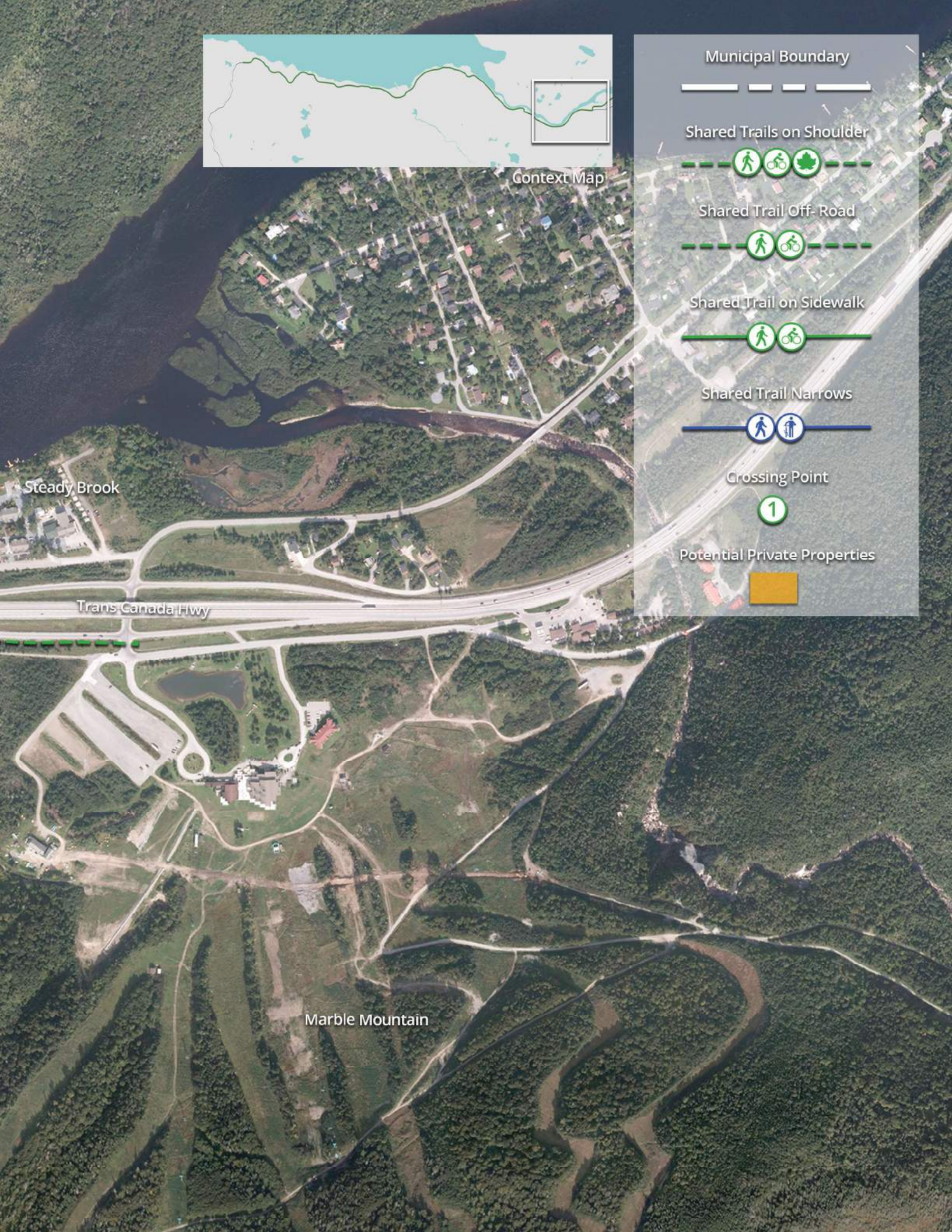

Corner Brook
Port Corporation
17
Riverside Dr.
Lewin Pkwy
North
0 50 100 200 400m


Context Map
Municipal Boundary
Shared Trails on Shoulder
Shared Trail Off- Road
Shared Trail on Sidewalk
Shared Trail Narrows
Crossing Point
1
Potential Private Properties
18
Trans Canada Hwy
Riverside Dr


Riverside Dr
Stan Dawe
19
Ballam Bridge
Trans Canada Hwy
20
21
Man in the Mountain Lookout
North
0 50 100 200 400m


Context Map
Municipal Boundary
Shared Trails on Shoulder
Shared Trail Off- Road
Shared Trail on Sidewalk
Shared Trail Narrows
Crossing Point
1
Potential Private Properties
erpass
2
Humber River
Trans Canada Hwy


Trans Canada Hwy
North
0 50 100 200 400m


Context Map
Municipal Boundary
Shared Trails on Shoulder
Shared Trail Off- Road
Shared Trail on Sidewalk
Shared Trail Narrows
Crossing Point
1
Potential Private Properties
Steady Brook
Trans Canada Hwy
Marble Mountain

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Physical Trail Characteristics

Five physical trail characteristics have been selected for further evaluation; land use, typology, safety, amenities, and signage. The maps on the previous pages represent enlargements of the Bay-to-Brook Trail Plan and can be used to assist with reviewing each of these characteristics.

Land Use

Land use generally refers to the physical definition and delineation of land within the City, and the regulations which establish and control development on those lands. For this study, zoning, property ownership, and Crown Lands mapping was reviewed to assess what impact, if any, these designations may have on the development of the preferred trail route.

The table to the right illustrates all land use zones that the proposed trail route passes through based on City of Corner Brook zoning data as of September, 2019. All but two zones currently allow trails as a permitted or discretionary use. In the zones that do not currently allow trails (Cemetery and Residential/Commercial Mix), the proposed route follows established paths of travel along existing sidewalks, shoulders, or trails. The sections in question are along Griffin Drive, Barry Place, and Star Street.

Zoning Designation	Trail a Permitted Use?
Rural	Discretionary Use
Residential Medium Density	Yes
Open Space	Yes
Residential/ Commercial Mix	No, rezoning may be required
Cemetery	No, rezoning may be required
Environmental Conservation	Discretionary Use
Community Service	Yes
General Industrial	Discretionary Use
Waterfront Mixed Use	Yes

As shown in yellow on the previous maps, there are thirteen instances in which the proposed trail route seemingly passes through private property. This is based on City mapping data provided in July, 2019. At the time of this study, this information identified property boundaries but did not indicate ownership. The study team suspects agreements with some property owners may already be in place, as several instances where the trail encroaches already contain existing developed trails. The Mill property, for example, is one of the properties identified and currently contains a section of the Corner Brook Stream Trail. It is recommended that the City query these properties and, if necessary, approach property owners to negotiate agreements to permit trail development.

The Provincial Land Use Atlas was also used to assess Crown Land titles and applications along the proposed trail route. As of September, 2019, there were seventeen parcels that have Grants Issued or are Private Lands (see following table). These parcels either touch or completely encompass the proposed trail. It is worth noting that discussions with the Western Regional Lands Office suggested these titles may not be current; once a grant is issued, it is possible that land ownership may change, which may not be reflected by the Land Use Atlas database.

Status	Document Number
Issued - Grant	10007868
Issued - Grant	10015646
Issued - Grant	10019538
Issued - Grant	10016375
Issued - Grant	10006473
Issued - Grant	10005958
Issued - Grant	10010296
Issued - Grant	10018375
Issued - Grant	10016993
Issued - Grant	10015271
Issued - Grant	10018375
Issued - Grant	10011351
Issued - Grant	10020569
Issued - Grant	10010457
Issued - Grant	10020219
Private Land	R10_F1339
Private Land	R10_F0879

Trail Typology

Trail typologies vary along the proposed trail route to respond to adjacent conditions and the built environment. The following maps show the four main types proposed.

Shared trails are used by multiple user groups. As ATVs and snowmobiles have been accommodated on separate respective trails, shared trails are therefore intended to primarily serve pedestrians, cyclists, skateboarders, rollerbladers, and longboarders. There are two main types of shared trails utilized on the proposed route.

Shared off-road trails refer to trails that do not follow roads, but instead occupy natural areas. Examples include the existing T'Railway or the section of developed trail that follows the slope above Griffin Drive. These trails are typically constructed of compacted granular material and should be wide enough to allow pedestrian movement in two directions. 3.0-metre wide trails, when combined with vegetation management at the edges, form a comfortable corridor that provides ample daylight and an improved sense of security for trail users. It is recommended that all new trails be constructed to this same standard, as shown in the following illustration.

There are several sections of the proposed route that follow roads due to the trail passing through well-developed and established parts of the city. Current road widths in many of these cases do not allow installation of dedicated on-street bike lanes, so infrastructure such as sidewalks will be required to avoid users having to walk or ride in the street to continue their journey. These shared trails should be constructed of hard surface material such as asphalt with concrete curbs to provide separation. Where feasible, all sidewalks should be constructed to the same dimensions as off-road shared trails. There are several instances where this is not feasible however, such as on Griffin Drive just east of the Curling Street intersection. Others have been noted in blue on the map enlargements. In these locations, it is recommended that sidewalks be constructed to a minimum width of 1.5-metres and signage

be installed notifying users of the narrow trail, as seen in the following illustration. There are several other roads which would be considered tertiary residential streets of relatively low traffic volumes, such as Barry Place, Star Street, Leggos Lane, Pier Road, and St. Aiden's Road. In these cases, signage or pavement markings may be considered in lieu of sidewalks, however this is still not considered best practice.

There is also a section of shared trail on the shoulder of the TCH as previously discussed. This is a special circumstance and will require further discussions with DTW to understand the trail typology.

Trail Safety

All trails inevitably connect with roads, especially in urban areas where sidewalks make up an important part of the trail network. These intersections represent one of the biggest potential areas of conflict 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. 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 and pavement markings so that it is intuitive for the pedestrian and visible for the driver.

The proposed trail route contains 22 street crossing points as indicated on the following table. This table summarizes the findings of the detailed engineering analysis which can be found in the attached appendices.

Jordan Nicksy 2016

#	Intersection	Crossing Evaluation
1	T'Railway / Serpentine	Tree trimming required to improve sight distance
2	T'Railway / McLeods	Sight distance is adequate
3	T'Railway / O'Connell	Sight distance is adequate
4	T'Railway / Hilliards	Low traffic volumes facilitate crossing
5	Curling / Petries	Integrate crossing into all way stop intersection
6	Petries / Connors	Integrate crossing into all way stop intersection
7	Griffin	Sight distance is adequate, pedestrian pushbutton suggested
8	Griffin / McEachrans	Low traffic volumes facilitate crossing
9	Barry / Bolands	Low traffic volumes facilitate crossing
10	T'Railway / Barretts	Low traffic volumes facilitate crossing
11	T'Railway / Leggos	Controlled intersection & low traffic volumes facilitate crossing
12	T'Railway / Petley	Low traffic volumes facilitate crossing
13	Griffin / Lewin	Integrate crossing into existing intersection
14	Lewin / Mill	Integrate crossing into existing intersection
15	Riverside / Oceanex	Sight distance is adequate
16	Riverside	Sight distance is adequate, pedestrian pushbutton suggested
17	Riverside / Penneys	Sight distance is adequate
18	Riverside / Humber	Low traffic volumes facilitate crossing
19	Riverside / Stan Dawe	Sight distance is adequate
20	Riverside / TCH	Slowing vehicles facilitate crossing
21	Man in the Mountain	Sight distance is adequate
22	TCH Ramp	Sight distance is adequate

Trail Amenities

Successful trails must provide amenities that accommodate comfort and convenience of a variety of trail users. Typical trail amenities to consider include trailheads, signage, lighting, site furniture, and landscaping. 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 of the trail. A significant challenge for the proposed trail route is that it currently contains few site amenities. At minimum, benches, bike racks, waste and recycling receptacles, and lighting should all be considered for the duration of the trail. As a part of the development of this project, the City should consider selecting fixtures to become standards for the trail and incorporating these throughout. The City may wish to include project partners such as The Great Trail or Corner Brook Stream Development Corporation in this discussion.

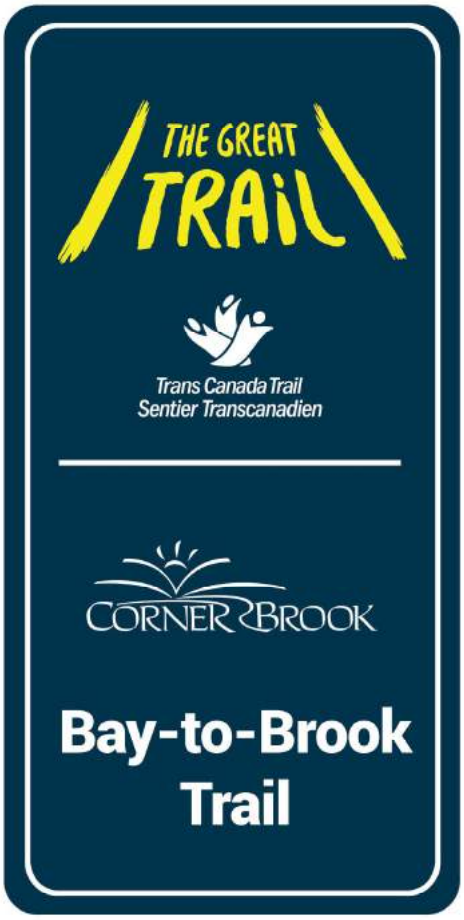
Maglin Site Furnishings

A complementary "family" of amenities ties together objects along the trail and enhances the overall experience

Wayfinding & Signage

A wayfinding system is much more than simply a series of signs placed strategically along a trail. It should be visually appealing, easily legible, consistent, and most importantly, facilitate movement in a clear and intuitive manner. A successful wayfinding system helps trail users orient themselves, draw a mental map, and easily navigate to their desired destination. It gives users the confidence to wander and truly experience all that a trail has to offer.

Generally, there is little to no signage along the proposed route identifying it as a trail. Other trails in the area, such as the Corner Brook Stream Trail or the new ATV route, are well-signed with trailhead maps, directional signage, and trail markers. It is recommended that the City incorporate a signage system as part of the proposed trail development. The Great Trail provides signage guidelines which can be used as a starting point to build an overall trail wayfinding system. As suggested by the guidelines, it is important to incorporate The Great Trail branding in proposed signage to ensure continuity across the country. It is recommended that the City co-brand the trail with the City logo and perhaps a name, such as the Bay-to-Brook Trail. Identifying it in this manner will allow the City to incorporate the trail as a part of its overall municipal trail network as well as ensure that strong connections are made with existing established networks such as the Corner Brook Stream or WCCA Trails.



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Long-Term Sustainability

For a trail to be truly sustainable, it must meet a number of criteria. It must be accessible and equitable, meaning it can be enjoyed by users of all ages and abilities. It must be convenient and well-connected so that it functions as an essential active transportation link. It must also provide a positive user experience by bringing users to important destinations or natural features. It must be practical to maintain and not require excessive or specialized upkeep. And finally, it must be respectful of its surroundings, both natural and man made. This section of the study discusses each of these factors in greater detail.

Accessibility, Social Equity & 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.

A significant potential barrier to accessibility is grade change. Grade changes can be challenging for some users, especially the elderly or those with mobility issues. The proposed trail route contains very few areas that present accessibility challenges due to grade changes. In fact, one of the reasons that this route was identified as the preferred route during public consultations was the perception that it was easily accessible for the broadest number of users.

From Mount Moriah eastward toward the Mill, the trail mostly follows the route of the former rail bed. As such, the curves are gentle and the right-of-way generous. The grades are also accommodating along this section - in the range of 2.5% according to Heritage NL - well below the recommended maximum of 5%. At the end of Barry Place, where the trail connects to Griffin Drive, a switchback ramp or other treatment will be required to navigate the only noteworthy grade change in this section.

From the Mill eastward, the trail follows the sidewalk along Riverside Drive. As a waterfront route, Riverside Drive generally follows the contour of the Bay of Islands. Review of mapping data suggests the longitudinal slope along Riverside Drive ranges from 1.5% to 4%, again within acceptable limits. The only area where this varies is at the onramp to the overpass by the Man in the Mountain lookout.

Connectivity

Quite simply, successful trail networks link people with places. They provide convenient, economical recreation and transportation opportunities, link open spaces, and tie together neighbourhoods and important community destinations. For a trail to be successful, it must be easily navigable in a timely, convenient, and safe manner and get people where they want to go. In this light,

connectivity is perhaps one of the strongest indicators of a successful trail.

During public consultations, it was noted that the proposed trail route would serve as an important connector between Curling, downtown Corner Brook, and Steady Brook, making it an ideal active transportation corridor. Indeed several individuals mentioned that there was a need for a commuter route between these centres. Literature further suggests that the installation of an active transportation route will result in a noticeable increase in the number of active users; if you build it, they will come. This contributes not just to the sustainability of the trail itself, but also to the overall health and well-being of the city and its residents. Ample evidence exists that suggests a healthy, active lifestyle has been shown to provide a number of social, health, environmental, and economic benefits.

Directly adjacent to the trail route are several popular amenities and attractions, such as the Port Building, Railway Society, the Mill, and the cruise ship port. Further abroad, it also connects to the Man in the Mountain lookout and the Trans-Canada Trail trailhead. These connections will strengthen the appeal of the trail, especially to tourists.

Downtown access is another advantage of this trail route. Near the Mill, the trail can connect with other established trails, such as the Corner Brook Stream Trail, which brings users to popular destinations such as City Hall, Margaret Bowater Park, prominent downtown streets such as West Street and Broadway, and further abroad, to the new hospital site via the Pipeline Trail. This connection will significantly expand the reach of the proposed trail and ensure it becomes an essential part of the city's overall trail network. It will also encourage tourists or through-hikers to venture off the Great Trail to experience and explore Corner Brook further. The Bay-to-Brook Trail Plan indicates these potential trail connections via dashed green lines.

User Experience

User experience refers to the factors that impact how a user feels when on a trail, their experience when using the trail, and the overall character of the trail network itself.

There is no denying the beauty of western Newfoundland. One of the most significant advantages of the proposed route is that it truly gives the trail user a taste of all that this unique part of the province has to offer. From Steady Brook heading west, the trail follows the TCH through the picturesque Long Range Mountains adjacent to the breathtaking Humber River. This is the first experience of the changing natural

The natural landscape creates an impressive sense of arrival for visitors of Corner Brook

landscape for visitors heading west on the TCH, and the topography, vegetation, and river views create a truly impressive sense of arrival.

As the trail enters Corner Brook along Riverside Drive, a sweeping view of the Bay of Islands opens up creating a memorable waterfront journey into the city. It is worth noting that several existing industrial uses along this stretch contain storage yards, parking areas, or material stockpiles that somewhat detract from this experience and would benefit from subtle landscape screening.

Continuing west, the trail passes by the Mill, where users can take in the experience of a working mill and learn more about the history of industry in Corner Brook. Alternatively, a detour downtown will lead users toward local shops or restaurants. Continuing westward connects to an existing multiuse trail on the slope above Griffin Drive which follows the former rail bed. This part of the trail contains mature vegetation, sloping topography, further views of the Bay of Islands, and several important cultural attractions such as the site of a former train wreck. Portions of this trail follow low volume residential streets, especially in Curling, which will require sidewalks, signage, or pavement markings to delineate the trail. A section of pedestrian bridge should be reinstated over Petries Brook before connecting to the T'Railway at Hilliards Road and eventually onto Mount Moriah and Ports aux Basques.

Trail Maintenance

To ensure the sustained success of the trail, it is critical that it is managed and maintained in a safe, accessible, and visually appealing condition. It is recommended that the City implement an ongoing trail maintenance program as a preventative measure. This will ensure the trail 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.

A list of general tasks has been provided on the following pages as a starting point however this may be expanded upon by City staff. Staff may also decide to focus maintenance efforts along high priority sections of trail that are more frequently used. The study team feels the level of maintenance required will not be onerous or outside of the City's capabilities, however the City may decide to contract trail maintenance to a partner organization such as the Corner Brook Stream Development Corporation or the WCCA. Both of these organizations have considerable experience in maintaining trail infrastructure to a high standard.

Maintenance tasks have been categorized based on the timing of the task. Pre-season tasks refer to maintenance tasks that should be performed during early spring in preparation of the peak summer season when trail use can be expected to increase. Ongoing tasks refer to maintenance tasks which should be completed on an ongoing basis throughout the year. These may occur on a regular schedule – weekly, biweekly, or monthly – or on an as-needed basis. End of season tasks refer to one-time maintenance tasks that are required in preparation for the end of the peak trail use season when priorities shift to winter tasks such as snowclearing.

Item	Maintenance Task	Frequency
Drainage	» Inspect known low points, wet spots, and drainage infrastructure (such as culverts)	Pre-season, ongoing (monthly basis), before/after significant rainfall events
	» Remove debris build up and blockages in culverts	Pre-season, ongoing (as needed)
	» Repair major damage such as ponding or washouts	Ongoing (as needed)
Vegetation	» Remove branches that obstruct trail clearance	Pre-season
	» Remove deadwood that poses a hazard	Pre-season
	» Top up mulch in planting beds	Pre-season
	» Perform edging of planting beds	Pre-season
	» Weeding	Ongoing
Turf Management	» Mow grass along trail edges to a height of 50 to 75mm	Ongoing (as needed)
Crosswalks	» Repaint crosswalk lines	Pre-season, ongoing (as needed)
	» Review signal timing and operation at pedestrian-activated pushbutton crosswalks	Pre-season, ongoing (as needed)
Trail Surface	» Inspect trail surface for failures such as cracking, settlement, root intrusions, and other hazards and repair as needed	Pre-season, ongoing (monthly basis)

Item	Maintenance Task	Frequency
Signage	» Ensure all signage is visible and free of obstructions	Pre-season, ongoing (monthly basis)
	» Replace deteriorated or damaged signs	Ongoing (as needed)
Trash	» Perform a trail-wide cleanup to collect accumulated winter debris	Pre-season
	» Remove litter	Ongoing (biweekly basis)
	» Empty waste receptacles	Ongoing (biweekly basis)
	» Remove graffiti	Ongoing (as needed)
Lighting	» Perform visual inspection of all trail lighting and replace failed lamps	Pre-season, ongoing (as needed)
Amenities	» Inspect benches for damage and repair or replace as needed	Pre-season, ongoing (monthly basis)
	» Restock dog waste bag dispensers	Ongoing (biweekly basis)
	» Inspect handrails, stairs, and ramps and repair as needed	Pre-season, ongoing (as needed)
	» Remove planters or other seasonal amenities to permit snowclearing operations	End of season
	» Replace amenities that have been stolen or severely damaged	Ongoing (as needed)

Natural Systems

Taking a context-sensitive approach is the first step toward truly sustainable development of any kind, including trail development. Working with the land, carefully studying its features, patterns, and processes, and identifying opportunities and constraints will result in a more successful project and a higher-quality built environment. Deeply understanding these inherent qualities of a site will lead to development that limits long-term maintenance concerns, reduces risk, preserves critical environmental processes, and capitalizes upon features such as views, solar access, and natural areas, thereby making a project more sustainable.

A great advantage of the proposed trail route is that it completely utilizes established rights-of-way. While other routes were initially considered that required entirely new sections of trail, it was determined that utilizing established corridors would create efficiencies and minimize the development footprint and costs. This is not to say that the trail needs zero development or upgrading; there is work required to upgrade trail surfacing, corridor width, crosswalks, signage, and amenities. In some sections of the existing rail bed through Curling, new culverts will be required where washouts have occurred along the slope. Reinstating the former rail bridge over Petries Brook is a substantial undertaking which will have an impact on the landscape. And along portions of Riverside Drive, sidewalk widening will be required which may require reshaping of several existing drainage ditches.

However, compared to the alternative of building new trails on virgin lands, utilizing existing corridors has resulted in a route that requires no additional land clearing, no negative impact on the visual quality of adjacent areas, little interference with natural drainage patterns, little removal of existing vegetation, and minimal grading. Ultimately, this results in less disruption to the existing natural systems that surround the trail such as wooded areas, waterways, habitats, and ecosystems. These are important considerations as, collectively, it is these natural features that define a community's sense of place and appeals to residents and visitors alike.

Probable Costs

Item	Quantity	Unit
T'Railway upgrading - Mt. Moriah to Hilliards Rd	1475	m
Crossing Point #2		
Crossing Point #3		
Crossing Point #4		
Pedestrian bridge crossing at Petries Brook	1	ea
T'Railway upgrading - Hilliards Rd to Conners Rd	460	m
Crossing Points #5 and #6		
1.5m asphalt trail along Griffin Drive	135	m
2.7m asphalt trail along Griffin Drive	94	m
Crossing Point #7		
2.7m asphalt trail along Griffin Drive south side	685	m
Crossing Point #8		
Griffin Dr to Barry Pl connection	120	m
Barry Place	410	m
Star Street	150	
Crossing Point #9		
Crossing Point #10		
T'Railway upgrading - Barretts Rd to Leggos Ave	935	m
Crossing Point #11		
Leggos Avenue	228	m
T'Railway upgrading - Leggos Ave to Petley St	116	m
Crossing Point #12		
St. Aiden's Road	298	m
T'Railway upgrading - St. Aiden's Rd to end of Pier Rd	1160	m
T'Railway upgrading - Pier Rd to Griffin Dr	585	m

Unit Rate	Cost	Comments
$ 27	$ 39,825	Widening and grading with granular 'A'
$ 4,500	$ 4,500	Includes signage and pavement markings
$ 4,500	$ 4,500	Includes signage and pavement markings
$ 3,500	$ 3,500	Includes signage and pavement markings
$ 350,000	$ 350,000	Quote received
$ 81	$ 37,260	More significant upgrading: granular surface 2.7m wide
$ 8,800	$ 8,800	Includes signage and pavement markings
$ 120	$ 16,200	Existing grade forces narrow walkway
$ 216	$ 20,304	
$ 28,500	$ 28,500	Includes signage, pavement markings, pedestrian activated pushbutton
$ 216	$ 147,960	Stabilization of rock face may be required- not priced
$ 3,500	$ 3,500	Includes signage and pavement markings
$ 500	$ 60,000	Grade change requiring retaining, switchbacks, handrail
$ 216	$ 88,560	Widen asphalt road by 2.7m where feasible (min. 1.5m), painted dividing line
$ 216	$ 32,400	Widen asphalt road by 2.7m where feasible (min. 1.5m), painted dividing line
$ 3,500	$ 3,500	Includes signage and pavement markings
$ 3,500	$ 3,500	Includes signage and pavement markings
$ 54	$ 50,490	Minimal upgrading: some widening, trail topping, culvert replacement, etc.
$ 3,500	$ 3,500	Includes signage and pavement markings
$ 216	$ 49,248	Widen asphalt road by 2.7m where feasible (min. 1.5m), painted dividing line
$ 40	$ 4,640	
$ 5,000	$ 5,000	Includes signage, bollards, gates, and pavement markings
$ 216	$ 64,368	Widen asphalt road by 2.7m where feasible (min. 1.5m), painted dividing line
$ 54	$ 62,640	Minimal upgrading: some widening, trail topping, culvert replacement, etc.
$ 75	$ 43,875	Upgrading: widening, granular surface, grading, etc.

Crossing Point #13		
2.7m asphalt sidewalk along Lewin Parkway	145	m
Crossing Point #14		
Corner Brook Stream Trail upgrades	150	m
New asphalt sidewalk along Service Rd	65	m
Corner Brook Stream Trail upgrades	652	m
Crossing Point #15		
2.7m asphalt walk along Riverside Dr	305	m
Crossing Point #16		
Culvert and storm infrastructure to accommodate new walkway along Riverside Dr	280	m
2.7m asphalt trail along Riverside Dr w/curb and ditching	1200	m
2.7m asphalt trail along Riverside Dr approaching Penneys Ln	225	m
Crossing Point #17		
2.7m asphalt trail w/curb along Riverside Dr from Penneys Ln to Humber Rd	1090	m
Crossing Point #18		
Replace 1.5m concrete walk with 2.7m asphalt trail from Humber Rd to parking area (west of Man in Mountain lookout)	2655	m
Crossing Point #19		
2.7m asphalt trail w/curb to TCH overpass	490	m
Crossing Point #20		
Crossing Point #21		
Multi-use pedestrian bridge over TCH	1	ea
Crossing Point #22		
2.7m asphalt trail along TCH to municipal boundary	2820	m
Allowance for trail wayfinding signage	1	ea
Allowance for site furnishings	1	ea

Estimate of Probable Costs

$	14,250	$	14,250	Includes signage, pavement markings, new signals at existing intersection
$	216	$	31,320	
$	500	$	500	Pavement markings
$	70	$	10,500	Trail widening to 2.7m using granular surfacing
$	216	$	14,040	Min. 1.8m wide
$	70	$	45,640	
$	2,500	$	2,500	Includes signage and pavement markings
$	216	$	65,880	
$	28,500	$	28,500	Includes signage, pavement markings, pedestrian activated pushbutton
$	450	$	126,000	
$	360	$	432,000	Includes signage and pavement markings
$	216	$	48,600	Existing concrete curb, adjacent slope may limit width to min. 1.8m
$	3,500	$	3,500	Includes signage and pavement markings
$	360	$	392,400	
$	3,500	$	3,500	Includes signage and pavement markings
$	300	$	796,500	Existing grades may limit width in some areas
$	3,500	$	3,500	Includes signage and pavement markings
$	360	$	176,400	
$	4,000	$	4,000	Includes signage and pavement markings
$	1,000	$	1,000	Signage
$	750,000	$	750,000	Quote received
$	3,000	$	3,000	Includes signage and pavement markings
$	800	$	2,256,000	Includes crash barrier, ditching, culverts
$	50,000	$	50,000	To Great Trail standards
$	75,000	$	75,000	Benches and waste/recycling receptacles only
		$	6,471,100	

A Note on Probable Costs

When reviewing the probable costs provided, please consider the following:

1. Costing does not include HST.
2. Costing provided is based on experience on similar projects and professional judgment only. Limited site information (such as subsurface conditions, geotechnical, underground infrastructure locations) was available at the time of costing.
3. Costing should only be used for general guidance and cannot be guaranteed as to accuracy (assume +/-20%).
4. Costing represents construction cost only which includes supply and installation of components identified for each priority project.
5. Detailed design fees are not included in the estimate, but typically range from 10-15% of construction costs.
6. Costs will likely change as more information becomes available. A refined cost estimate should be completed during detailed design when components are more clearly defined.
7. Costs are provided for the year 2019 and should be escalated at a rate of 2-3% each year to account for inflation and market conditions.
8. Substantial savings may be realized if portions of the work are completed using the City's own forces or other partners.

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8 Next Steps

Project Roles & Partners

As the City moves toward implementing its section of The Great Trail, it will become clear that partners are needed. The City has finite resources to implement this ambitious project and partners represent an opportunity to leverage additional resources. Further, development of the trail would benefit not only the City, but other government agencies and NGOs as well.

There is also a need to consider the realities of land ownership and long-term maintenance. In some cases, the projects proposed will require assets that the City does not currently own. The proposed trail section along the TCH for example, cannot happen without agreement from the Provincial Government who owns and maintains the highway right-of-way. Partnerships in these cases are imperative to the project's success.

Capital costs are another significant factor that affect implementation. While the City has been the party responsible for initiating this study, with assistance from The Great Trail, it may not necessarily be responsible for covering all project costs. In fact, many municipalities do not have the financial resources to do so. This is where funding agencies and grant programs at both the Provincial and Federal level can make a difference.

The following outlines proposed roles of important stakeholders and potential project partners in the Corner Brook area:

The City of Corner Brook

- Allocate budget each year to advance the initiatives of this study
- Become the champion for implementing the recommendations of this study; consider making this part of the role of a current staff member or introducing a new staff position such as Development Officer
- Support community groups, NGOs, local businesses, and other partners wishing to implement aspects of this study
- Promote the importance of The Great Trail to Corner Brook
- Liaise with other levels of government as needed
- Query properties highlighted in this report and confirm availability of lands; secure land use agreements for privately-owned property
- Set priorities for project implementation
- Apply for funding or undertake fundraising initiatives
- Provide overall project management
- Assist with long-term maintenance

Government of Newfoundland and Labrador

- The Department of Transportation and Works (DTW) will be responsible for any work that falls along a Provincially owned highway, such as the TCH. This includes modifications to the shoulder, signage, and other work within the right-of-way. The City will need to work closely with DTW on any initiatives that fall within their mandate.

- The Department of Tourism, Culture, Industry and Innovation (TCII) is the lead for the economic, culture, and innovation agenda of the Provincial Government. Their goal is to create a vibrant, diverse and sustainable economy, with productive, prosperous and culturally-rich communities and regions, making Newfoundland and Labrador a business and tourism "destination of choice". The City may consider meeting with TCII to determine the exact role it can play in supporting development of The Great Trail. This may include outreach, capacity building, economic support, or strategic planning.

- The Department of Municipal Affairs and Environment (MAE) assists municipalities in meeting their infrastructure needs and help provide the financial and administrative tools to support development of community capacity, regional cooperation, and sound governance. MAE may also be able to provide funding assistance.

- Service NL provides accessible, responsive services in the areas of public health and safety, environmental protection, occupational health and safety, consumer protection, and in the preservation of vital events and commercial transactions. The City must work with Service NL for aspects of project implementation that involve highway signage or accessibility.

Federal Government

- The Atlantic Canada Opportunities Agency (ACOA) works to create opportunities for economic growth in Atlantic Canada by working with diverse communities to develop and diversify local economies and by championing the strengths of Atlantic Canada. Traditionally, ACOA has supported many initiatives in the province that promote tourism and economic growth and development. The development of the Great Trail may align with their mandate and qualify for funding assistance.

- Infrastructure Canada provides long-term support to help Canadians benefit from world-class, modern public infrastructure and makes investments, builds partnerships,

develops policies, delivers programs, and fosters knowledge about public infrastructure in Canada. They provide funding for projects that increase the potential for innovation & economic, improve the environment and support stronger, safer communities.

Non-Governmental Organizations (NGOs)

» The Corner Brook Stream Development Corporation (CBSDC) is a non-profit, community oriented development agency with the mandate to develop and maintain a public walking trail system within Corner Brook. The network started with a few trails within the heart of the city, and has expanded over time to the outlying wilderness sections of the stream. The CBSDC has become a leader in trail planning and development in the city and represents a significant partner for the implementation and maintenance of The Great Trail moving forward.

» The West Coast Cycling Association (WCCA) is a volunteer based mountain biking association dedicated to building world-class multiuse trails around the city. They have become known for their careful attention to international construction standards, sensitivity to the natural landscape, and their ability to build trails very economically. The WCCA represents a tremendous potential resource and partner for the City.

» The Western Sno-Riders and the NL Snowmobile Federation are two groups of snowmobile advocates that have overseen the development and maintenance of many of western Newfoundland's most popular snowmobile trails. They are familiar with mapping, planning, and maintaining trails on the west coast, including many in the Corner Brook area, and may represent a knowledgeable partner for the City.

» The International Appalachian Trail NL (IATNL) has only recently begun developing and marketing its own extensive trail network. Their goal is to create a long-distance trail route in the Appalachian Mountains extending from Port aux Basques in the south to Crow Head in the north, utilizing existing walking trails, logging roads, the Newfoundland T'Railway, and new sections of community and backcountry trails. Again, this organization's knowledge of trail building on the west coast could be an asset to the City.

Funding Opportunities

Many municipalities choose to fund their own trail development programs entirely. However, there are sources of outside funding that are available at federal, provincial, and local levels of government that may provide funding assistance to offset capital project costs.

Federal Gas Tax Fund (Infrastructure Canada)

www.infrastructure.gc.ca/plan/gtf-fte-eng.html

The federal Gas Tax Fund is a permanent source of funding provided up front, twice-a-year, to provinces and territories, who in turn flow this funding to their municipalities to support local infrastructure priorities. Municipalities can pool, bank and borrow against this funding, providing significant financial flexibility.

Innovative Communities Fund (ACOA)

www.acoa-apeca.gc.ca/eng/ImLookingFor/ProgramInformation/Pages/ProgramDetails.aspx?ProgramID=6

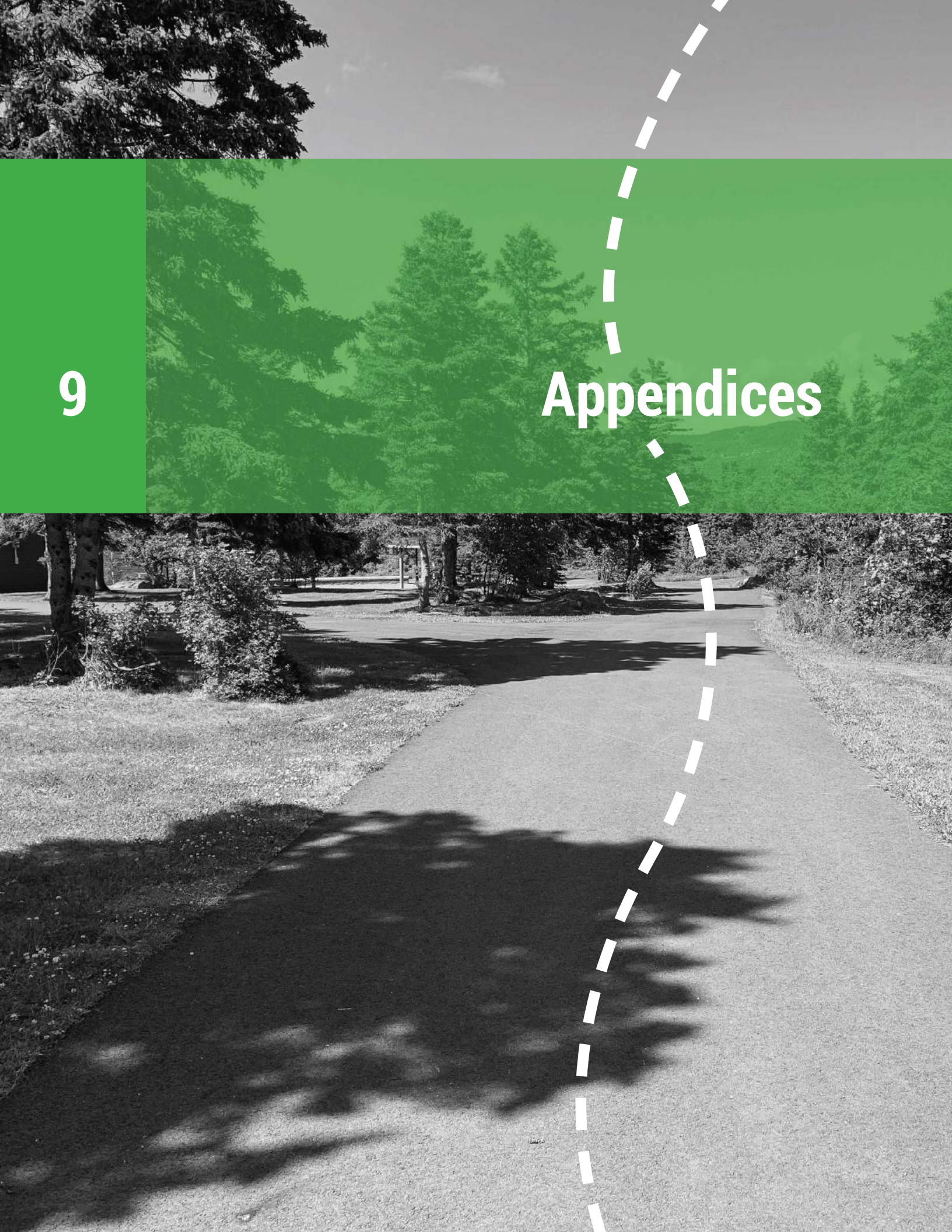
The Innovative Communities Fund invests in strategic projects that build the economies of Atlantic Canada's communities. ICF focuses on investments that lead to long-term employment and economic capacity building in rural communities. Urban initiatives that stimulate the competitiveness and vitality of rural communities may be considered on a selective basis.

Multi-Year Capital Works Funding (Municipal Affairs & Environment)

www.mae.gov.nl.ca/capital_works/cwfunding.html#p2

The Multi Year Capital Works funding is the Government of Newfoundland and Labrador's commitment to provincial investment to larger scale municipal infrastructure. The Multi-Year Capital Works Program allows larger municipalities to avail of three-year blocks of funding which supports improved planning in larger communities which have the capacity to make multi-year commitments.

The Great Trail / Parks Canada *thegreattrail.ca/news/government-of-canada-announces-30-million-in-funding-for-the-great-trail/*	The Great Trail is a national initiative with the goal of developing a network of recreational trails that would stretch across Canada. Today, The Great Trail is connected, linking 15,000 communities, including every provincial and territorial capital, and spanning 24,400 kilometres. Now that the Great Trail network is connected, the Government of Canada is investing $30 million through Budget 2017 to support the improved safety, accessibility, and sustainability of the Trail, as well as enrich the visitor experience along its route for all types of users.
Small Communities Fund (Infrastructure Canada) *www.infrastructure.gc.ca/plan/gtf-fte-eng.html*	This program provides contribution funding for infrastructure projects in small communities with populations of 100,000 or less that contribute to economic growth, a clean environment and stronger communities. Projects will allow people and goods to move more freely, increase the potential for innovation & economic development, and help to improve the environment & support stronger, safer communities.
Community Healthy Living Fund (Children, Seniors & Social Development) *www.cssd.gov.nl.ca/grants/chl_fund.html*	A program that supports "The Way Forward: A Vision for Sustainability and Growth in Newfoundland and Labrador" and provides a funding opportunity to communities and organization's for projects, programs and initiatives that demonstrate direct measurable results towards the targets outlined in "The Way Forward", specifically to increase physical activity.
Green Municipal Fund (Federation of Canadian Municipalities) *https://fcm.ca/en/funding*	Offers grants for municipal environmental projects. Loans are also available to municipalities at competitive rates, and most recipients receive an additional grant of up to 15 percent of their loan amount. Municipal partners may apply for competitive, long-term financing.



9 Appendices

1. Newfoundland T'Railway and Serpentine Road

Sight Evaluation

Preliminary Assessment

(Obtained from TAC Decision Support Tool For Pedestrian Crossing Control)

- *Are Traffic Signals Warranted at this location?* ***No***
- *Is average hourly ped volume greater or equal to 15 EAUs AND vehicular volume greater than or equal to 1,500 veh/day?* ***No***
- *Is this location on pedestrian desire lines or is there requirement for system connectivity?* ***Yes***
- *Is this site less than 'd' (100 to 200 m) from another traffic control device?* ***No***

Proposed Sight Distance

$$SD = \frac{V(W+4)}{4.32}$$

With :

V= 30 km/hr (assumed)

W = 6.0 m (approximated)

SD = 69.4 m

SD ~ 48 m West; ~ 200+ m East (Serpentine Rd.); 280+ m East (Soper's Drive)

Sight Distance is not adequate in all directions (tree trimming or grading could improve)

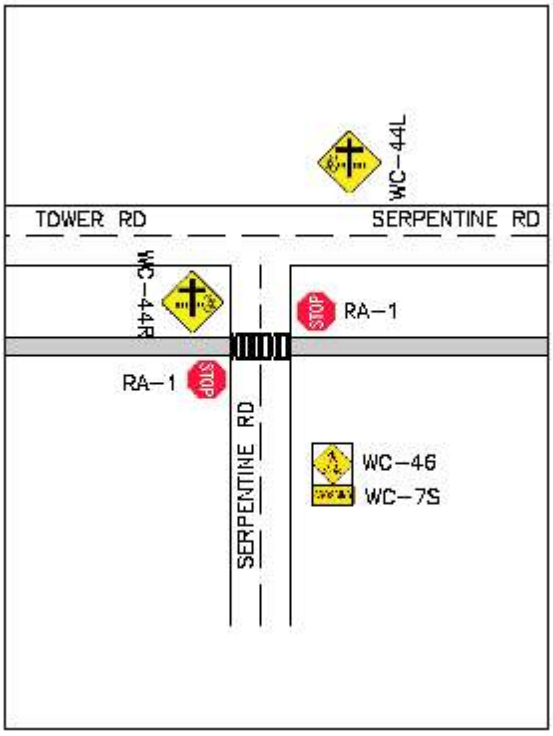
Lighting Assessment

N/A

Recommended Components

- Side mounted signs (WC-44L/R) on both sides of the road
- Twin parallel elephant feet paint markings
- Stop signs on trail
- Advance Warning Signs (WC-46 with Wc-7S tabs)
- Zebra Crosswalk markings

Recommended Layout



2. Newfoundland T'Railway and McLeods Lane

Sight Evaluation

Preliminary Assessment

(Obtained from TAC Decision Support Tool For Pedestrian Crossing Control)

- *Are Traffic Signals Warranted at this location?* ***No***
- *Is average hourly ped volume greater or equal to 15 EAUs AND vehicular volume greater than or equal to 1,500 veh/day?* ***No***
- *Is this location on pedestrian desire lines or is there requirement for system connectivity?* ***Yes***
- *Is this site less than 'd' (100 to 200 m) from another traffic control device?* ***No***

Proposed Sight Distance

$$SD = \frac{V(W+4)}{4.32}$$

With :

V= 30 km/hr (assumed)

W = 6.5 m (approximated)

SD = 72.9 m

SD ~ 145 m East; ~ 75 m North

Sight Distance is adequate

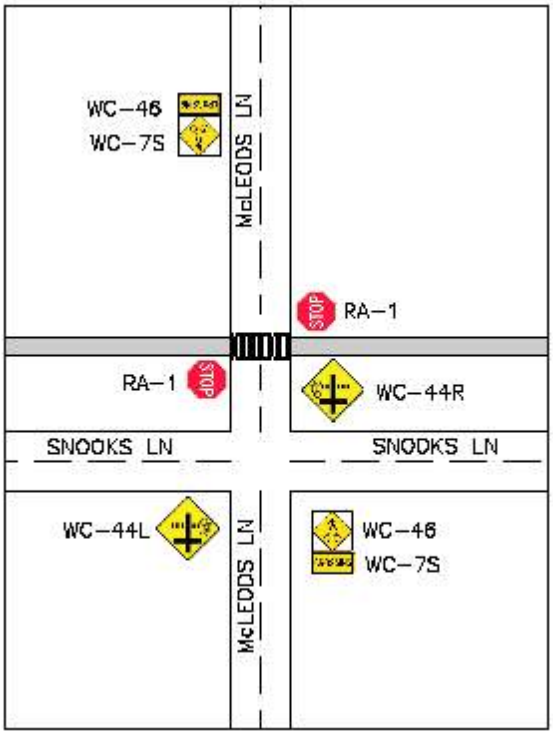
Lighting Assessment

N/A

Recommended Components

- Side mounted signs (WC-44L/R) on both sides of the road
- Twin parallel elephant feet paint markings
- Stop signs on trail
- Advance Warning Signs (WC-46 with WC-7S tabs)
- Zebra Crosswalk markings

Recommended Layout



3. Newfoundland T'Railway and O'Connell Drive

Sight Evaluation

Preliminary Assessment

(Obtained from TAC Decision Support Tool For Pedestrian Crossing Control)

- *Are Traffic Signals Warranted at this location?* ***No***
- *Is average hourly ped volume greater or equal to 15 EAUs AND vehicular volume greater than or equal to 1,500 veh/day?* ***Yes (traffic volumes)***
- *Is this site less than 'd' (100 to 200 m) from another traffic control device?* ***No***

Proposed Sight Distance

$$SD = \frac{V(W+4)}{4.32}$$

With :

V= 50 km/hr

W = 6.5 m (approximated)

SD = 121.5 m

SD ~ 205 m North; ~ 125 m South; Knights Road and Snooks Lane are Stop Controlled.

Sight Distance is adequate

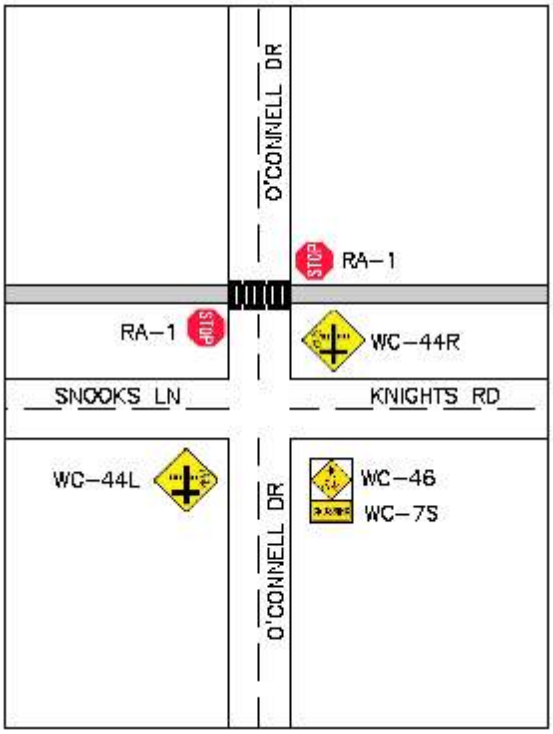
Lighting Assessment

N/A

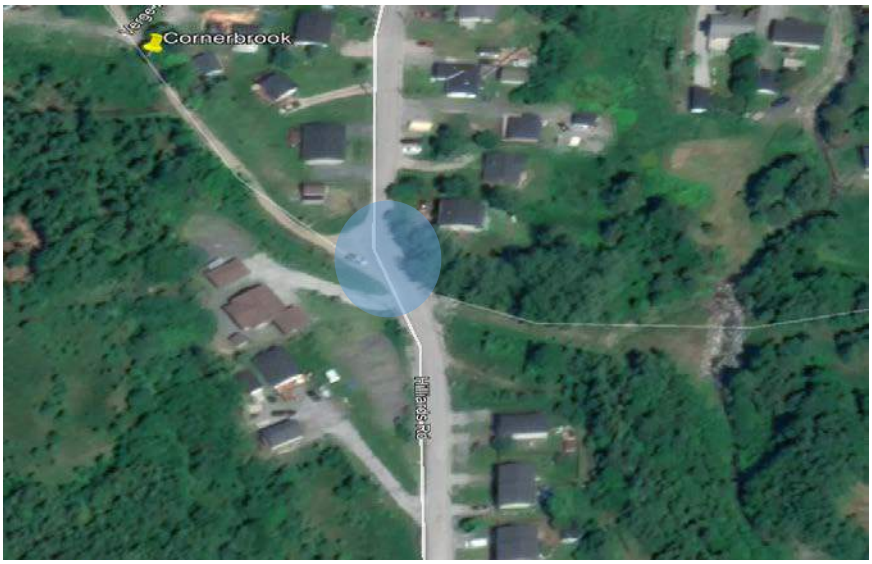
Recommended Components

- Side mounted signs (WC-44L/R) on Snooks Lane and Knights Road
- Twin parallel elephant feet paint markings
- Stop signs on trail
- Advance Warning Signs (WC-46 with WC-7S tabs)
- Zebra Crosswalk markings

Recommended Layout



4. Newfoundland T'Railway and Hilliards Road



Sight Evaluation

Preliminary Assessment

(Obtained from TAC Decision Support Tool For Pedestrian Crossing Control)

- *Are Traffic Signals Warranted at this location?* ***No***
- *Is average hourly ped volume greater or equal to 15 EAUs AND vehicular volume greater than or equal to 1,500 veh/day?* ***No***
- *Is this location on pedestrian desire lines or is there requirement for system connectivity?* ***Yes***
- *Is this site less than 'd' (100 to 200 m) from another traffic control device?* ***No***

Proposed Sight Distance

$$SD = \frac{V(W+4)}{4.32}$$

With :

V= 50 km/hr

W = 6.0 m (approximated)

SD = 115.7 m

SD ~ 115 m North; ~ 88 m South

Sight Distance is not adequate. However, with low traffic volumes, crossings should be facilitated

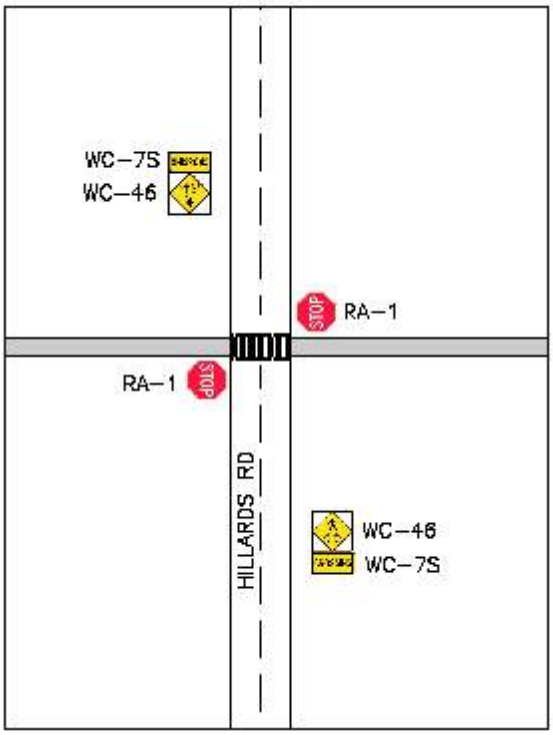
Lighting Assessment

N/A

Recommended Components

- Twin parallel elephant feet paint markings
- Stop Signs on Trail
- Advance Warning Signs (WC-46 with WC-7S tabs)
- Zebra Crosswalk markings

Recommended Layout



5. Newfoundland T'Railway and Petries Street

Sight Evaluation

Preliminary Assessment

(Obtained from TAC Decision Support Tool For Pedestrian Crossing Control)

- *Are Traffic Signals Warranted at this location?* ***4 way stop exists at this location***
- *Is average hourly ped volume greater or equal to 15 EAUs AND vehicular volume greater than or equal to 1,500 veh/day?* ***Yes, from a traffic volume perspective***
- *Is this location on pedestrian desire lines or is there requirement for system connectivity?* ***Yes***
- *Is this site less than 'd' (100 to 200 m) from another traffic control device?* ***No***

Proposed Sight Distance

$$SD = \frac{\mathrm{V(W+4)}}{4.32}$$

With :

V= 30 km/hr (assumed)

W = 38.5 m (approximated)

SD = 295.1 m

SD ~43 m West; ~38 m South (Connors Road Right Turn Lane); Stop controlled in other directions.

Sight Distance is not adequate. However, this is an all way stop intersection so the crossing will be integrated into the existing system.

Lighting Assessment

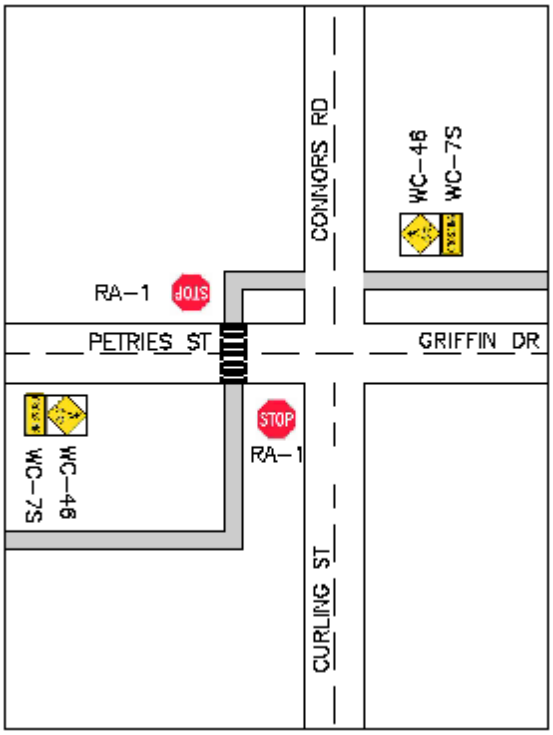
N/A

Recommended Components

- Twin parallel elephant feet paint markings
- Stop Signs on Trail
- Advance Warning Sign on Petries Street and Griffin Drive (WC-46 with WC-7S tabs)
- Zebra Crosswalk markings

Recommended Layout

- Cyclists to dismount and cross Petries Street via pedestrian crossing. Crossing at this location to save on grading of other crossing options.



6. Newfoundland T'Railway and Connors Road

Sight Evaluation

Preliminary Assessment

(Obtained from TAC Decision Support Tool For Pedestrian Crossing Control)

- *Are Traffic Signals Warranted at this location?* ***4 way stop exists at this location***
- *Is average hourly ped volume greater or equal to 15 EAUs AND vehicular volume greater than or equal to 1,500 veh/day?* ***Yes, from a traffic volume perspective***
- *Is this location on pedestrian desire lines or is there requirement for system connectivity?* ***Yes***
- *Is this site less than 'd' (100 to 200 m) from another traffic control device?* ***No***

Proposed Sight Distance

$$SD = \frac{\mathrm{V(W+4)}}{4.32}$$

With :

V= 30 km/hr (assumed)

W = 22.0 m (approximated)

SD = 180.6 m

SD ~38 m North; 28 m South (from Curling Street @ intersection); 50 m East (Griffin Drive and Right Turn Lane); Stop controlled in for other approaches.

Sight Distance is not adequate. However, this is an all way stop intersection so the crossing will be integrated into the existing system.

Lighting Assessment

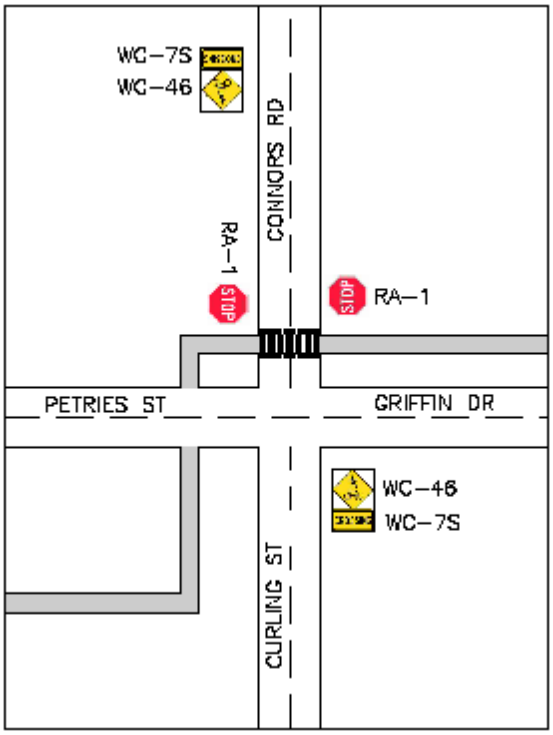
N/A

Recommended Components

- Twin parallel elephant feet paint markings
- Stop Signs on Trail
- Advance warning Sign on Connors Road and Curling Street (WC-46 with Wc-7S tabs)
- Zebra Crosswalk markings

Recommended Layout

- Cyclists to dismount to cross the Connors Road pedestrian crossing. Crossing at this location to save on grading of other crossing options.



7. Newfoundland T'Railway and Griffin Drive by Civic 554

Sight Evaluation

Preliminary Assessment

(Obtained from TAC Decision Support Tool For Pedestrian Crossing Control)

- *Are Traffic Signals Warranted at this location?* ***No***
- *Is average hourly ped volume greater or equal to 15 EAUs AND vehicular volume greater than or equal to 1,500 veh/day?* ***Yes (traffic volumes)***
- *Is this location on pedestrian desire lines or is there requirement for system connectivity?* ***Yes***
- *Is this site less than 'd' (100 to 200 m) from another traffic control device?* ***No (approx. 190 m to intersection of Connors Road and Griffin Drive)***

Proposed Sight Distance

$$SD = \frac{V(W+4)}{4.32}$$

With :

V= 50 km/hr

W = 8 m (approximated)

SD = 138.9 m

SD ~ 139 m West; ~ 145 m East

Sight Distance is adequate. However, with grades, sight distance is low based on object height.

Lighting Assessment

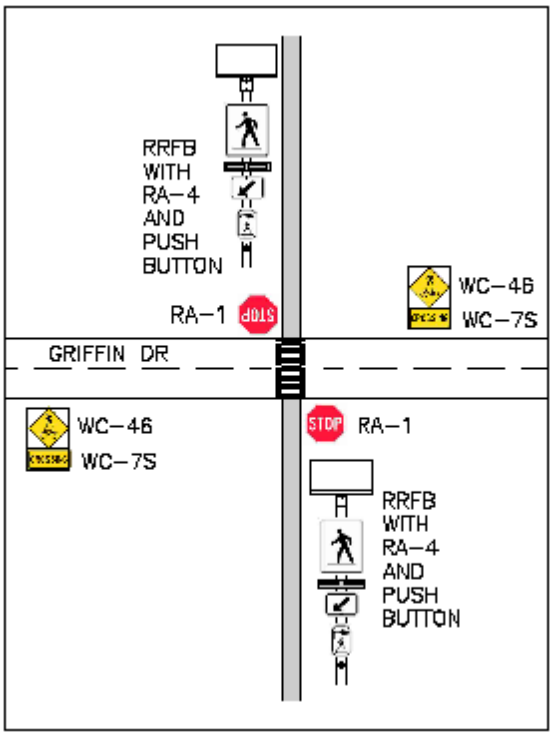
N/A

Recommended Components

- Twin parallel elephant feet paint markings
- Stop Signs on Trail
- Advance warning Signs (WC-46 with Wc-7S tabs)
- Zebra Crosswalk markings
- Recommended **Rectangular Rapid Flashing Beacon** (RRFB)
    - Side mounted signs (RA-4)
    - Alternating amber flashing beacons
    - Pedestrian pushbutton with sign (ID-21)
    - Passing restriction on approaches

Recommended Layout

- New sidewalk for pedestrians; cyclists use new cycling lane on roadway until first house on LHS before joining trail



8. Newfoundland T'Railway and McEachrans Avenue

Sight Evaluation

Preliminary Assessment

(Obtained from TAC Decision Support Tool For Pedestrian Crossing Control)

- *Are Traffic Signals Warranted at this location?* ***No***
- *Is average hourly ped volume greater or equal to 15 EAUs AND vehicular volume greater than or equal to 1,500 veh/day?* ***No***
- *Is this location on pedestrian desire lines or is there requirement for system connectivity?* ***Yes***
- *Is this site less than 'd' (100 to 200 m) from another traffic control device?* ***No***

Proposed Sight Distance

$$SD = \frac{V(W+4)}{4.32}$$

With :

V= 30 km/hr (assumed)

W = 6.0 m (approximated)

SD = 69.4 m

SD ~ 47 m South; Adjacent to Griffin Drive (North)

Sight Distance is not adequate. However, with low traffic volumes, crossings should be facilitated

Lighting Assessment

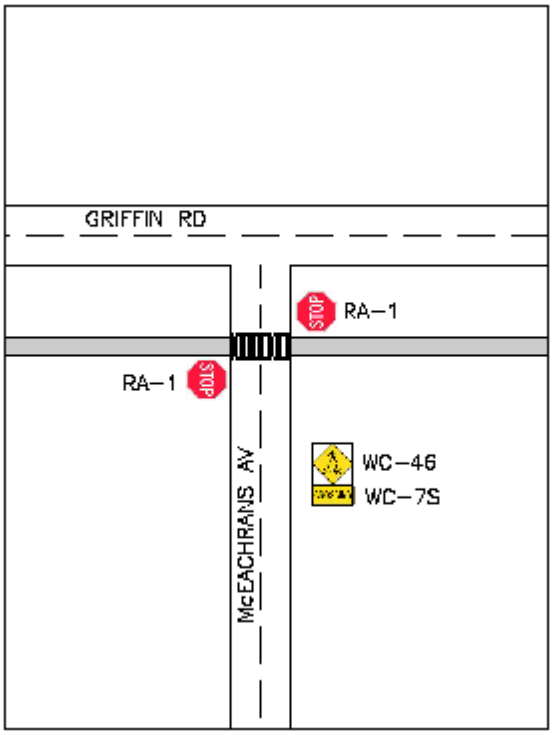
N/A

Recommended Components

- Twin parallel elephant feet paint markings
- Stop Signs on Trail
- Advance Warning Signs (WC-46 with WC-7S tabs)
- Zebra Crosswalk markings

Recommended Layout

- The trail has a steep grade moving eastbound. Grade reduction measures or a handrail should be considered for users



9. Newfoundland T'Railway and Bolands Avenue

Sight Evaluation

Preliminary Assessment

(Obtained from TAC Decision Support Tool For Pedestrian Crossing Control)

- *Are Traffic Signals Warranted at this location?* ***No***
- *Is average hourly ped volume greater or equal to 15 EAUs AND vehicular volume greater than or equal to 1,500 veh/day?* ***No***
- *Is this location on pedestrian desire lines or is there requirement for system connectivity?* ***Yes***
- *Is this site less than 'd' (100 to 200 m) from another traffic control device?* ***Yes (Sidewalk is close, but no signalized intersection. This is a low volume roadway with connectivity to the A/T network)***

Proposed Sight Distance

$$SD = \frac{\mathrm{V(W+4)}}{4.32}$$

With :

V= 30 km/hr (assumed)

W = 6.0 m (approximated)

SD = 69.4 m

SD ~ 43 m North; ~35 m South

Sight Distance is not adequate. However, with low traffic volumes, crossings should be facilitated

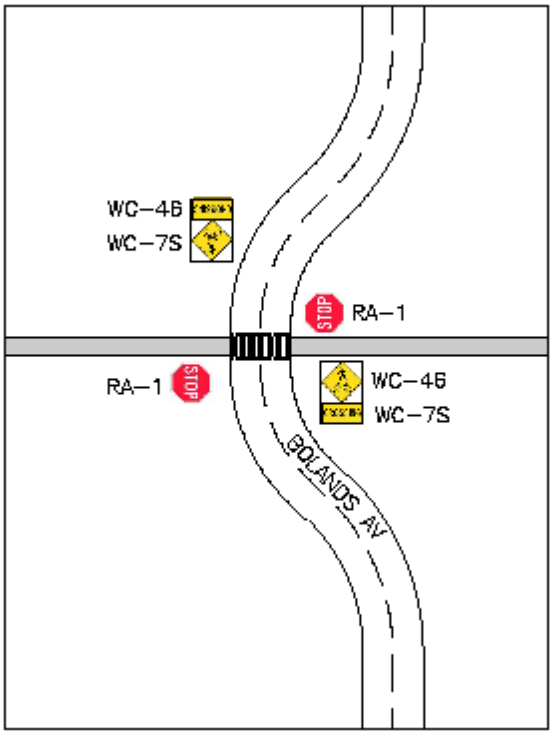
Lighting Assessment

N/A

Recommended Components

- Twin parallel elephant feet paint markings
- Stop Signs on Trail
- Advance Warning Signs (WC-46 with WC-7S tabs)
- Zebra Crosswalk markings
- As trail shares as residential access, delineate portion of roadway for A/T

Recommended Layout



10. Newfoundland T'Railway and Barretts Road

Sight Evaluation

Preliminary Assessment

(Obtained from TAC Decision Support Tool For Pedestrian Crossing Control)

- *Are Traffic Signals Warranted at this location?* ***No***
- *Is average hourly ped volume greater or equal to 15 EAUs AND vehicular volume greater than or equal to 1,500 veh/day?* ***No***
- *Is this location on pedestrian desire lines or is there requirement for system connectivity?* ***Yes***
- *Is this site less than 'd' (100 to 200 m) from another traffic control device?* ***Yes (Not signalized, but stop controlled w/ sidewalk. However, it is a low volume roadway with connectivity for A/T network)***

Proposed Sight Distance

$$SD = \frac{\mathrm{V(W+4)}}{4.32}$$

With :

V= 30 km/hr (assumed)

W = 6.0 m (approximated)

SD = 69.4 m

SD ~ 123 m North; ~50 m South

Sight Distance is not adequate. However, with low traffic volumes, crossings should be facilitated

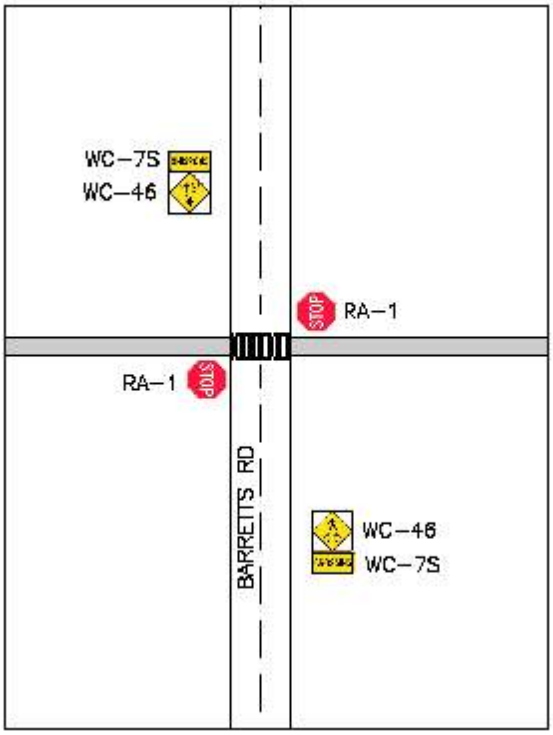
Lighting Assessment

N/A

Recommended Components

- Twin parallel elephant feet paint markings
- Stop Signs on Trail
- Advance warning Signs (WC-46 with Wc-7S tabs)
- Zebra Crosswalk markings

Recommended Layout



11. Newfoundland T'Railway and Leggos Avenue

Sight Evaluation

Preliminary Assessment

(Obtained from TAC Decision Support Tool For Pedestrian Crossing Control)

- *Are Traffic Signals Warranted at this location?* ***No***
- *Is average hourly ped volume greater or equal to 15 EAUs AND vehicular volume greater than or equal to 1,500 veh/day?* ***No***
- *Is this location on pedestrian desire lines or is there requirement for system connectivity?* ***Yes***
- *Is this site less than 'd' (100 to 200 m) from another traffic control device?* ***No***

Proposed Sight Distance

$$SD = \frac{\mathrm{V(W+4)}}{4.32}$$

With :

V= 30 km/hr (assumed)

W = 6.0 m (approximated)

SD = 69.4 m

SD Adjacent to access North; ~47 m South

Sight Distance is not adequate. However, the stop controlled intersection is within the sight distance, so the crossings should be facilitated. Additionally, traffic volumes are low on this roadway.

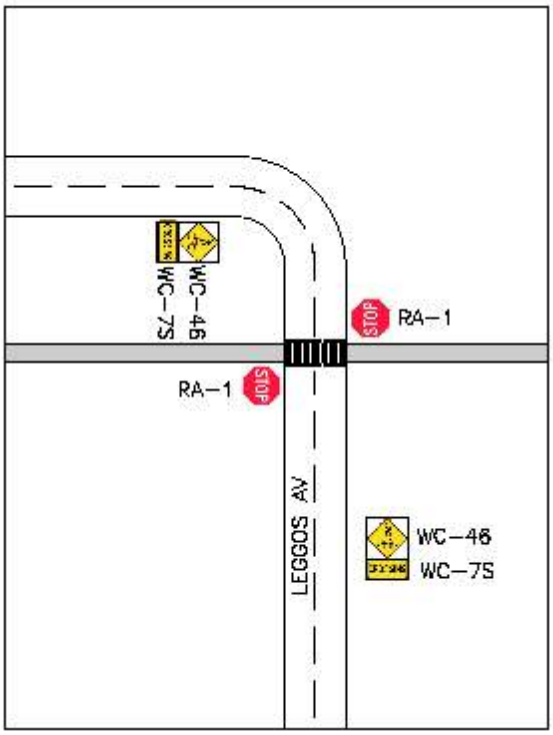
Lighting Assessment

N/A

Recommended Components

- Twin parallel elephant feet paint markings
- Stop Signs on Trail
- Advance Warning Sign on Leggos Avenue (WC-46 with Wc-7S tabs)
- Zebra Crosswalk markings
- As trail has accesses off of it, delineate portion of roadway for A/T (with white line and markings)

Recommended Layout



12. Newfoundland T'Railway and Petley Street

Sight Evaluation

Preliminary Assessment

(Obtained from TAC Decision Support Tool For Pedestrian Crossing Control)

- *Are Traffic Signals Warranted at this location?* ***No***
- *Is average hourly ped volume greater or equal to 15 EAUs AND vehicular volume greater than or equal to 1,500 veh/day?* ***No***
- *Is this location on pedestrian desire lines or is there requirement for system connectivity?* ***Yes***
- *Is this site less than 'd' (100 to 200 m) from another traffic control device?* ***No***

Proposed Sight Distance

$$SD = \frac{\mathrm{V(W+4)}}{4.32}$$

With :

V= 30 km/hr (assumed)

W = 6.0 m (approximated)

SD = 69.4 m

SD ~45 m North; ~41 m South

Sight Distance is not adequate. However, there are low traffic volumes on this roadway, so the crossing is permitted.

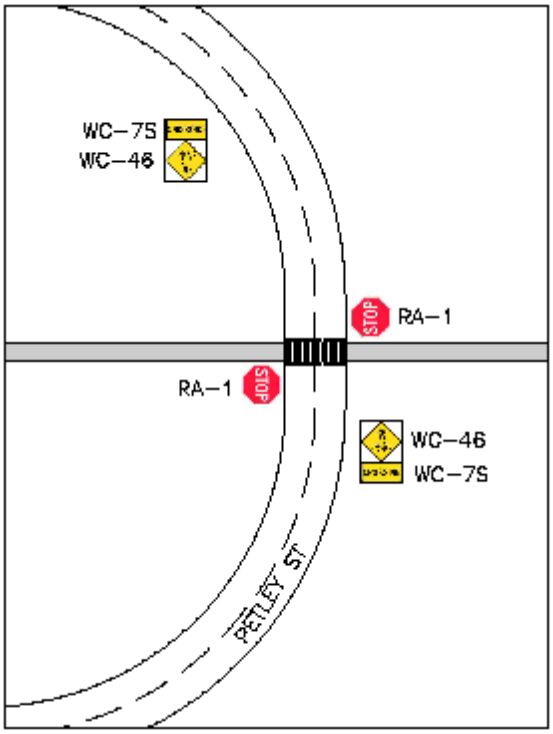
Lighting Assessment

N/A

Recommended Components

- Twin parallel elephant feet paint markings
- Stop Signs on Trail
- Advance Warning Signs on Petley Street (WC-46 with Wc-7S tabs)
- Zebra Crosswalk markings
- As trail has accesses off of it, delineate portion of roadway for A/T (with white line and markings)
- Replace gate on west trail approach with bollards (recommended)

Recommended Layout



13. Newfoundland T'Railway and Griffin Drive

Sight Evaluation

Preliminary Assessment

(Obtained from TAC Decision Support Tool For Pedestrian Crossing Control)

- *Are Traffic Signals Warranted at this location?* ***Signals Exist at this location***
- *Is average hourly ped volume greater or equal to 15 EAUs AND vehicular volume greater than or equal to 1,500 veh/day?* ***Yes, from a traffic volume perspective***
- *Is this location on pedestrian desire lines or is there requirement for system connectivity?* ***Yes***
- *Is this site less than 'd' (100 to 200 m) from another traffic control device?* ***Location is adjacent to signalized intersection***

Proposed Sight Distance

$$SD = \frac{\mathrm{V(W+4)}}{4.32}$$

With :

V= 30 km/hr (assumed)

W = 21.0 m (approximated)

SD = 173.6 m

SD ~108 m North; Signalized intersection in other directions.

Sight Distance is not adequate. However, this is a signalized intersection so the crossing will be integrated into the existing system.

Lighting Assessment

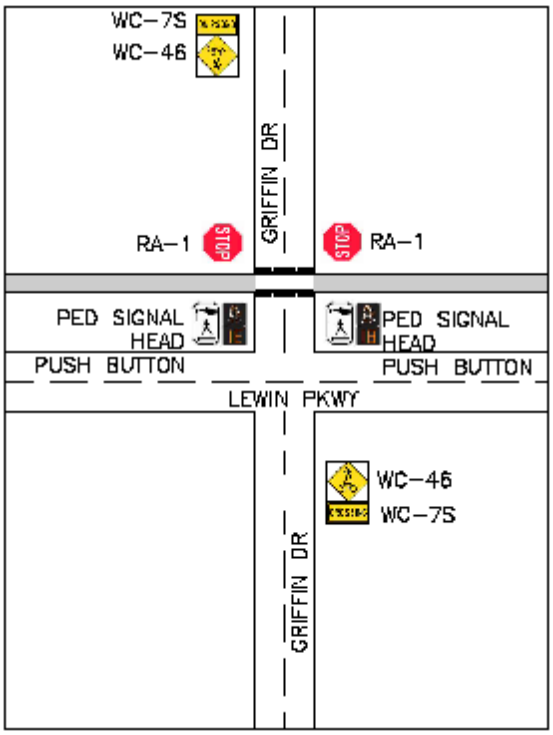
N/A

Recommended Components

- Stop Signs on Trail
- Advance Warning Signs on Griffin Drive (WC-46 with WC-7S tabs)
- White pavement markings
- Stop lines for vehicular traffic
- Twin parallel elephant feet paint markings
- Recommended **Signal Treatment**
  - Pedestrian signal heads
  - Pedestrian pushbutton with sign (ID-21)

Recommended Layout

- Cyclists to dismount and cross Griffin Drive via pedestrian crossing



14. Newfoundland T'Railway and Mill Road

Sight Evaluation

Preliminary Assessment

(Obtained from TAC Decision Support Tool For Pedestrian Crossing Control)

- *Are Traffic Signals Warranted at this location?* ***Signals Exist at this location***
- *Is average hourly ped volume greater or equal to 15 EAUs AND vehicular volume greater than or equal to 1,500 veh/day?* ***Yes, from a traffic volume perspective***
- *Is this location on pedestrian desire lines or is there requirement for system connectivity?* ***Yes***
- *Is this site less than 'd' (100 to 200 m) from another traffic control device?* ***Location is adjacent to signalized intersection***

Proposed Sight Distance

$$SD = \frac{\mathrm{V(W+4)}}{4.32}$$

With :

V= 30 km/hr (assumed)

W = 16.0 m (approximated)

SD = 138.8 m

SD Access to the North; Signalized intersection in other directions.

Sight Distance is not adequate. However, this is a signalized intersection so the crossing will be integrated into the existing system.

Lighting Assessment

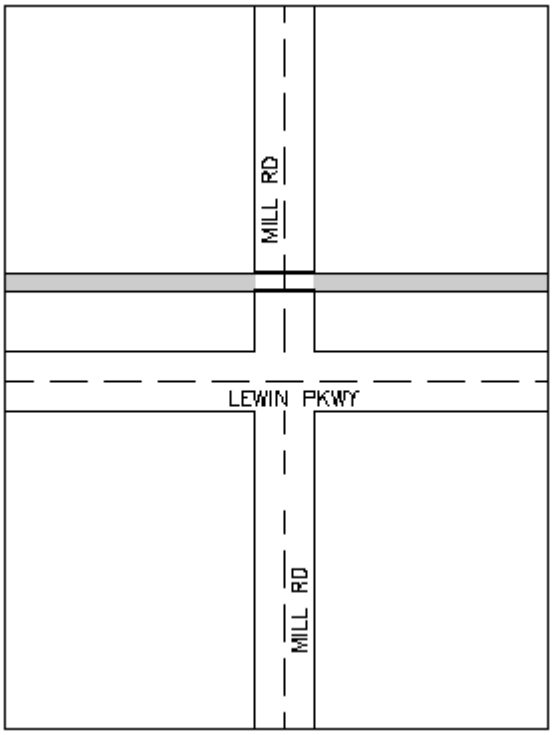
N/A

Recommended Components

- White parallel pavement markings

Recommended Layout

- Cyclists to dismount and cross Mill Road via pedestrian crossing



15. Newfoundland T'Railway and Oceanex Access

Sight Evaluation

Preliminary Assessment

(Obtained from TAC Decision Support Tool For Pedestrian Crossing Control)

- *Are Traffic Signals Warranted at this location?* ***No***
- *Is average hourly ped volume greater or equal to 15 EAUs AND vehicular volume greater than or equal to 1,500 veh/day?* ***Yes, from a vehicle volume metric***
- *Is this location on pedestrian desire lines or is there requirement for system connectivity?* ***Yes***
- *Is this site less than 'd' (100 to 200 m) from another traffic control device?* ***No***

Proposed Sight Distance

$$SD = \frac{\mathrm{V(W+4)}}{4.32}$$

With :

V= 50 km/hr

W = 7.5 m (approximated)

SD = 133.1 m

SD Adjacent to access West; ~220m North; ~182 m South

Sight Distance is adequate.

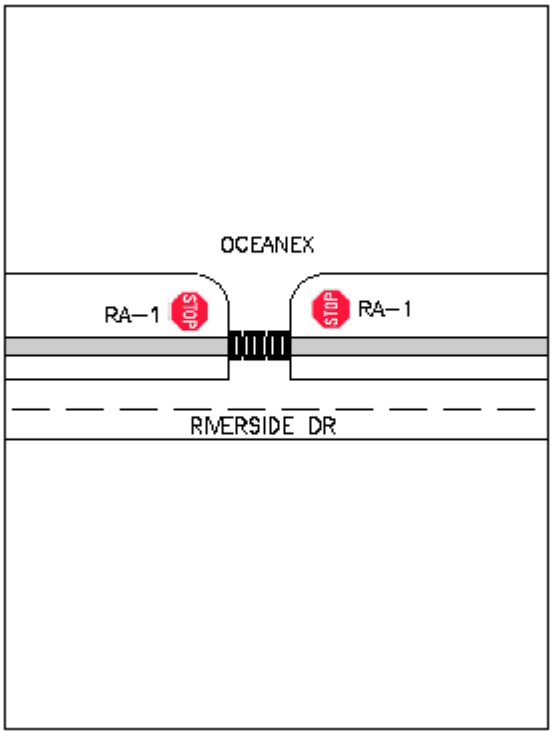
Lighting Assessment

N/A

Recommended Components

- Twin parallel elephant feet paint markings
- Stop Signs on Trail
- Zebra Crosswalk markings

Recommended Layout



16. Newfoundland T'Railway and Griffin Drive by Oceanex Storage Lots

Sight Evaluation

Preliminary Assessment

(Obtained from TAC Decision Support Tool For Pedestrian Crossing Control)

- *Are Traffic Signals Warranted at this location?* ***No***
- *Is average hourly ped volume greater or equal to 15 EAUs AND vehicular volume greater than or equal to 1,500 veh/day?* ***Yes (traffic volumes)***
- *Is this location on pedestrian desire lines or is there requirement for system connectivity?* ***Yes***
- *Is this site less than 'd' (100 to 200 m) from another traffic control device?* ***No***

Proposed Sight Distance

$$SD = \frac{V(W+4)}{4.32}$$

With :

V= 50 km/hr

W = 7m (approximated)

SD = 127.3 m

SD ~ 300 m South; ~ 212.5 m East

Sight Distance is adequate.

Lighting Assessment

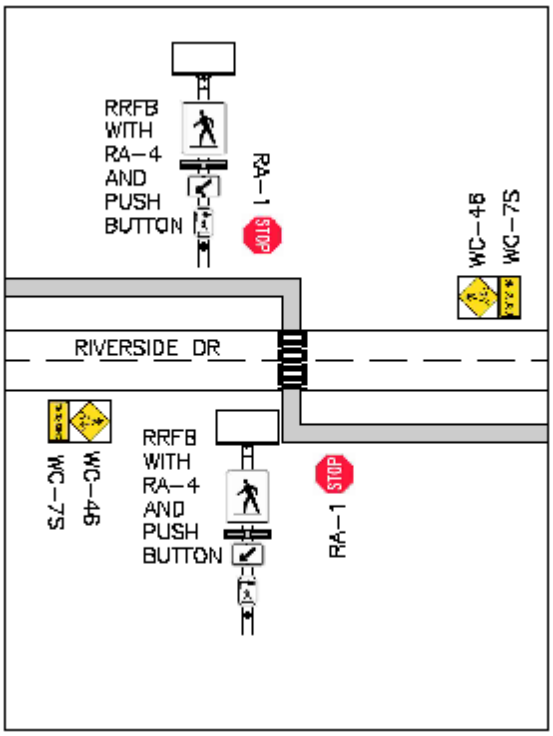
N/A

Recommended Components

- Twin parallel elephant feet paint markings
- Stop Signs on Trail
- Advance Warning Signs (WC-46 with Wc-7S tabs)
- Zebra Crosswalk markings
- Recommended **Rectangular Rapid Flashing Beacon** (RRFB)
    - Side mounted signs (RA-4)
    - Alternating amber flashing beacons
    - Pedestrian pushbutton with sign (ID-21)
    - Passing restriction on approaches

Recommended Layout

- New gravel or paved path for cyclists/pedestrians
- Would require approx. 280 m of culvert when ditch would be infilled
- Ditch would need to be realigned on the path after the culvert area moving easterly to facilitate drainage



17. Newfoundland T'Railway and Penneys Lane

Sight Evaluation

Preliminary Assessment

(Obtained from TAC Decision Support Tool For Pedestrian Crossing Control)

- *Are Traffic Signals Warranted at this location?* ***No***
- *Is average hourly ped volume greater or equal to 15 EAUs AND vehicular volume greater than or equal to 1,500 veh/day?* ***No***
- *Is this location on pedestrian desire lines or is there requirement for system connectivity?* ***Yes***
- *Is this site less than 'd' (100 to 200 m) from another traffic control device?* ***No***

Proposed Sight Distance

$$SD = \frac{\mathrm{V(W+4)}}{4.32}$$

With :

V= 30 km/hr

W = 15.7 m (approximated)

SD = 136.8 m

SD Adjacent to Penneys Lane; ~141 m East; ~160 m West

Sight Distance is adequate.

Lighting Assessment

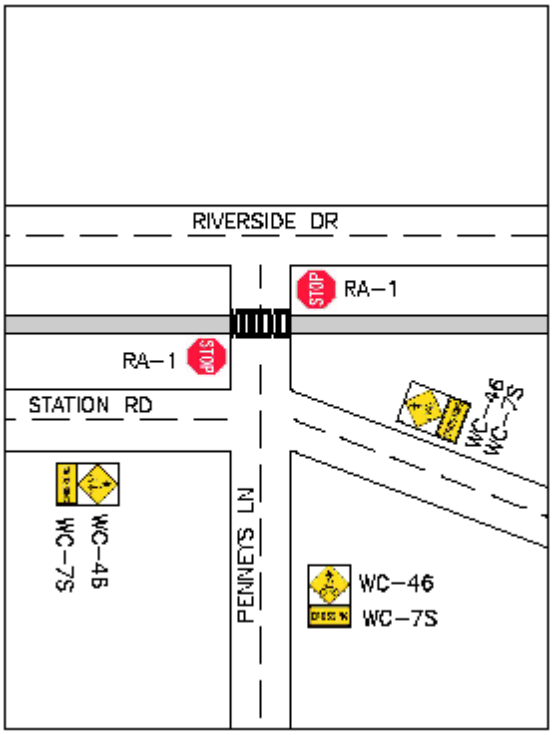
N/A

Recommended Components

- Twin parallel elephant feet paint markings
- Stop Signs on Trail
- Advance Warning Sign on Penneys Lane and Station Road (both approaches to crossing) (WC-46 with WC-7S tabs)
- Zebra Crosswalk markings

Recommended Layout

- Graded gravel or asphalt path recommended



18. Newfoundland T'Railway and Humber Road

Sight Evaluation

Preliminary Assessment

(Obtained from TAC Decision Support Tool For Pedestrian Crossing Control)

- *Are Traffic Signals Warranted at this location?* ***No***
- *Is average hourly ped volume greater or equal to 15 EAUs AND vehicular volume greater than or equal to 1,500 veh/day?* ***No***
- *Is this location on pedestrian desire lines or is there requirement for system connectivity?* ***Yes***
- *Is this site less than 'd' (100 to 200 m) from another traffic control device?* ***No***

Proposed Sight Distance

$$SD = \frac{\mathrm{V(W+4)}}{4.32}$$

With :

V= 50 km/hr

W = 24.8 m (approximated)

SD = 333.3 m

SD ~141 m East; ~280 m West

Sight Distance is not adequate. However, as this is a low volume roadway, the crossing is warranted.

Lighting Assessment

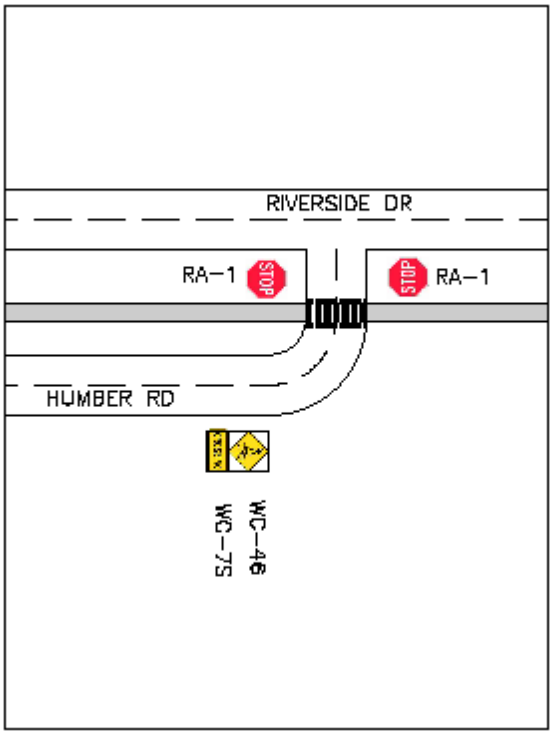
N/A

Recommended Components

- Twin parallel elephant feet paint markings
- Stop Signs on Trail
- Advance Warning Sign on Humber Road (WC-46 with WC-7S tabs)
- Zebra Crosswalk markings

Recommended Layout

- Graded gravel or asphalt path recommended



19. Newfoundland T'Railway and Stan Dawe Terrace

Sight Evaluation

Preliminary Assessment

(Obtained from TAC Decision Support Tool For Pedestrian Crossing Control)

- *Are Traffic Signals Warranted at this location?* ***No***
- *Is average hourly ped volume greater or equal to 15 EAUs AND vehicular volume greater than or equal to 1,500 veh/day?* ***No***
- *Is this location on pedestrian desire lines or is there requirement for system connectivity?* ***Yes***
- *Is this site less than 'd' (100 to 200 m) from another traffic control device?* ***No***

Proposed Sight Distance

$$SD = \frac{\mathrm{V(W+4)}}{4.32}$$

With :

V= 30 km/hr

W = 15.7 m (approximated)

SD = 136.8 m

SD ~185 m East; ~165 m West

Sight Distance is adequate.

Lighting Assessment

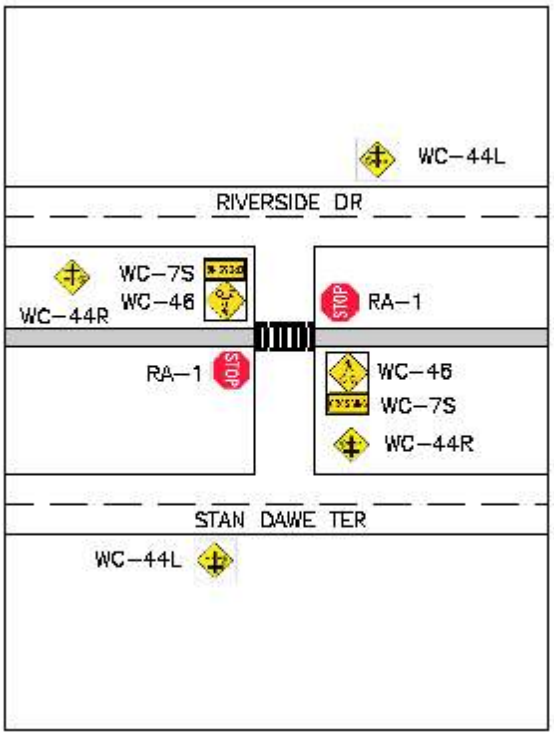
N/A

Recommended Components

- Twin parallel elephant feet paint markings
- Stop Signs on Trail
- Advance Warning Signs on Stan Dawe Terrace (WC-46 with WC-7S tabs)
- Zebra Crosswalk markings
- WC-44 Signs to be added, 2 on Riverside Drive, 2 on Stan Dawe Terrace

Recommended Layout

- Assess existing sidewalk conditions for the stretch between Humber Road and Stan Dawe Terrace for maintenance/repair or replacement
- Graded gravel or asphalt path recommended
- Care to be taken with existing parking on trail location
- Be mindful of existing sign locations and possible relocation on Riverside Drive



20. Newfoundland T'Railway and Trans Canada Highway 1 Westbound Off-Ramp

Sight Evaluation

Preliminary Assessment

(Obtained from TAC Decision Support Tool For Pedestrian Crossing Control)

- *Are Traffic Signals Warranted at this location?* ***No***
- *Is average hourly ped volume greater or equal to 15 EAUs AND vehicular volume greater than or equal to 1,500 veh/day?* ***Yes, from a vehicular volume perspective***
- *Is this location on pedestrian desire lines or is there requirement for system connectivity?* ***Yes***
- *Is this site less than 'd' (100 to 200 m) from another traffic control device?* ***No***

Proposed Sight Distance

$$SD = \frac{\mathrm{V(W+4)}}{4.32}$$

With :

V= 50 km/hr

W = 33.0 m (approximated)

SD = 428.2 m

SD ~253 m East; ~191 m West; 163 m South (Off-Ramp from Highway)

Sight Distance is not adequate. However, with vehicles slowing at this location, it is anticipated that safe movements can be made. The trail users should be visible to vehicular traffic in that vicinity.

Lighting Assessment

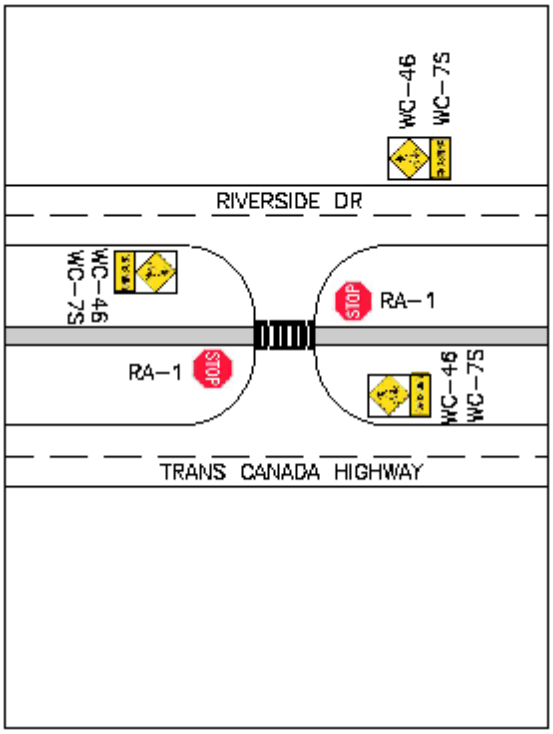
N/A

Recommended Components

- Twin parallel elephant feet paint markings
- Stop Signs on Trail
- Advance Warning Signs on Riverside Drive and Off-Ramp (WC-46 with WC-7S tabs)
- Zebra Crosswalk markings

Recommended Layout

- Graded gravel or asphalt path recommended



21. Newfoundland T'Railway and Parking Area Near Trans Canada Highway 1

Sight Evaluation

Preliminary Assessment

(Obtained from TAC Decision Support Tool For Pedestrian Crossing Control)

- *Are Traffic Signals Warranted at this location?* ***No***
- *Is average hourly ped volume greater or equal to 15 EAUs AND vehicular volume greater than or equal to 1,500 veh/day?* ***Yes, from a vehicular volume perspective***
- *Is this location on pedestrian desire lines or is there requirement for system connectivity?* ***Yes***
- *Is this site less than 'd' (100 to 200 m) from another traffic control device?* ***No***

Proposed Sight Distance

$$SD = \frac{\mathrm{V(W+4)}}{4.32}$$

With :

V= 50 km/hr

W = 12.0 m (approximated)

SD = 185.2 m

SD ~190 m East; ~360 m West

Sight Distance is adequate.

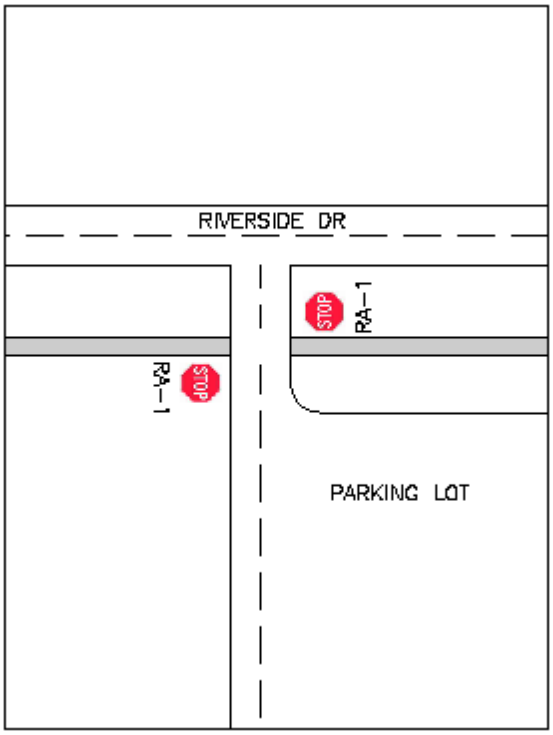
Lighting Assessment

N/A

Recommended Components

- Stop Signs on Trail Crossing

Recommended Layout



22. Newfoundland T'Railway and Trans Canada Highway 1 On/Off-Ramp

Sight Evaluation

Preliminary Assessment

(Obtained from TAC Decision Support Tool For Pedestrian Crossing Control)

- *Are Traffic Signals Warranted at this location?* ***No***
- *Is average hourly ped volume greater or equal to 15 EAUs AND vehicular volume greater than or equal to 1,500 veh/day?* ***Yes, from a vehicular volume perspective (estimated)***
- *Is this location on pedestrian desire lines or is there requirement for system connectivity?* ***Yes***
- *Is this site less than 'd' (100 to 200 m) from another traffic control device?* ***No***

Proposed Sight Distance

$$SD = \frac{\mathrm{V}(\mathrm{W}+4)}{4.32}$$

With :

V= 50 km/hr (assumed as it's in the vicinity of ramps)

W = 20.0 m (approximated)

SD = 277.8 m

SD ~307 m West (only direction of conflicting traffic)

Sight Distance is adequate.

Lighting Assessment

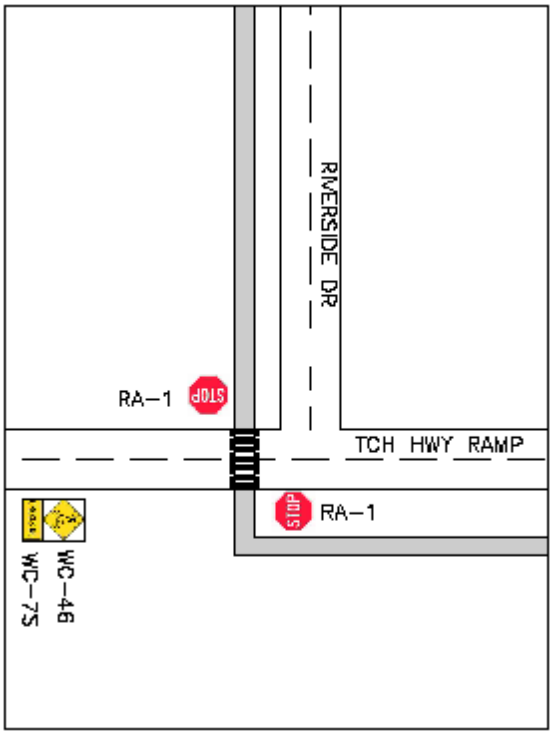
N/A

Recommended Components

- Twin parallel elephant feet paint markings
- Stop Signs on Trail
- Advance Warning Sign on Eastbound Off-Ramp (WC-46 with WC-7S tabs)
- Zebra Crosswalk markings

Recommended Layout

- Barrier separated multi-use trail required on ramp and along Highway. Barrier must be crash rated to NCHRP 350 TL-3.



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