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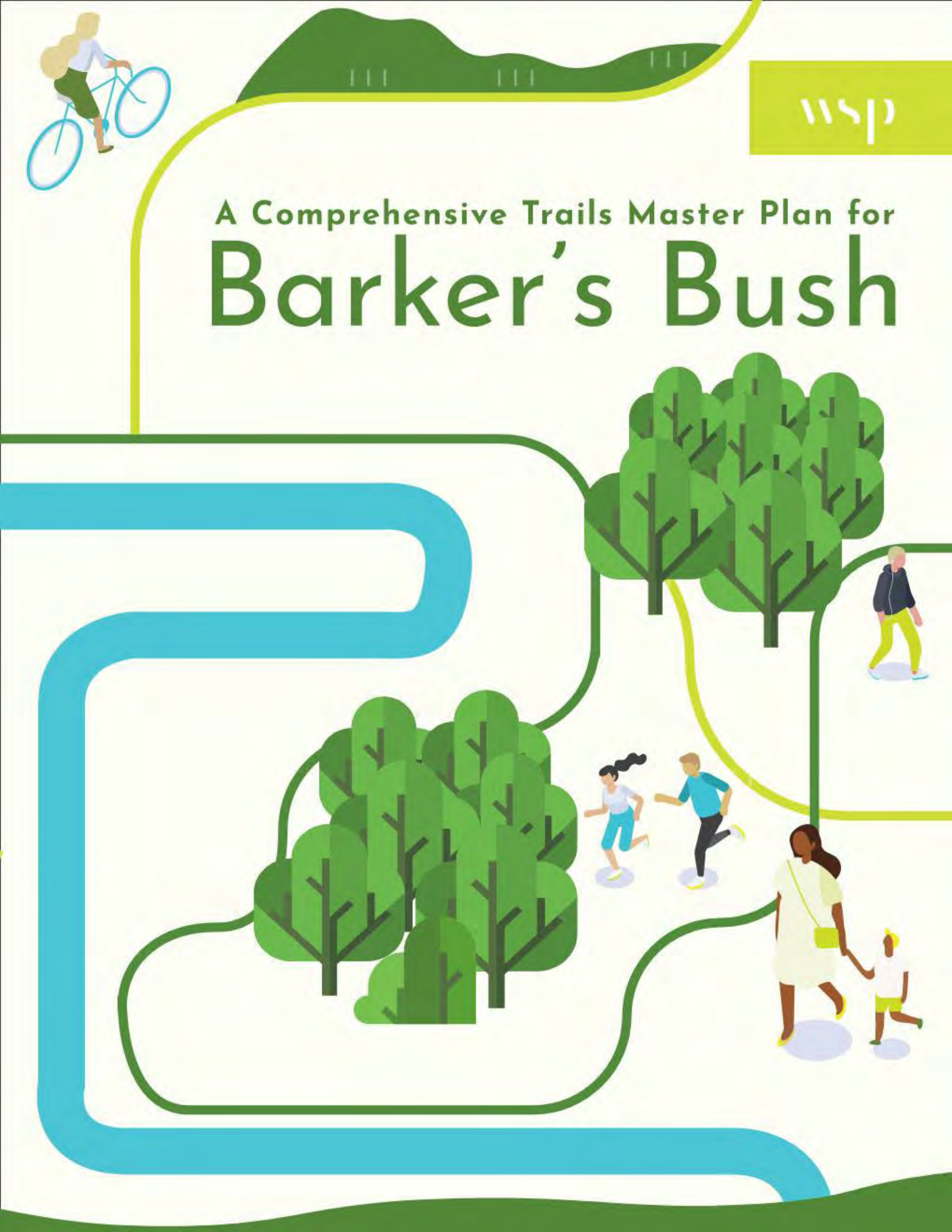
A Comprehensive Trails Master Plan for

Barker's Bush



BARKER'S BUSH COMPREHENSIVE TRAILS MASTER PLAN
DRAFT REPORT

County of Brant

Project No. 211-03518-00

May 2022

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INTRODUCTION

A Comprehensive Trails Master Plan for

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1 Introduction

1.1 History and Background

The County of Brant is creating a Comprehensive Trails Master Plan for Barker's Bush, the woodlot and open space network located west of Lion's Park in Paris, Ontario within the Nith River Peninsula. While an informal and extremely well-used trail network already exists within Barker's Bush, the land use adjacent to the site is changing rapidly and a clear strategy for the trail system is required in order to protect and enhance this resource.



Up until 2010, the area was privately owned. In 2019, the County of Brant acquired roughly 100 acres of land for preservation and protection. The remaining 98 acres of land is scheduled for development with a subdivision planned for the interior of the Nith Peninsula. Barker's Bush is and has remained a well-loved walking, hiking, and cycling destination by residents for decades. In peak season, Penman's Pass registered 15,000 passes in one month. Stakeholders such as the Brant Cycling Club and the Brant Pedalers and Paddlers group also use Barker's Bush regularly. As Barker's Bush is now under the ownership of the County of Brant, a more onerous duty of care is required by the County to ensure public safety on these recreational trails. A clear strategy for the trail system is required.

1840s-2005

The Barker's Bush name connects to early inhabitants of Paris. The Barker cobblestone home still stands near the end of Barker St. and was constructed in the early 1840s.

The area was farmed by the private owner.

2006-2018

Part of the property was purchased by a local developer in 2006.

Nith Peninsula Area Study completed along with Environmental Impact Study, Traffic Impact Study, Tree Management Inventory/Plan, and consultation with GRCA. Subdivision Plan submitted.

Property purchased by Losani Homes (Losani) in 2016. Studies and Subdivision Plan revised and submitted.

2019-Present

Losani filed appeal to Local Planning Appeal Tribunal (LPAT). Decision rendered in 2019 permitting 564 units to be developed.

County of Brant and Losani reach agreement in 2019 to transfer approximately 100 acres of land (Barker's Bush) to the County to be preserved and protected.

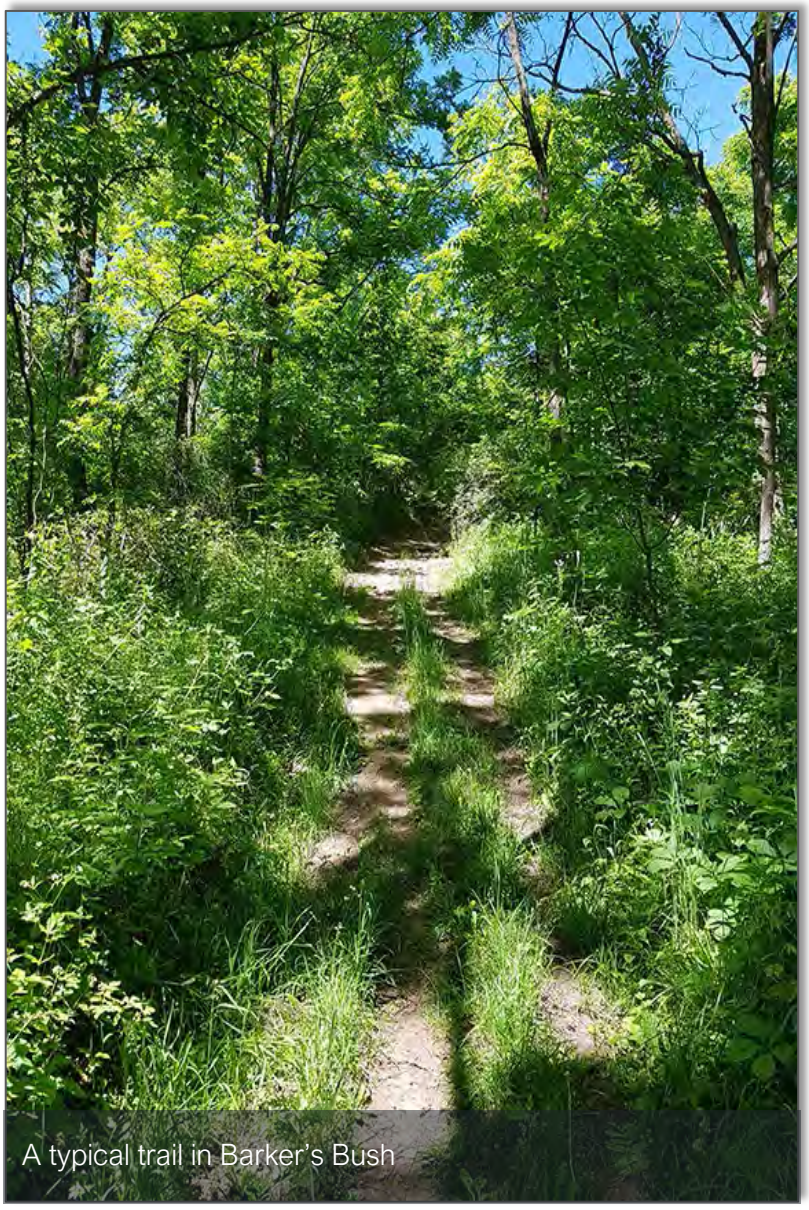
100 acre parcel is now publicly-owned and managed by County of Brant.

Losani is currently preparing final documents for subdivision agreement to be submitted to Council.

In 2021, WSP was retained by the County of Brant to develop a site-specific Comprehensive Trails Master Plan for Barker's Bush.

1.2 What is the Trails Master Plan?

The Barker's Bush Comprehensive Trails Master Plan (referred to as 'the Plan') provides a long-term strategy for the protection, management, and use of the trails within Barker's Bush. The Plan is intended to be used as a guide for protecting the natural features as well as managing existing and future conflicts.



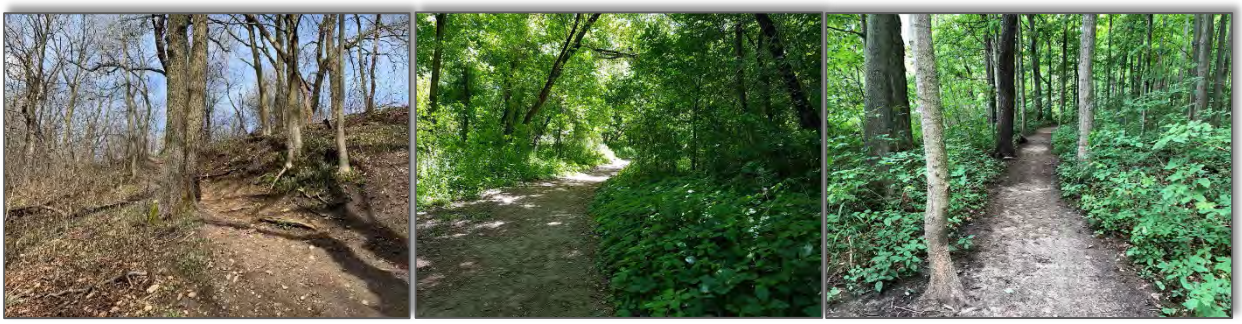
A typical trail in Barker's Bush

The Plan is being created for several reasons. Barker's Bush is highly utilized by the public with various, often conflicting, uses from hiking to unauthorized motorized off-road vehicles. Public interest is high from nearby residents and trail users, and the County understands the importance of Barker's Bush to the community. In addition, the peninsula is about to undergo rapid change with the development of its agricultural lands. The population in the area will increase dramatically and with that will come evolving usage trends. The County will be responsible for managing associated risks. Barker's Bush has a rich natural heritage, and while use might increase, the protection of natural features is a high priority for the County and many of its residents.

The Plan provides a foundation for the development of accessible, safe, and connected active transportation infrastructure and balances the needs of different user groups. It identifies long-term objectives and priorities to help preserve and protect the natural beauty and ecosystems within Barker's Bush, while also maintaining and enhancing the user experience.

1.3 Benefits of Trails

The importance of trail networks in any community cannot be understated. In light of emerging evidence that reveals increasing rates of physical inactivity, communities across the Province are striving to promote healthier lifestyles through accessible opportunities for physical activity. Walking and hiking are one of the simplest forms of physical activity and are often some of the most popular leisure activities pursued by residents. In addition, a connection to nearby nature is paramount for the well-being of residents. As a result, nature trails and walking paths, such as those found in Barker's Bush, are some of the most desirable amenities as they form a key component of quality of life and contribute immeasurable community benefits; some of these benefits are described below.



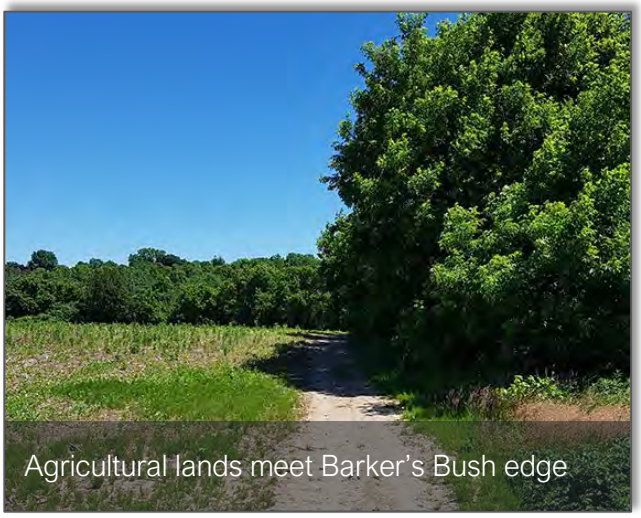
Physical health and well-being can be improved by a brisk walk in the woods or bike trip along a nature trail. These are top-of-mind issues due to increasingly busy schedules and the wide variety of sedentary activities that contribute to physical inactivity.

Utilitarian transportation trails can provide those without access to a vehicle (including youth and children) a safe environment to travel from one destination to another.

Nearby nature provides both physical and mental health benefits to those around it. Whether it be a borrowed view of trees on the horizon, or complete immersion in old growth forests, people are meant to be around nature.

Environmental benefits are vast when people choose to travel on foot, thereby reducing greenhouse gas emissions. Pedestrians and trail users are able to appreciate the surrounding natural heritage features and become stewards of their community.

Figure 1 shows the extent of the study area, ownership boundaries and existing formal and informal trail networks within the Nith Peninsula.



Agricultural lands meet Barker's Bush edge

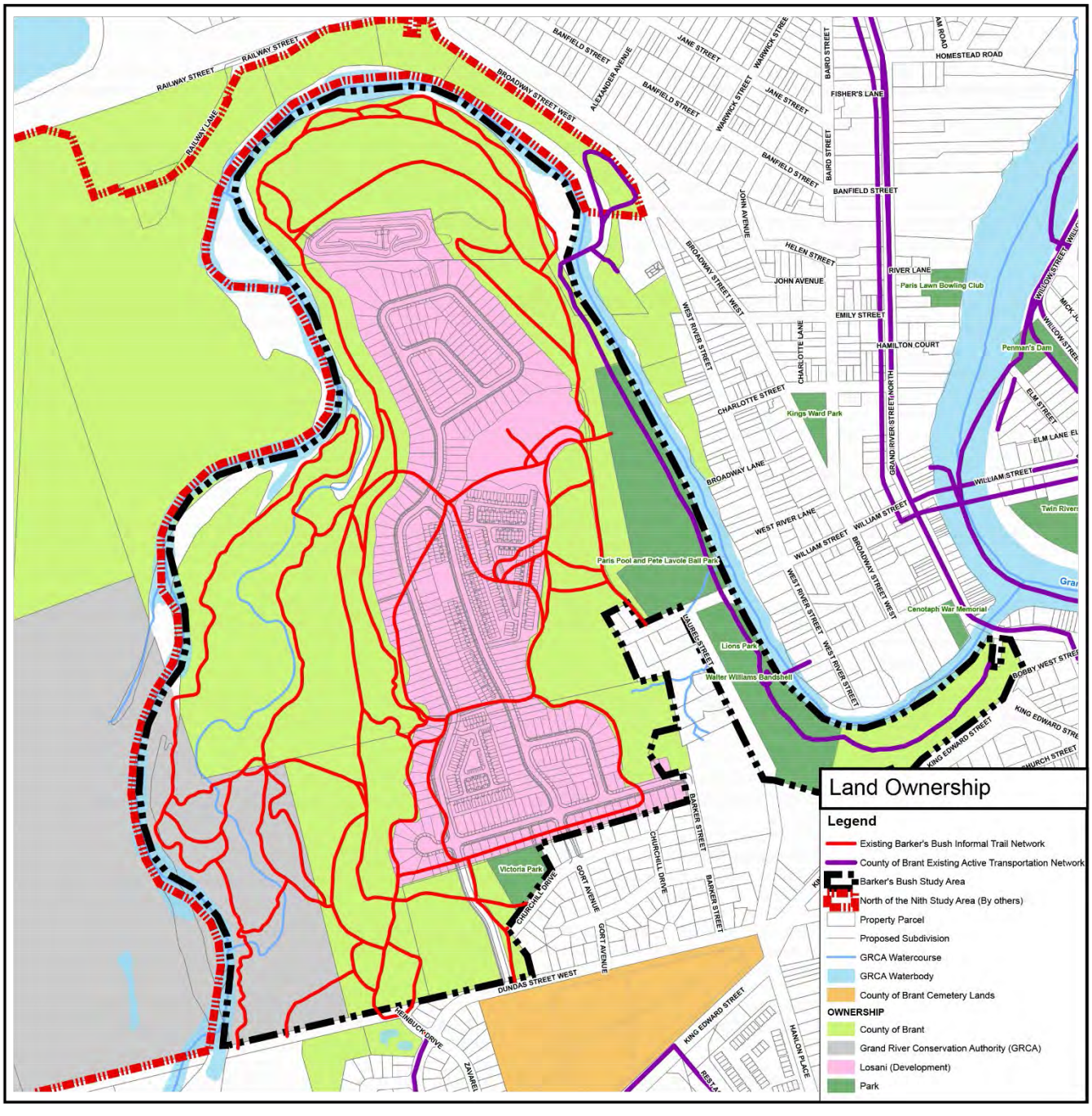


Figure 1 Barker's Bush Land Ownership

SECTION TWO

ABOUT THE TRAILS MASTER PLAN

A Comprehensive Trails Master Plan for
Barker's Bush

2 About the Trails Master Plan

2.1 Purpose

The County of Brant recognizes the importance of trails to the community. The Plan will provide a comprehensive strategy for the ongoing management and protection of one of the County's natural jewels, Barker's Bush. The purpose of the Plan is to act as a communication and management tool for Barker's Bush. The County will use the master planning process to engage citizens and residents interested in the area. The Plan will inform the programming, infrastructure, environmental stewardship, and operations/maintenance strategies to be implemented, along with steps for implementation.

The Plan objectives outlined below illustrate the fundamental directions for the Barker's Bush Comprehensive Trails Master Plan:

- Assess the current trail system and recommend possible route changes.
- Allow for increased public use without detrimentally impacting the area's overall conservation and environmental protection goals.
- Work collaboratively with landowners and trail users.
- Foster partnerships that enhance the trails, minimize risk and improve safety.

Open meadow next to Barker's Bush in the Nith Peninsula

- Map trails and improve wayfinding.
- Develop a system of signage and gateway trailhead areas throughout the area, with amenities such as trailhead information kiosks, markers, garbage containers, dog waste disposal, seating, mapping, and education.
- Develop a trail system framework that supports the wide range of trail users and provide a fun, safe trail network that allows for use during all seasons.
- Recognize ways of managing trail uses (including walking, hiking, cycling, cross country skiing and snow shoeing) in appropriate areas.
- Identify how to optimize existing trails and develop/ maintain links to provide a continuous network.
- Provide a planning and budgeting framework for trail upgrades, construction and maintenance.


A dirt trail amongst Black Maples

The Vision

- Define the area of Barker's Bush, including the location of boundaries, internal and external trail amenities and natural resources
- Manage existing and future user conflicts
- Protect and enhance the natural environment
- Identify potential trail and amenity upgrades while preserving the existing look and feel of the area
- Sustainable management

2.2 Why a Trails Master Plan for Barker's Bush?

The Plan provides long-term recommendations for County Staff and relevant partners to help guide the future preservation and management of the Barker's Bush trail network. The network is well used and valued by the Brant community. Future development around the area is expected to increase trail use as new residents discover the beauty of the trails. For the community members who have lived and enjoyed the trails for many years, its preservation as a natural trail system is very important.

2.3 Existing Trails in Barker's Bush


Eroded trail

Residents use the trail system in Barker's Bush extensively. They understand the value and importance of the trail network within the community and appreciate the role that it plays in the health and longevity of the natural ecosystem, health, and well-being of people, as well as the active transportation and recreation system. While there is a strong basis of understanding, there is still an appreciation for and interest in preserving much of the natural qualities of the area.

Existing Conditions mapping can be found in **Figure 2**. It outlines the existing trails and natural features in the area. Formal and informal trails have been documented and the study area has been outlined.


Nith River bank erosion

An extensive trail network exists within the Nith Peninsula. While there are paved trail connections, most trails are informal dirt paths, carved either by foot traffic or off-road motorized vehicles. The trails are used for hiking, walking, cycling, cross-country skiing, snow shoeing and horseback riding. Off-road vehicle use is also prevalent within the Nith Peninsula despite County Bylaws prohibiting ATV and dirt bike use on County property. Trails exist within the Losani development lands that will be removed by development. Informal trails also connect to the adjacent Grand River Conservation Authority (GRCA) property that are not sanctioned for use. Two trailheads exist on the eastern extent of the peninsula.

Several areas of concern were noted due to erosion on, or adjacent to trails. Erosion noted is two-fold. First, erosion has occurred in multiple locations adjacent to the trails due to scouring of river-banks by high flow events. Second, many of the trails have been carved by off-road motorized vehicles. While they act to tamp down vegetation and provide access, degradation, erosion and spread of invasive species can also be linked to this usage type. Many of the trails created by motorized off-road vehicles are within the GRCA regulated wetland.

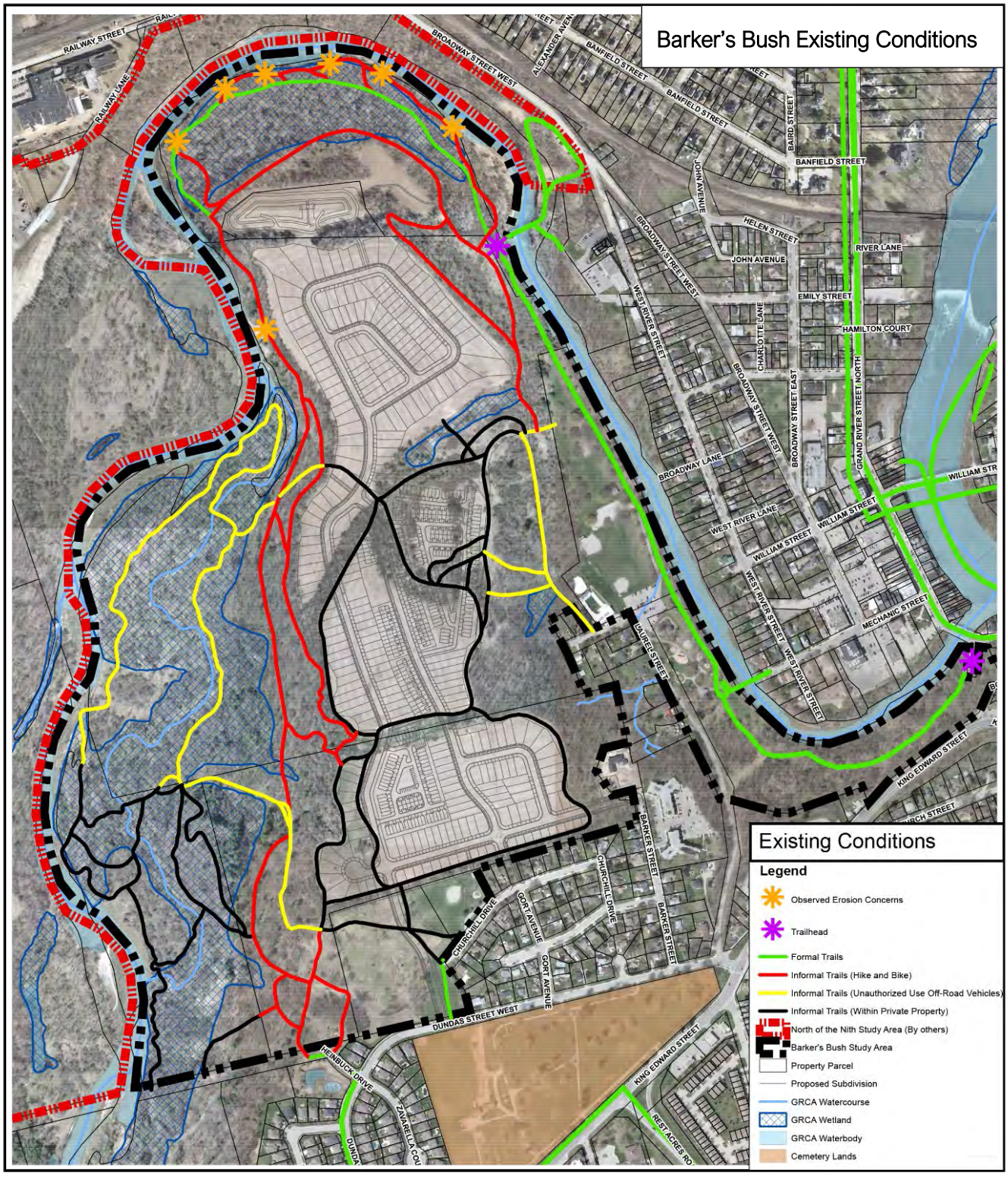


Figure 2 Barker's Bush Existing Conditions

The **Destinations and Access** map found below shows destinations surrounding Barker's Bush, as well as the key access points into the study area. Of note are the various connections to nearby residences, downtown Paris, public parks, and County facilities. Access points to the new development are marked. Several of the access points are unauthorized, including Nith River crossings and trails into GRCA lands. Of participants surveyed, most access Barker's Bush from Penman's Pass Pedestrian Bridge and Lion's Park.

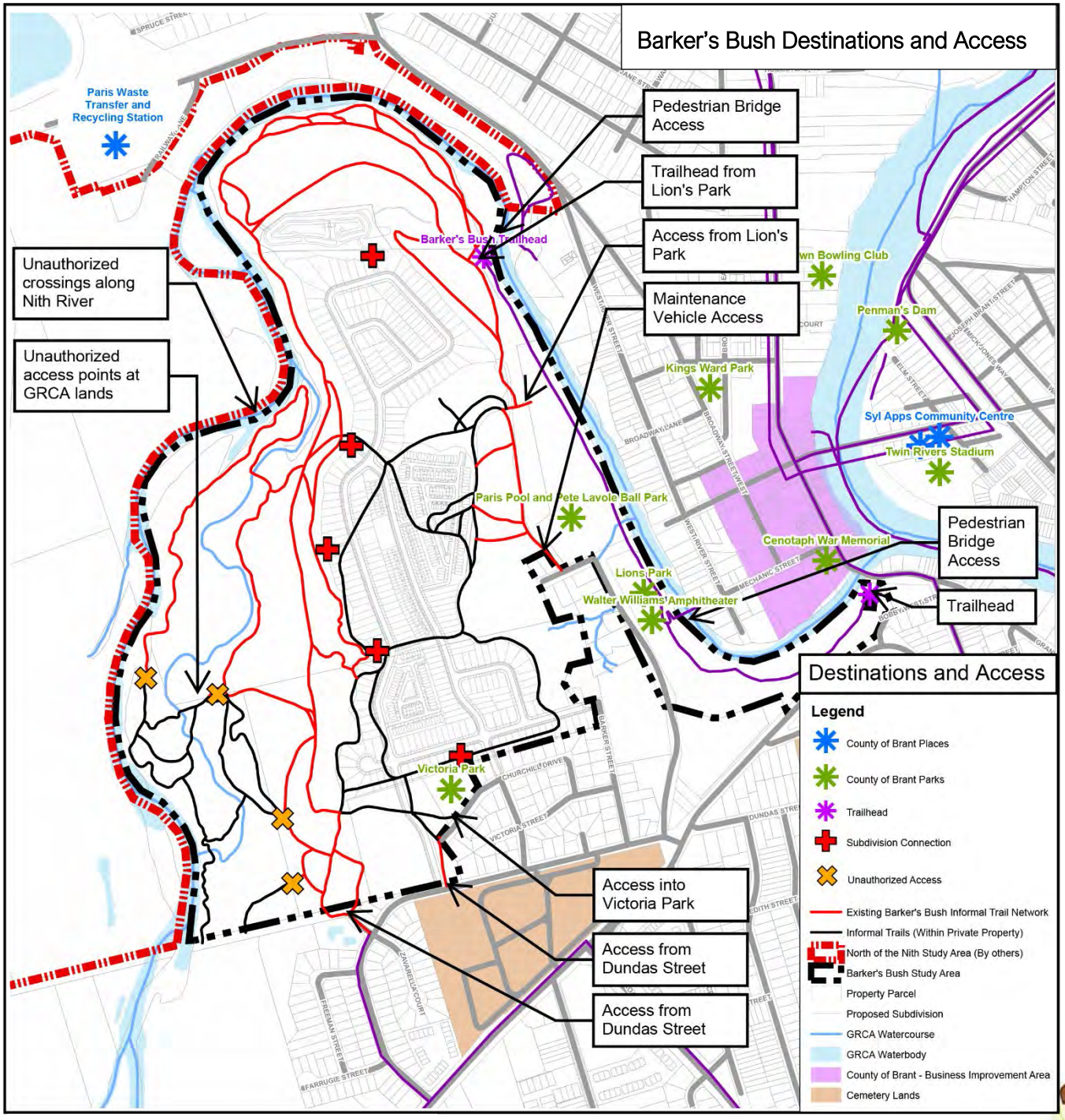


Figure 3 Barker's Bush Destinations and Access

2.4 Rationale for the Plan

Policies that support the development of trail, pedestrian, and cycling infrastructure can be found in several guiding documents. This section explores key policies and guidelines that are pertinent to the development of the Plan.

2.4.1 Policy Support

Section 5.3.4 of the County of Brant's Official Plan includes policies that relate to walking, cycling and trail systems within the County. To inform the development of the Plan, policies at each level of government were reviewed. Highlighted below are the relevant policies that relate to trails.

Policy A	*The County shall support the preparation of a Trails Master Plan for the County's trail system to identify a preferred on-road and off-road trail and cycling network to accommodate a variety of non-motorized activities including cycling, walking, and running. The Trails Master Plan should provide for the delineation of existing and proposed trail systems, linkages to natural heritage features, destinations, the County sidewalk system, specific trail standards and design criteria, among other matters.*
Policy B	*The County shall encourage community partnerships for acquisition, improvement(s) and maintenance of the trail system.*
Policy C	*The County may work towards providing safe bicycle and pedestrian paths, both separated from the roadway, on existing and proposed roads, on abandoned rail corridors, on utility corridors, and within parks and open spaces, as appropriate.*
Policy E	*The County shall undertake to interconnect existing walking trails and bicycle paths, where feasible and appropriate to provide continuous trail system linkages. Routes should provide continuous access between neighbourhoods, parks, schools, recreation facilities, along the Grand River, commercial and employment areas and other public buildings and services.*
Policy F	*The County shall promote accessible and convenient trail systems within a reasonable distance from neighbourhoods and major destinations.*
Policy G	*The County shall promote aesthetically pleasing trail systems, particularly for recreational purposes. Attention shall be given to trail systems associated with natural assets such as waterfronts, parks, and natural heritage features. Where it is possible, the planting of locally native species along these trail systems shall be promoted.*
Policy H	*The implementation of trail systems should be feasible given the consideration of the costs and benefits associated with the route selection. This should take into consideration the costs of healthy living, environmental sustainability, and the quality of neighbourhood character.*
Policy J	*The County shall implement and operate an effective trail system maintenance program.*
Policy M	*The County shall evaluate and promote walking systems in new development proposals and consider the overall connectivity of the system.*

Policy O	*In developing the trail system, consideration shall be given to impacts on hazardous lands, watercourses and natural heritage features such that any such impacts are eliminated or reduced to the greatest extent possible.*

Section 5.2 of the County of Brant's Recreation Master Plan includes policies that relate to Trails Planning within the County.

Policy P	*Recommends that the County of Brant implement the Nith Peninsula natural trails, mountain biking trail and connection with Paris Lions Park between 2019 and 2026.*

2.4.2 Guidelines

The County of Brant has developed and adopted several engineering standards, policies and guidelines which provide staff and partners with the necessary direction to plan, design and implement services and infrastructure throughout the County. Select standards and guidelines refer to the planning, design, and construction of trail infrastructure.

A comprehensive review of these guidelines and standards was completed as part of the development of the Comprehensive Trails Master Plan. The review was undertaken to ensure that guidelines align with current best practices in trail design and construction. The following is an overview of those resources.

The County of Brant Accessible Public Spaces Design Standards includes design standards that relate to Trail Design within the County.

Standard A	*Provides standards and guidelines for the accessible design of built environment, including recreational trails. The standards should be read in conjunction with the O. Reg. 191/11: Integrated Accessibility Standards.*

The County of Brant Wayfinding Strategy (Draft Final) includes design standards for Trails and River Access.

Standard B	*Specific to this strategy, trail access points (ie Trailheads or crossings) will be included. Trail identification and directional signs within the trail system are not part of this strategy.*

The County of Brant Trail Master Plan (August 2010, Revised October 2017) includes design standards for Trails. Aspects of this County-wide study were taken into account and given site specific context and additional detail in the Barker's Bush Comprehensive Trails Master Plan.

Standard C	*Provides a strategic direction for council, staff and the community in order to set priorities and guidelines for the future regarding trail development and planning. The final master plan identifies trail development priorities, a management process to facilitate development including guidelines, policies, partnerships, and the signage program and selection criteria.*

The following regulatory constraints apply to development of trails with the Nith Peninsula. Any new construction that takes place within the study area should take into consideration the following.

Constraint A	*Migratory birds are protected under the Migratory Birds Conventions Act (MBCA; 1994) and cannot be disturbed (including vegetation removals) during the nesting period.*

Constraint B	*Evaluated and unevaluated wetlands are identified within the project limits. Portions of the West Paris River Swamp Locally Significant Wetland (LSW) are found on the western and northern floodplain and adjacent to the subject property. Consultation with Grand River Conservation Authority (GRCA) is recommended if trail works are proposed within GRCA regulation limits to determine permit requirements.*
Constraint C	*Woodlands encompass nearly the entirety of the existing trail network. The Natural Heritage System as mapped in Schedule A-1 of the County of Brant Official Plan (2012) overlaps the woodland areas that have potential to be considered Significant. Development and site alteration within 45 m of the drip line of Significant Woodlands is not permitted unless it has been demonstrated that there will be no negative impacts on the features or functions. Tree removals should be avoided in significant woodlands to the extent possible.*
Constraint D	*The Nith River Forests Life Science Area of Natural and Scientific Interest (ANSI) as defined by the Ministry of Natural Resources and Forestry (MNRF) largely overlaps with the valleylands in the subject property which are also likely to be considered significant based on their ecological importance and function. Development and site alteration within 50m of this ANSI or Significant Valleylands is prohibited unless it has been demonstrated that there will be no negative impacts on the features or functions.*
Constraint E	*Where potential Species at Risk (SAR) habitat exists, the Ministry of the Environment and Parks (MECP) should be consulted to determine if additional mitigation or compensation is required to address requirements under the Endangered Species Act (ESA).*
Constraint F	*Any in or near water works should adhere to the warmwater construction timing window which permits work from July 16th to March 14th of any given year (no in or near water works from March 15th to July 15th of any given year). Note that this timing window is preliminary and will need to be confirmed by MNRF and/or GRCA during design of any needed in or near water works.*
Constraint G	*If any trail works require works below the high-water mark of the Nith River (i.e. for bank stabilization/rehabilitation), or the secondary channel (i.e. for crossing structures etc.) a Request for Review of the proposed works should be completed and submitted to DFO for their review under the Fisheries Act to ensure that death of fish and/or a Harmful Alteration, Disruption or Destruction (HADD) of fish habitat is avoided.*
Constraint H	*If there are any works proposed below the high water mark for the Nith River or the secondary channel (including any temporary footprint impacts associated with Erosion and Sediment control measures), an assessment of the potential to impact Silver Shiner critical habitat, or Silver Shiner or Black Redhorse individuals will need to be reviewed with MECP under the Endangered Species Act, as well as DFO under the Species at Risk Act, as both species are listed as Threatened provincially and federally. Specific mitigation measures and overall benefit/off-setting plans may be required to address potential impacts under each permitting process. Early discussion with each reviewing agency is encouraged to minimize the potential for lengthy delays in the construction of the works.*

SECTION THREE

COMMUNITY ENGAGEMENT

A Comprehensive Trails Master Plan for

Barker's Bush

3 Community Engagement

As part of the development of the Trails Master Plan, a round of consultation was undertaken with stakeholders, members of the public and municipal staff to gain a better understanding of the community support and vision for the Barker's Bush Trail network.

3.1 Public Information Centre (PIC) #1

As part of the Plan, a virtual public information centre was held on June 17, 2021 using the online meeting platform Zoom supplemented by the online engagement tool Mentimeter. This event provided an opportunity for residents to meet the project team and to learn more about the project background, existing site conditions, project objectives and next steps. This event also provided an opportunity for participants to voice their opinions, ask questions and address concerns related to the project. Participants at the PIC were asked to respond to a broad range of questions regarding personal trail usage, preferences and priorities related to the Barker's Bush trails network. More specifically, questions covered topics such as access, transportation, favourite characteristics, trail use, barriers to use, and user conflicts.

Key Takeaways:

- Most participants value the current look and feel of Barker's Bush and do not want extensive change.
- Most participants want the trail surfacing to remain as is.
- Most participants access Barker's Bush from Penman's Pass and Lion's Park.
- A little over half of respondents travel to Barker's Bush by walking and just under 30% by vehicle, whereas less than 20% travel by bicycle.
- Respondents value the wildlife and nature, as well as the trail network and the tranquility of the area.
- Barker's Bush is popularly used for walking/hiking and dog walking.
- Participants identified ATVs, litter/dumping and off-leash dogs as common conflicts.
- The most supported strategy for managing conflicts is increased off-road motorized vehicle restrictions.
- Common barriers to trail use were identified as housing development, seasonally muddy trails, ATV trail damage. That said, many respondents experienced no barriers to using the trails.

3.2 Public Information Centre (PIC) #2

A second virtual public information centre was held on December 15, 2021 using the online meeting platform Zoom. This event provided an opportunity for residents to learn about the recommendations made in the Draft Comprehensive Trails Master Plan. This event also provided an opportunity for participants to voice their opinions, ask questions and address concerns related to the project. Participants at the PIC were asked to respond to targeted questions regarding proposed trail classifications, trail network, amenities, implementation, maintenance and partnerships/coordination.

Key Takeaways:

- Most participants agreed with the recommended trail closures in environmentally sensitive areas.
- Most participants supported the recommended trail network.
- Most participants supported the proposed trail classifications.
- Wayfinding, accessibility and regulatory signs, were seen as the highest priority item. Followed by a combination of trailhead signs, trail closures for safety, trail closures with edge protection, naturalization planting and invasive removals.
- Most participants agreed with the strategy to address unauthorized motorized vehicle use.
- Most participants supported the recommended invasive species removal strategy.
- Concerns were raised that the area would be "over signed."

3.3 Engage Brant Virtual Survey

An online Survey was available from May 2021 to July 2021 and again in December 2021 to February 2022 through the *Engage Brant* webpage. The survey collected input with respect to trail usage, preferences, opinions, concerns, and priorities. A total of 44 surveys were completed and analysed. More specifically, questions covered topics such as signage and wayfinding, trail use frequency, single use section support, amenities, motorized use support and environmental protection.

Key Takeaways:

- The trails are commonly used daily to weekly all year round by survey respondents
- Common modes are walking, hiking and cycling
- For most respondents the trail system at Barker's Bush is a destination rather than a throughway
- The majority of respondents are not in favour of identifying single use trail sections
- Desirable amenity upgrades include waste receptacles, wayfinding signage and benches
- Many respondents do not support one-way directional signage for cyclists
- Most respondents do not support a special trail type dedicated to ATV/other motorized use

3.4 First Nations of the Grand River Consultation

Three meetings were held between WSP, County of Brant Staff and members of the First Nations of the Grand River Elected Council. Meetings focused on setting out a process for evaluating the report priorities, goals, implementation strategy and rationale. As a first stage, a list of priorities and related goals for The Plan were laid out. As a second stage, they were followed by proposed related implementation strategies and rationale.

Key Takeaways:

- The GRCA regulated wetland should not receive additional access, and therefore the boardwalk should not be proposed there.
- Goals should be measurable and time-bound.
- Implementation strategies require research based rationale.

- Implementation measures, including invasive removals, trail closures, trail installation, habitat enhancements and off-road motorized vehicle deterrence, should be monitored regularly to gauge success.
- Consider habitat enhancements.
- Choose site appropriate native species for planting enhancements.
- Six Nations of the Grand River would like to be a partner in the future of Barker's Bush.
- Give moral consideration to non-human species.
- Define sensitive areas.
- Give consideration to Indigenous peoples gathering medicinal plants within Barker's Bush and do not discourage their access.

3.5 Stakeholder Interviews

Four stakeholder interviews were held in May 2021 with numerous representatives from recreation clubs, condominium corporations, Ontario Provincial Police (OPP), Grand River Conservation Authority (GRCA), Councillors, and County staff. Interviews were conducted in groups over Zoom. Participating stakeholders included:

User Groups Interview (May 19, 2021)

- Brant Cycling Club
- Brant Waterways Foundation
- Brant Pedalers and Paddlers
- Brant Death Racers (Running Club)
- Great Lakes ATV
- Local Condo Corporations

County Staff, OPP and GRCA (May 19, 2021)

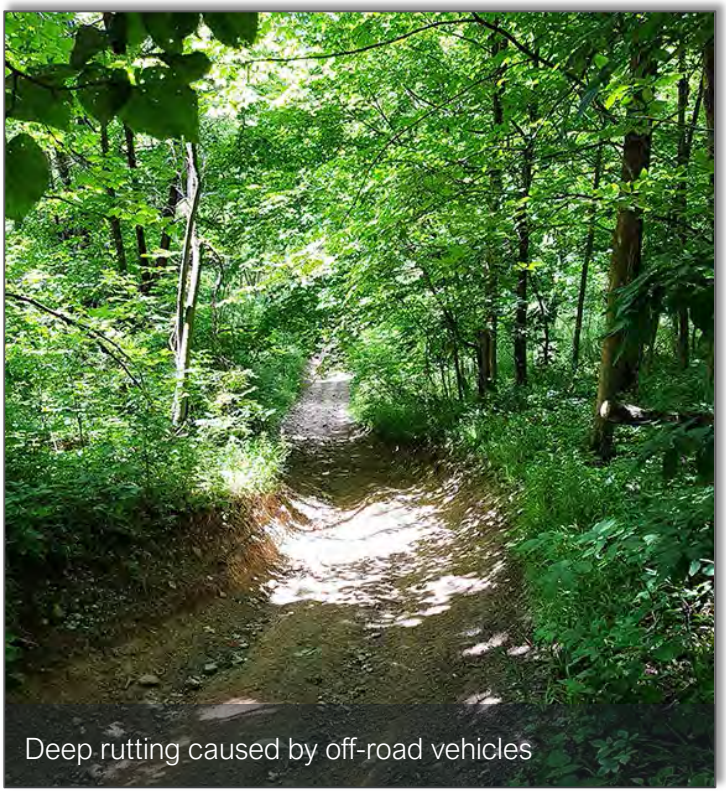
- County Staff
- Representatives from the OPP and GRCA

County Councillors (May 26, 2021)

- Mayor David Bailey
- Councillor Mark Laferriere
- Councillor Steve Howes
- Councillor John McAlpine
- Councillor John Bell

County of Brant Senior Staff (May 26, 2021)

- Senior staff members from the County of Brant


Deep rutting caused by off-road vehicles

The presentation and discussion focused on the present and future of Barker's Bush, including current use, concerns, boundaries, user conflicts, environmental preservation, and proposed amenities. Participants were asked for their input on the community benefits of Barker's Bush, personal usage, design considerations and issues. The discussion notes and stakeholder feedback can be found below.

Topic	Stakeholder Input

What are the community benefits?	• Natural Environment
	  o Main theme in all interviews
	  o Great for people and fauna
	  o River frontage and access
	• Connection to outside trail networks and subdivisions
	• Various user difficulty levels
	• Great community interest
	• Multi-use

What are the current usages?	• Used in all seasons • Walking/Hiking • Mountain Biking • Cross-country skiing • Dog Walking • Off-road Motorized Vehicles (unauthorized)

What design aspects should be considered?	• Trails surfacing:
	  o Almost 100% of those interviewed want it to remain as dirt trails.
	  o If any trails are paved it should be a short stretch to a lookout or those that connect to the development
	  o Some agreed that mulch on certain portions of trail could be useful
	  o Boardwalks through wetlands could be considered where it serves to protect the natural environment
	• Preserve and restore natural environment
	• Improve natural environment instead of using built form
	• Signage
	  o Signage may be needed to avoid liability in hazardous locations (River erosion areas)
	  o Simple, clear signage that fits in with the natural environment
	  o Some interpretive (natural and cultural heritage), wayfinding, trailhead signage would be welcome, but it is important not to over-sign / overregulate the area
	  o Signage to explain any trail closures
	• Design for safety of children
	• Attempt to cut off access for off-road motorized vehicles
	• If waste receptacles are provided, they should be limited to trailheads
	• If seating is provided it should be compliant with AODA
	• Consider installing memorial benches and trees
	• One-way travel or single use trails should not be considered
	• Some grooming and maintenance of trails is required
	• Consider physical barriers made with natural materials for safety around eroded banks of the Nith River

What issues have you encountered?	• Unauthorized motorized vehicle use on County and GRCA lands • Difficulty in keeping unauthorized motorized vehicles off County lands • Trespassing on GRCA lands • Discontent with upcoming development within the Nith Peninsula • Concerns regarding unlawful behaviour including late night noise, littering and bush parties/fires • Maintenance staff will need to upkeep any trails upgrades in Barker's Bush • Cleanup of temporary structures built in woodlot

	• Status quo usage with increase of development population will diminish quality of Barker's Bush • Potential for clash between current trail users and future residents • Concern about people trespassing on private land from Barker's Bush • Safety for young users • Concern with accidents caused by multiple active/passive trail uses • The liability of off-road motorized vehicle use within Barker's Bush is too high • Invasive species are being introduced • Concern that fauna is being pushed out by human use • Trails created by usage in environmentally sensitive areas • Pet waste left on or next to trails • Major erosion has taken place on numerous points along the Nith River • There are multiple ATV crossings of the Nith River along the south-west edge of Barker's Bush
Other	• Reconstruction of Laurel Street will provide better cycle and pedestrian access to Lion's Park • County staff have reiterated that the public will have the best ideas and connection to what is needed for Barker's Bush • County needs to assess a reporting mechanism for new hazards encountered • Consider an agreement with the GRCA for use of their lands to extend usable trails • Need operational plan for maintenance • Need a clear plan for communicating why off-road motor vehicle use cannot happen in Barker's Bush • This project should be seen as a good news story about how the County was able to save the woodlot from development • Prefer not to see gentrification of Barker's Bush • ATVs should be seen as trespassers on government land • It will be difficult to break habits of destructive use • The County should consider promoting off-road vehicle use on other sites

Table 1 Summary of Stakeholder Interview Questions and Responses

3.6 Key Themes

The following is a summary of the key themes that emerged out of the Public Information Centre, Engage Brant survey, and the Stakeholder interviews.

3.6.1 Protection and Preservation of the Natural Environment

Survey responses and feedback shared by stakeholders and residents indicated that the natural environment, especially environmentally sensitive areas such as the GRCA Regulated Wetland, a Natural Heritage Feature (Ecolands, 2008), known as the West River Paris Swamp (Stephenson and Kroetsch 1988 in NHIC 2007) that contains a Provincially Rare Vegetation Community. The restoration and protection of natural areas was favoured over the development of amenities and built forms. Survey respondents indicated a high level of support for the closure or realignment of portions of the Barker's Bush

Beebalm in Barker's Bush

trail system to protect environmentally sensitive areas, while allowing movement of wildlife and gathering of medicinal plants by indigenous people. Habitat creation opportunities, such as bat boxes and tree planting should be considered.

3.6.2 Restrict Unauthorized Motorized Vehicle Use

Vehicle debris in Barker's Bush

Survey responses and stakeholder feedback indicated that unauthorized ATV and other motorized use of the Barker's Bush trail network should be restricted to protect the natural habitat and minimize erosion of banks and trails along the Nith River. Survey responses showed little to no support for a special trail alignment designation for ATV/other motorized vehicle use. Similarly, ATV use was a commonly listed conflict issue identified during the PIC Mentimeter live polling. Respondents indicated concern around ATV noise and the danger of being run off the trail by ATV users.

3.6.3 Keep Barker's Bush Natural & Relatively Untouched

Stakeholder, community resident, and survey participant comments suggested a desire to maintain the natural experience that Barker's Bush currently offers. Stakeholders indicated that asphalt and limestone trail surfacing was not desirable and that trails should be left natural. However, asphalt and limestone trail surfacing could be considered at connection points to development or in strategic areas. Comments received during the survey indicate that garbage clean up would be supported, however maintenance and beautification efforts should be kept minimal. Signage should be simple and unobtrusive. The consensus was to preserve the current, natural beauty of Barker's Bush and to only do the upkeep necessary to keep the trail safe for users.

Example of simple unobtrusive trail signs

3.6.4 Do Not Restrict or Prohibit Trail Flows

There was little to no support from survey respondents for one-way directional signage for cyclists or for single use trail sections within Barker's Bush. Comments received in the survey indicated that respondents did not want to limit trail flows and enjoy the current free-flowing traffic on the trail network in Barker's Bush.

SECTION FOUR

THE TRAIL NETWORK

A Comprehensive Trails Master Plan for

Barker's Bush

4 The Trail Network

4.1 Vision

A vision statement was crafted to reflect the County's intent to guide the future preservation and management of Barker's Bush trail network and respond to community needs expressed throughout this process.

"To refine the trail system within Barker's Bush to protect and enhance its natural and cultural features, while responding to the changing land use of the Nith Peninsula."

4.2 Defining Barker's Bush

This study reviews the informal trail network and natural areas within the Nith Peninsula. One of the main study objectives is to define the area of Barker's Bush, including the location of boundaries, internal and external trail amenities, and natural resources. This objective strives to provide an area to which the County of Brant can focus its efforts. Trail upkeep, new trail network construction, accessibility measures, safety upgrades, environmental enhancement, maintenance plans and new amenities should be strategically focused to maximally preserve and enhance Barker's Bush. Figure 20 outlines the area of focus.

In addition to defining the physical boundary, naming is necessary to communicate to the public that the area is actively under the management and oversight of the County. The name Barker's Bush shows what this area is intended to be, and in doing so, communicates anticipated programming and acceptable usage types.

Barker's Bush will be preserved and enhanced with a special focus on the natural environment. Decisions on trail implementation, resource management and maintenance will all be viewed through this lens. The name should be included on signage installed henceforth, as well as in any communication with the public.

4.3 Natural Heritage and the Trail Network

The Barker's Bush Trails Ecological/Land Resource Plan was developed to inform the Plan. An ecological study was undertaken which reviewed the policy framework, completed a field program to update ecological land classification mapping and identified potential constraints, enhancements areas and sensitive features within the Nith Peninsula. Recommendations made align strongly with public feedback.

Black Walnut in the Barker's Bush western Lowlands

Site investigations were performed to review natural heritage components on June 16, 2021 and July 18, 2021. A single season, high-level botanical inventory and Ecological Land Classification (ELC) vegetation community/community series assessment was conducted on the subject property. These surveys documented the characteristics of the natural and culturally influenced vegetation communities, with a focus on the trails within the natural areas.

Aquatic field investigations were conducted by WSP staff on March 14, 2021, and concurrently with the vegetation and wildlife surveys completed throughout the subject property. WSP biologists visually assessed the aquatic habitat conditions of the Nith River and all the tributaries encountered throughout the subject property including the secondary channel flowing through the West Paris River Swamp and the groundwater fed tributary draining the east portion of the tablelands near the park and Paris Community Pool.

The study identifies the existing site conditions as they relate to:

- Physiography, Drainage, Hydrology & Soils
- Natural heritage features and designations
- Species of conservation concern (SCC)
- Vegetation and Flora
- Wildlife species and species at risk
- Significant wildlife habitat
- Aquatic resources

A view of the Nith River from Barker's Bush

Vegetation and wildlife of Barker's Bush are highlighted on the following pages for aesthetic, public interest and ecological value. Opportunity exists to highlight these flora and fauna through educational interpretive signs. The preservation of Barker's Bush by the County of Brant will itself preserve species habitat, but additional physical and education-based protection are considered below.

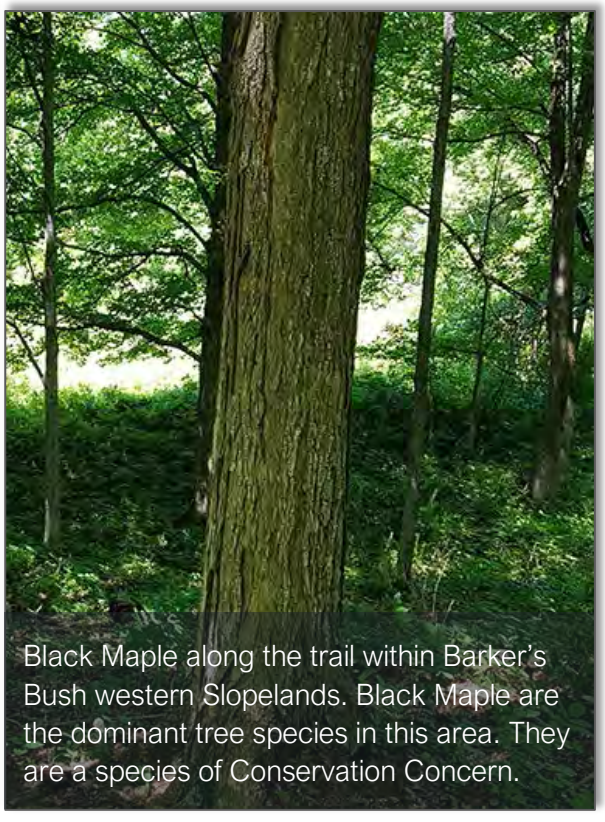
4.3.1 Barker's Bush Western Slopelands

The western slopelands within Barker's Bush contain many Black Maple, White Pine and Oak species of significant size and age. Many are greater than 50cm in Diameter at Breast Height (DBH), with some specimens even reaching the 75-100cm DBH range. Of these species, Black Maple is considered a Species of Conservation Concern. This vegetation community has a high botanical value and is a highlight of the Barker's Bush experience.

The effects of off-road vehicle use are less noticeable in this area than in the adjacent wetlands. While current levels of pedestrian and cycling use are not degrading this mature canopy, elevated levels due to nearby population increase may put pressure on this woodland. Mitigation through management and education are important steps toward preservation in the face of changing use.

Multi-stem mature Red Oak within Barker's Bush western Slopelands.

A mature White Oak along the trail within Barker's Bush western Slopelands. White Oak is one of the dominant species in this area.



Black Maple along the trail within Barker's Bush western Slopelands. Black Maple are the dominant tree species in this area. They are a species of Conservation Concern.

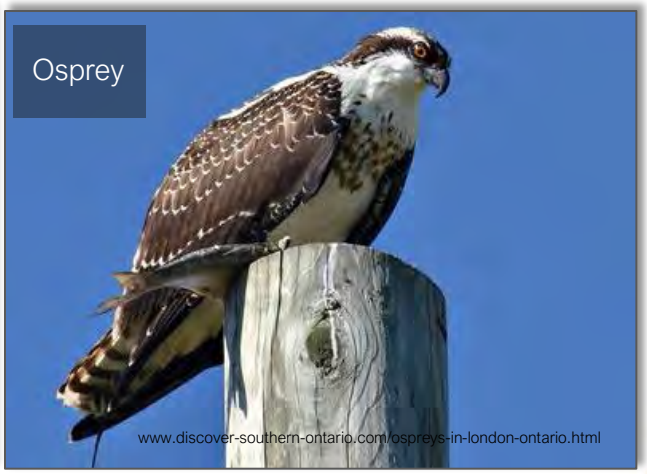
4.3.2 Barker's Bush Western Lowlands

Michigan Lily captured in bloom in early July 2021 within the Barker's Bush western Lowlands. It is one of several species of Conservation Concern found in this area.

The Barker's Bush western lowlands are a GRCA evaluated wetland. It contains vegetation communities that are provincially rare. They have been disturbed by off-road vehicle use and are subject to erosion and the spread of weedy/non-native species along paths. The lowlands found in Barker's Bush are of note due to the sensitive nature of wetlands, the presence of species of concern, and the existence of a provincially rare vegetation community. While this area will not be removed by development of the agricultural lands within the NIth Peninsula, the high usage by off-road motorized vehicles still poses a significant risk to its preservation. Opportunities and constraints related to the preservation of this area are detailed in Section 4.3.4 and Figure 4. Human use should be balanced with the preservation of these significant features. The remote nature of the lowlands and the relative ease with which the Nith River can be crossed by off-road motorized vehicles pose a unique challenge for preservation.

4.3.3 Wildlife Observed in Barker's Bush

Wildlife observation was completed during all ecological field investigations. Incidental observations were recorded. Additionally, Bank Swallows, a species at risk, were identified visually during a targeted investigation on July 8th, 2021. They were observed foraging over the Nith River near potential nesting habitat along the eroded steep banks. While Barker's Bush provides typical potential habitat for 22 species at risk, Bank Swallow was the only one identified during the investigations. Species noted during the field surveys can be found below.



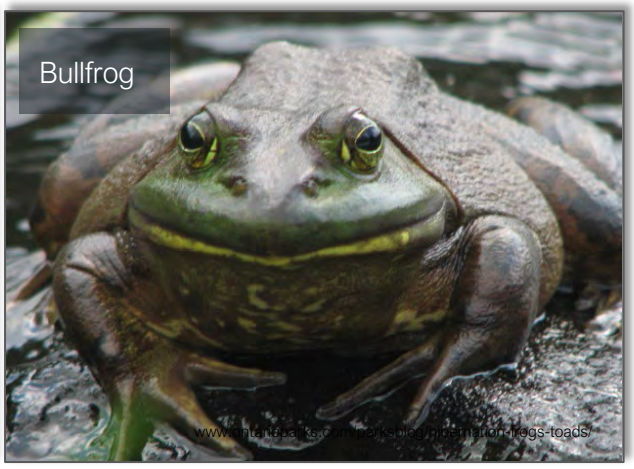

King Fisher
www.allaboutbirds.org/guide/Belted_Kingfisher/id


Catbird
www.allaboutbirds.org/guide/Gray_Catbird/id


Blue Heron
www.allaboutbirds.org/guide/Great_Blue_Heron/id


Northern Watersnake


Grey Tree Frog
www.wildlifeillinois.org


Bullfrog

4.3.4 Ecological Opportunities and Constraints

The Ecological/Land Resources Plan identified several opportunities and constraints that have been considered in the planning and development of the Trails Master Plan:

Terrestrial

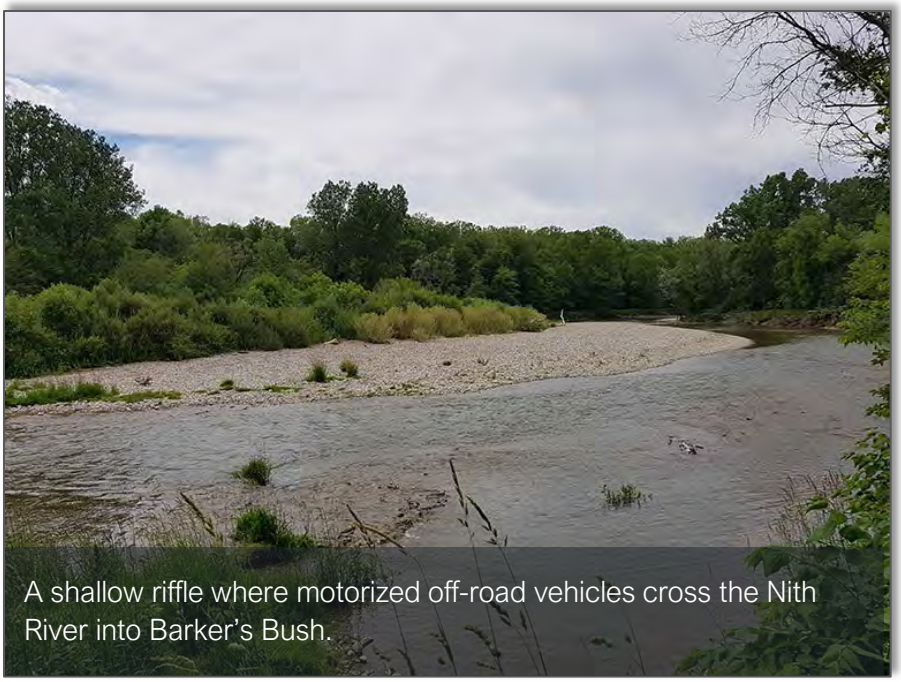
Eroded bank along Nith River. Considered potential nesting habitat for Bank Swallow, a species at risk. An informal trail currently exists at the top of bank.

The terrestrial constraints were found to include nesting of migratory birds, wetlands, woodlands that encompass nearly the entirety of the existing trail network, valleylands, and areas of natural and scientific interest (ANSI), endangered and threatened species habitat, and significant wildlife habitat for which development and site alteration within 50 metres is prohibited during active nesting. Any construction within wetlands would require consultation with the Grand River Conservation Authority (GRCA). All construction within potential endangered species habitat would require consultation with the Ministry of the Environment, Conservation and Parks (MECP).

Potential opportunities to further protect or enhance the terrestrial environment include trail rerouting of existing or unofficial paths that have potential to negatively impact wetland drainage, restoration/trail closure planting of native species, and the inclusion of educational and closure signage. Opportunities are referenced in **Figure 4,** the **Ecological/Land Resources Opportunities Plan**.

Aquatic

The Nith River and the secondary channel support a warmwater thermal classification. As such, in-water works must adhere to the warmwater construction timing window. Further constraints relate to trail works occurring below the high-water mark to ensure endangered aquatic species are not threatened and that fish species and fish habitat are protected. The window must be confirmed by the MNRF and/or GRCA prior to works. A Request for Review of any proposed works in or near the highwater level of the Nith River must be submitted to the Department of Fisheries and Oceans (DFO). Additional review is required by the DFO and MECP regarding provincially and federally threatened species under the Species at Risk Act.



A shallow riffle where motorized off-road vehicles cross the Nith River into Barker's Bush.

Opportunities were outlined in the Plan which include elimination of the fording opportunities of the creek to protect the fish and aquatic habitat along the bank of the Nith. Alternatively, crossings could be kept as part of the trail system but limited in number with proper crossing structures (i.e. bridges or culverts) developed to eliminate fording of open channels.

The Nith River's banks have experienced considerable slumping, and erosion as a result of the soil material. To maintain the trail system and improve user safety, considerations should be made to relocate the trail system away from the top of the banks further back to a more suitable location. Opportunities are referenced below in **Figure 4,** the **Ecological/Land Resources Opportunities Plan**.

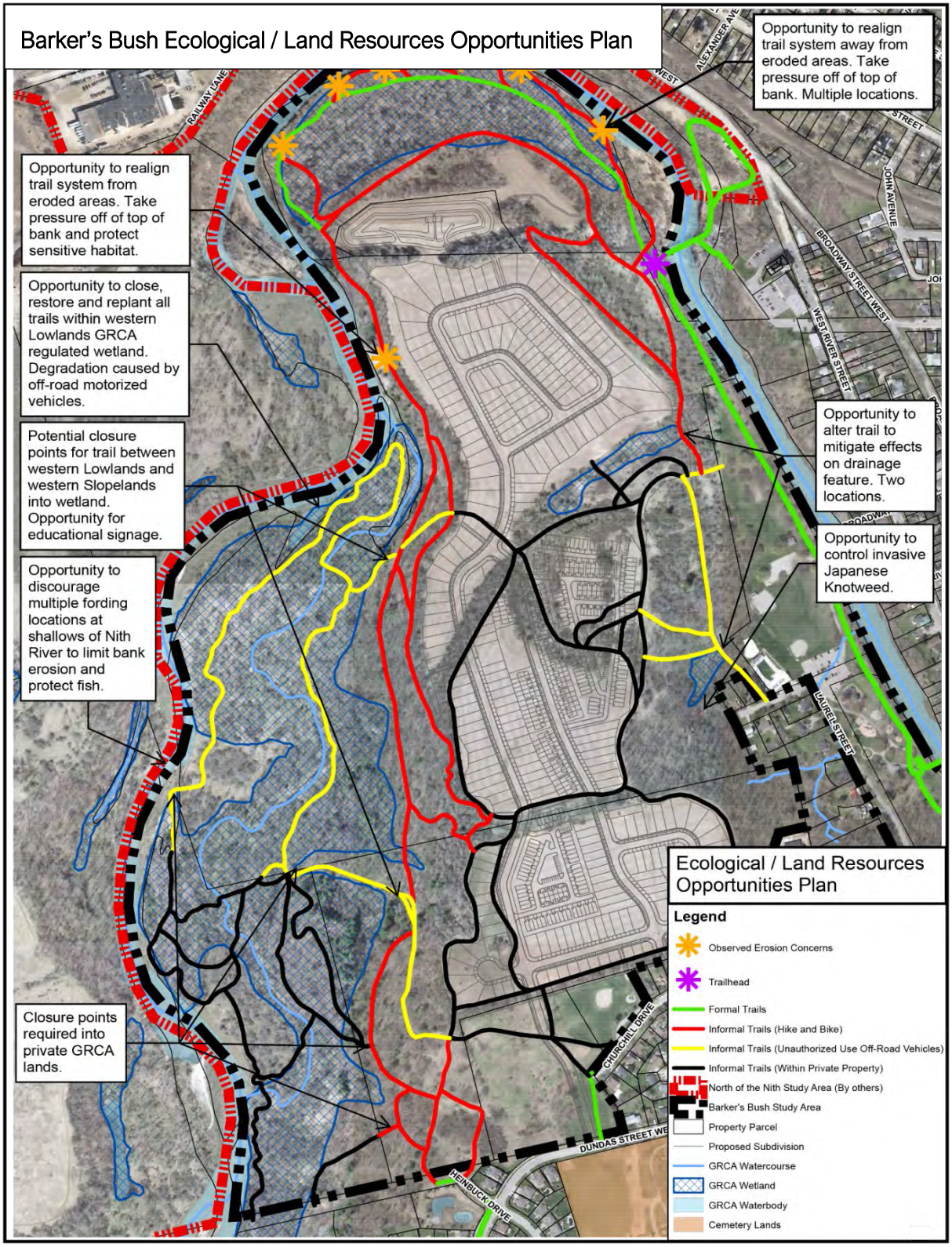


Figure 4 Barker's Bush Ecological/Land Resources Opportunities Plan

4.4 Trail Classification

A key component of the Plan's development was the creation of a new trail classification system to help clarify the intents, uses and design considerations for the trails within Barker's Bush.

To ensure consistency in design, implementation and maintenance, a trail classification has been identified and applied to both the existing and proposed trails with Barker's Bush. The classifications are generally defined by the location and function of the trail in the context of the woodland, open space, development, and wetland. Trails currently follow desire lines that generally align with topography and current human use (Foster & Newell, 2019). The trail classification considers the trail user and incorporates elements of user experience such as ease of use/level of difficulty, accessibility, and trail amenities in addition to the technical criteria. Categories are based on industry best practices and the specific needs of Barker's Bush. The trail categories include:

- Woodland Trail A (Figure 5) represents dirt trails found in Barker's Bush within the woodland that allow for existing uses to continue with needs-based maintenance only. The focus of this type is preservation of natural heritage features with minor accessibility treatments such as signage and monitoring of surfaces and height clearances.
- Woodland Trail B (Figure 6) is a modification of dirt trails found in Barker's Bush within the woodland. Existing trail conditions will be monitored regularly. As degradation occurs due to overuse, natural forces, or where rerouting is required, Woodland Trail B will be implemented. The focus is preservation of natural features with a heightened focus on accessibility. A higher standard for surface stability (limestone added on top of existing soil), signage and width/height clearances will be applied compared to Woodland Trail A. Slopes of Woodland Trail B will not be adjusted from existing conditions except where safety or erosion are a concern.

An example of Woodland Trail B. Limestone surface laid on top of existing earthern surface to increase stability.

- Recreational Trails (Figure 7) will be applied in open space meadows and agricultural lands where existing trees will not be disturbed. This trail type will feature a granular base and widths that can accommodate maintenance vehicles as necessary. It will feature limestone surface with a granular base. Slopes will be 5% where feasible.
- Multi-use Paths (Figure 8 & Figure 9) will be applied where key connections are required between exterior paths of travel. They will be fully accessible with an asphalt surface.

The classification does not include unsanctioned and unmaintained trails, or former trails which have been closed. It applies to construction of new trails and existing trails at the time of their reconstruction/upgrades. See Table 2, Barker's Bush Trail Typologies for further detail.

There are ranges for some of the technical criteria within each of the classifications. For instance, trail width will depend on whether the trail segment will need to accommodate maintenance vehicles. The trail classification and associated mapping covers existing and planned trail routes. Informal footpaths that will evolve through use over time may be incorporated into the trails system at a later date but are not part of the trail classification.

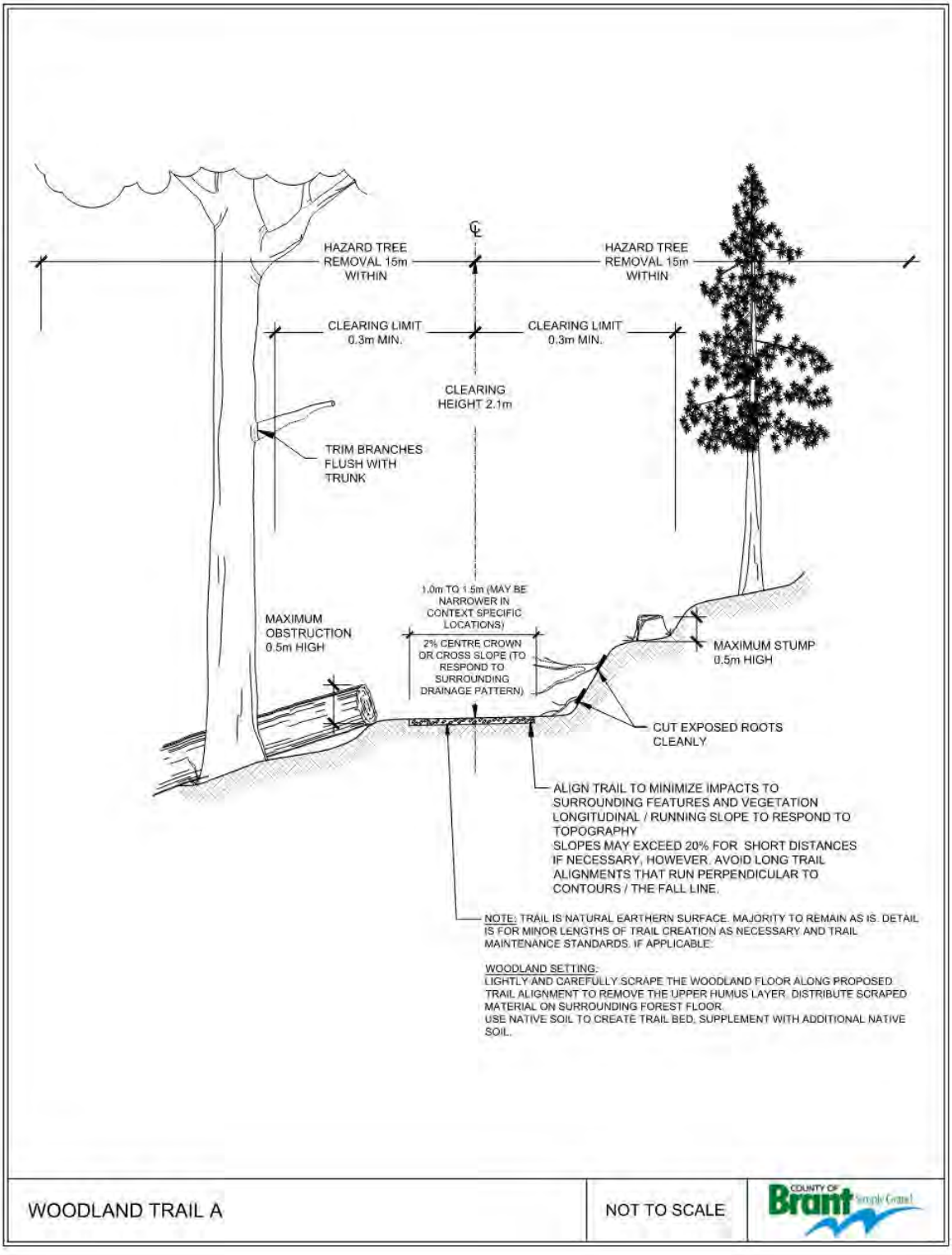


Figure 5 Woodland Trail A

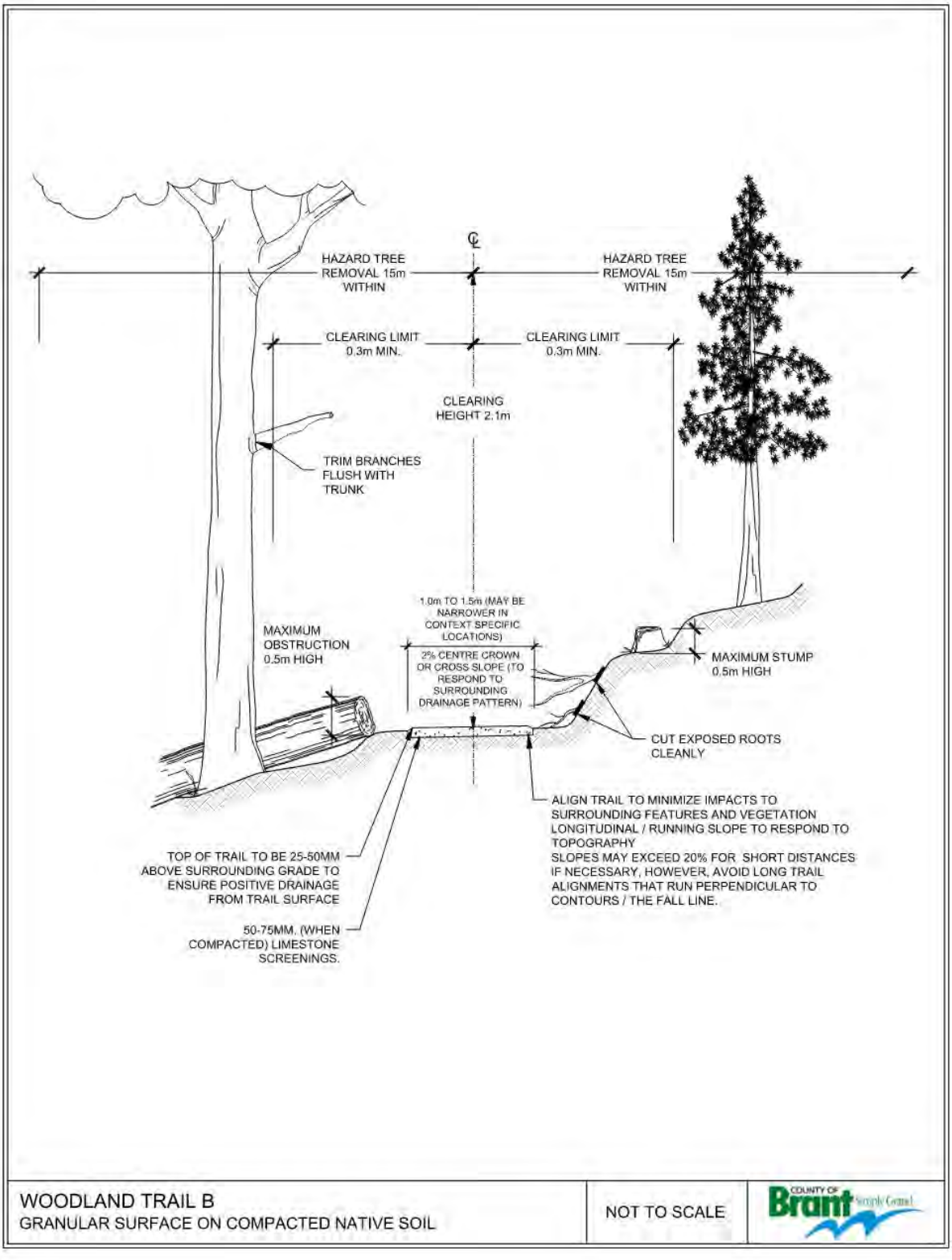


Figure 6 Woodland Trail B

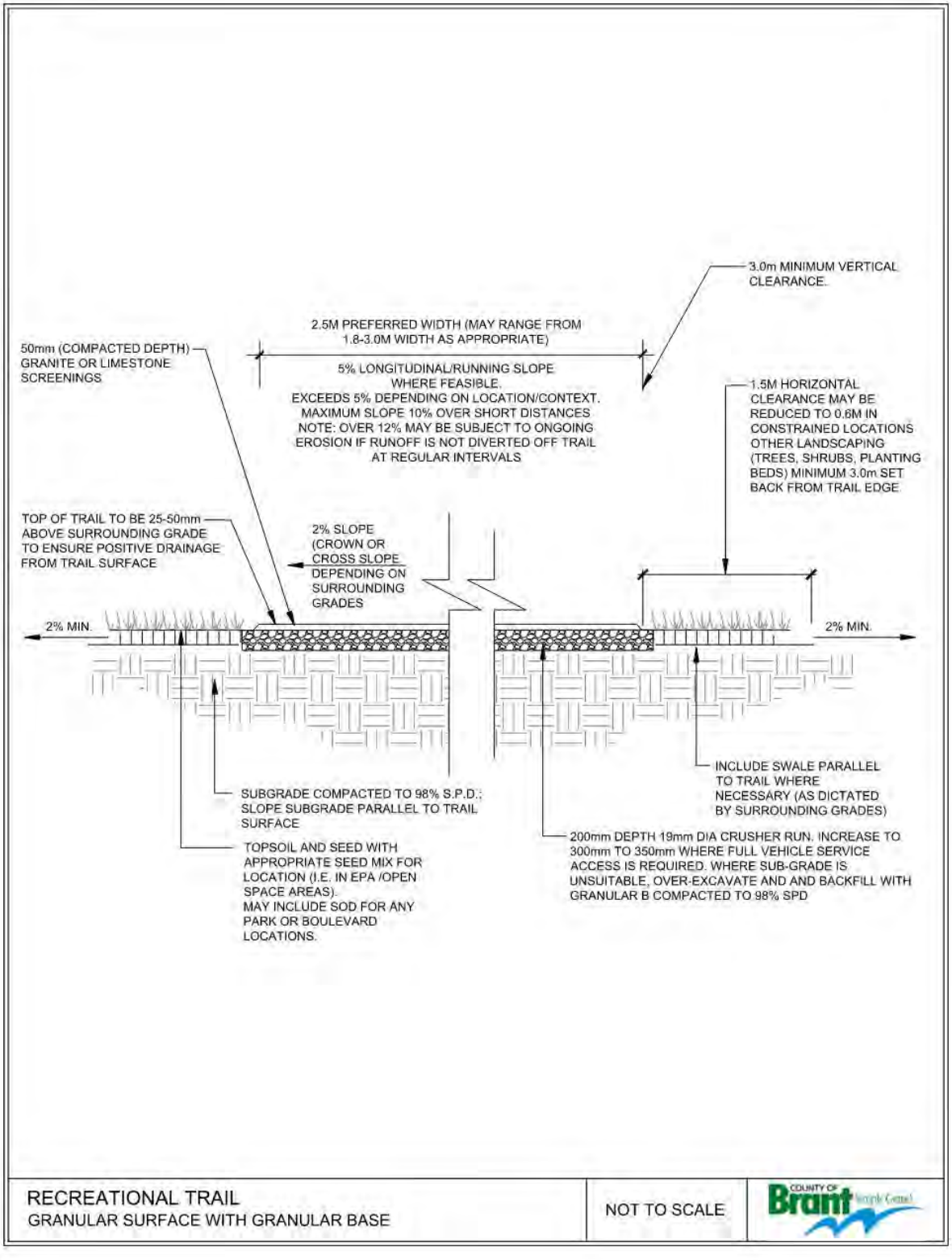


Figure 7 Recreational Trail

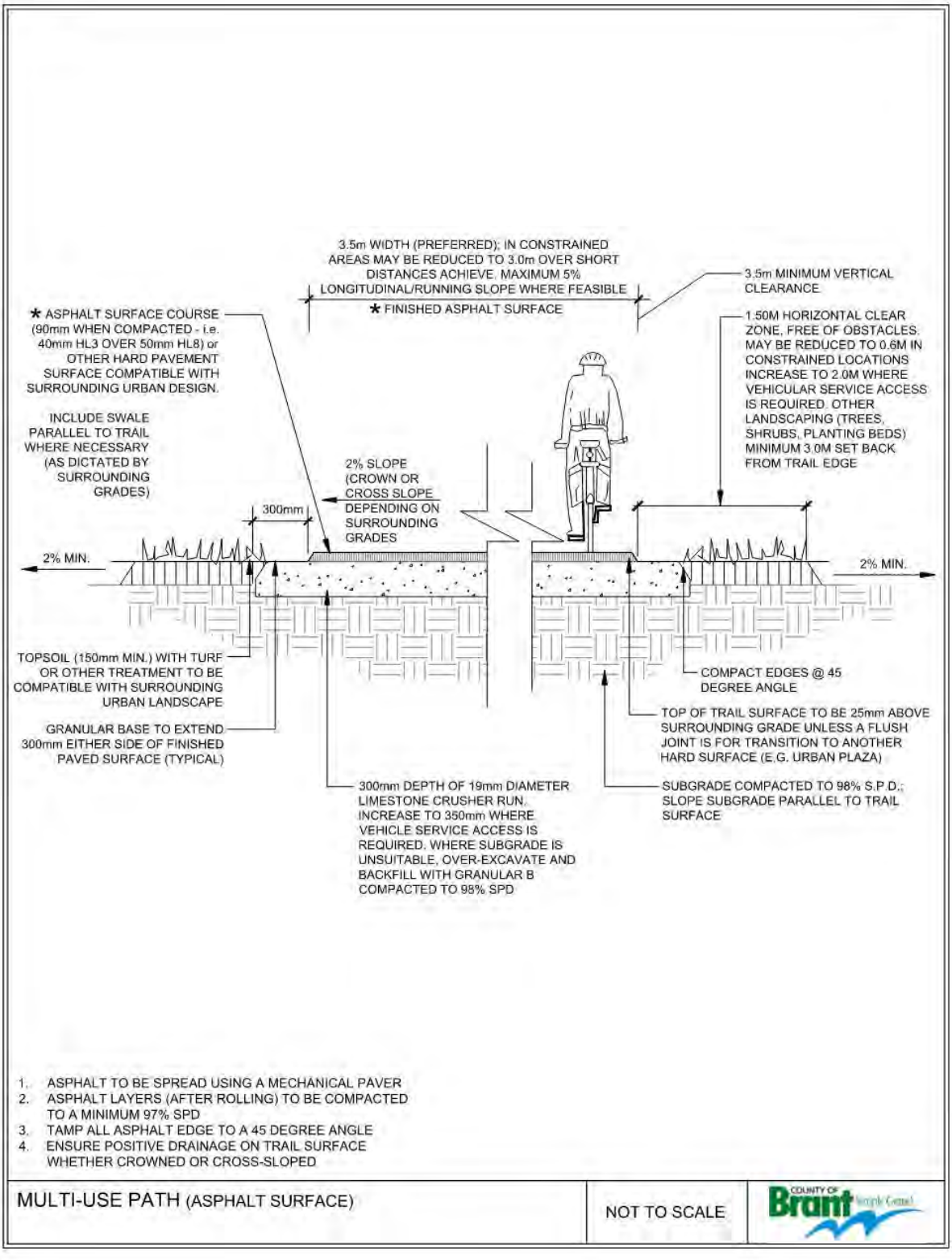


Figure 8 Multi-use Path (Asphalt Surface)

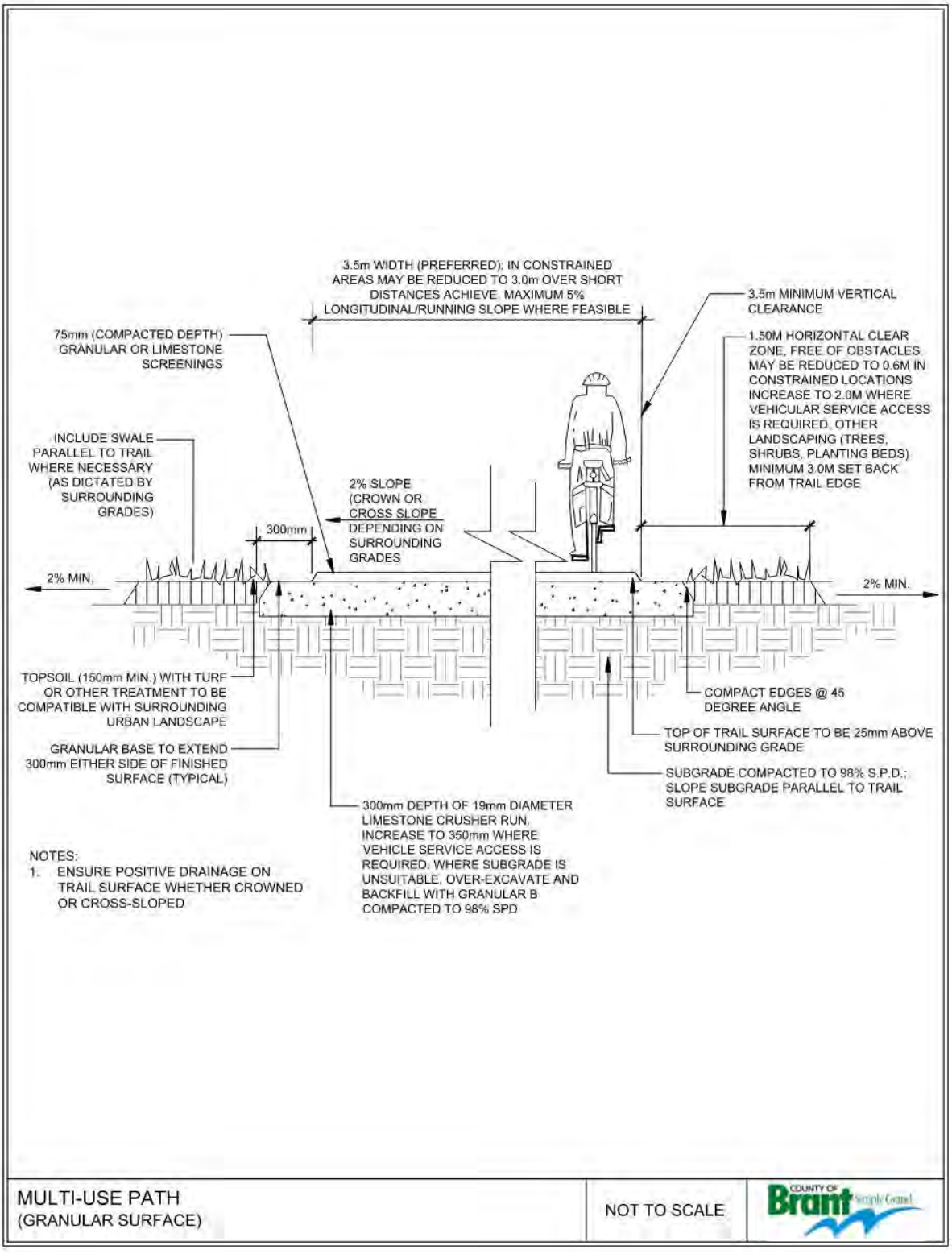


Figure 9 Multi-use Path (Granular Surface)

	Woodland Trail A	Woodland Trail B	Recreational Trail	Multi-use Path
DEFINITION / DESCRIPTION				
GENERAL FUNCTION	Recreation and leisure providing opportunities to 'escape' the urban environment and experience natural settings. Note: this does not include unsanctioned trails, or former trails which have been closed	Recreation and leisure providing opportunities to 'escape' the urban environment and experience natural settings. Note: this does not include unsanctioned trails, or former trails which have been closed	Primarily recreation and leisure. Provide connections in open space meadows and former agricultural lands	Provide connection between exterior paths of travel.
LOCATION	Woodlands, Heavy Tree Canopy	Woodlands, Heavy Tree Canopy	Open Space Meadows / Former Agricultural Fields (Limited or no tree canopy)	Key Connections between Exterior Paths of Travel
USER / USER EXPERIENCE				
EASE OF USE/RATING (GENERAL)	Moderate to Difficult	Moderate	Easy to Moderate	Easy
ANTICIPATED LEVEL OF USE	Moderate	Moderate to High	Moderate to High	High
USERS/USER GROUPS	Experience/stamina required Suitable for users with moderate level of trail experience	Some experience / stamina required Suitable for users with some trail experience	Accommodates most user groups and abilities, families Suitable for users with little to no trail experience	Accommodates all user groups, all ages and abilities, families, tourists Pedestrian, mixed uses, vehicular for servicing. Suitable for users with no trail experience
ACCESSIBILITY	Maintaining natural heritage values takes precedence over accessibility	Maintaining natural heritage values balanced with accessibility	Meets accessibility requirements where feasible.	Meets or exceeds minimum accessibility requirements
WAYFINDING / SIGNAGE	Low frequency, at trail entry points and key decision points. May include occasional markers along long stretches between trail intersections, includes trail blazes. Designed to meet AODA requirements at trail and entrances	Low frequency, at trail entry points and key decision points. May include occasional markers along long stretches between trail intersections, includes trail blazes. Designed to meet AODA requirements at trail and entrances	Moderate frequency, at all trail entry points, trail intersections and key decision points. Occasional markers where there are long distances between trail intersections. Designed to meet AODA requirements at trail and entrances	High frequency, at trail entry points, trail intersections, key decision points. At regular intervals where there are long distances between intersections. Designed to meet AODA requirements at trail entrances
LIGHTING	Lighting not provided	Lighting not provided	Lighting may be considered where use/demand is high arises.	Lighting may be considered where use/demand is high arises.

	Woodland Trail A	Woodland Trail B	Recreational Trail	Multi-use Path
AMENITIES	Low frequency of amenities. Trash receptacles at trail entry points. Seating opportunities at key locations (e.g. top of long climb, viewpoint). Natural materials used for seating opportunities	Low frequency of amenities. Trash receptacles at trail entry points. Seating opportunities at key locations (e.g. top of long climb, viewpoint). Natural materials used for seating opportunities	Moderate frequency of amenities. Trash receptacles at trail entry points, seating opportunities at key locations. Seating opportunities include benches and natural materials (e.g. flat boulders)	Moderate frequency of amenities. Trash receptacles at trail entry points, seating opportunities at key locations. Seating opportunities include benches and natural materials (e.g. flat boulders)
TECHNICAL				
WIDTH	1.0-1.5m width (may be narrower in constrained locations-i.e. adjacent vegetation topographic and environmental constraints)	1.0-1.5m width (may be narrower in constrained locations-i.e. adjacent vegetation topographic and environmental constraints)	2.5m preferred width (may range from 1.8-3.0m width as appropriate)	3m width (typical)
PROFILE / LONGITUDINAL SLOPE	Follows existing topography	Follows existing topography. Opportunity to reduce slope where topography poses difficulty to hikers/cyclists.	5% where feasible. Exceeds 5% depending on location/context. Maximum slope 10% over short distances Note: over 12% may be subject to ongoing erosion if runoff is not diverted off trail at regular intervals	5% maximum
SURFACE	Natural surface (earthen, grass), woodchips as necessary	Natural surface (earthen, grass) topped with limestone screening surface where maintenance inspections require per frequency of use and degradation.	Granular surface (i.e. limestone screenings, granite screenings) Granular A, clear stone, wood boardwalk in context specific locations	Typically, hard surface (i.e. asphalt) May include granular surface in context specific locations
BASE DEPTH	In situ earth. Meant to preserve existing tree root zones.	In situ earth. Geogrid where required. Meant to preserve existing root zones.	150mm typical, increased to 300-350mm for trails intended to include vehicular service access May include Recycled Concrete Material (RCM) to OPSS 1010 Specification	300mm-450mm granular May include Recycled Concrete Material (RCM) to OPSS 1010 Specification
VERTICAL CLEAR ZONE	2.1m minimum	2.1m minimum	3.0m minimum	3.5m minimum
HORIZONTAL CLEAR ZONE	0.3m	0.3m	1.5m, may be reduced to 0.6m in constrained locations	1.5m
MAINTENANCE	Lowest level of service (e.g. remove obstacles on trailbed) Lowest frequency of maintenance (e.g. annually or as required for emergencies) Lowest maintenance cost (i.e. range $750/km to $1,000/km annually No winter maintenance.	Low level of service (e.g. to remediate significant erosion, remove obstacles on trailbed, top with limestone screening as necessary) Lowest frequency of maintenance (e.g. annually or as required for emergencies) Lowest maintenance cost (i.e. range $750/km to $1,000/km annually No winter maintenance.	Low - moderate level of service, and low frequency of maintenance (e.g. seasonally or as required for emergencies Includes keeping trail envelope free from obstacles. May include seasonal/annual mowing along trail edges in open areas to stop vegetation encroachment. Moderate maintenance cost (i.e. range $1,250/km to $1,500/km annually Some sections may be candidates for winter maintenance, an additional $6,750 to $12,500/km annually for winter maintenance.	Low - moderate level of service, and low frequency of maintenance (e.g. seasonally or as required for emergencies Includes keeping trail envelope free from obstacles to enable service access. May include seasonal/annual mowing along trail edges in open areas to stop vegetation encroachment. Moderate maintenance cost (i.e. range $1,250/km to $1,500/km annually Some sections may be candidates for winter maintenance, an additional $6,750 to $12,500/km annually for winter maintenance.

	Woodland Trail A	Woodland Trail B	Recreational Trail	Multi-use Path
RISK MITIGATION	Lowest effort to mitigate risk (i.e. recognizes that users of Woodland Trails have a higher level of experience, skill, endurance and mobility, and some risk is part of the experience)	Lowest effort to mitigate risk (i.e. recognizes that users of Woodland trails have a higher level of experience, skill, endurance and mobility, and some risk is part of the experience)	Moderate effort to mitigate risk	Moderate effort to mitigate risk

Table 2 Barker's Bush Trail Typologies

Notes:

1. The typologies and associated mapping include existing and planned trail routes.
2. Unsanctioned and trails which have been closed are not part of the trail typologies.
3. The typologies apply to new trail construction and existing trails at the time they are reconstructed / resurfaced and when the County has assumed management
4. Refer to Section 6.2 for further discussion of trail maintenance tasks, frequency and cost ranges.

The details presented above, along with the design standards and guidelines noted in the table above should be used on any trail related infrastructure projects in Barker's Bush completed by municipal staff or community groups.

4.4.1 Water Crossings and Drainage Structures

Barker's Bush trails will, at times, need to cross drainage features. In these cases, a water crossing structure would be needed to guide users from one part of a trail to another. Implementing crossings achieves a greater sense of connectivity. However, the implementation of these types of trail enhancements can be costly.

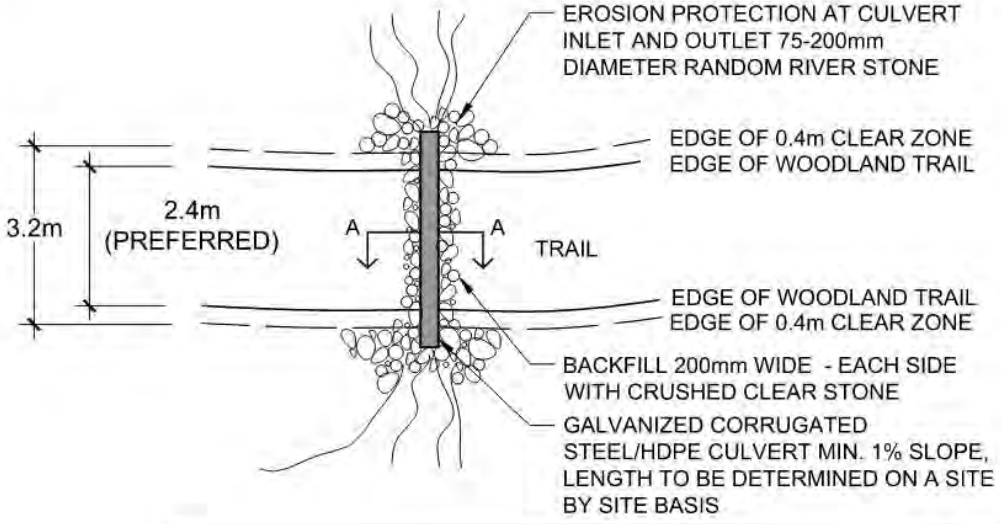
The following are some general considerations for the implementation of trail structures.

- Construction within regulated wetlands requires approval from the conservation authorities;
- Boardwalks need to be designed to withstand annual flooding without becoming a barrier to flood flows;
- Bridge maintenance needs to include removal of accumulated debris as required;
- Railings should be considered if the height of the deck exceeds 60cm above the surrounding grade;
- With accessibility in mind, an appropriate trail surface should be installed on the trail, and decking should be laid perpendicular to the path of travel, with openings less than 20mm to meet AODA requirements;
- In applications where site access is limited a "low-tech" boardwalk can be designed. Similarly, for short spans (i.e. 5m or less a 'low tech' bridge may be considered.

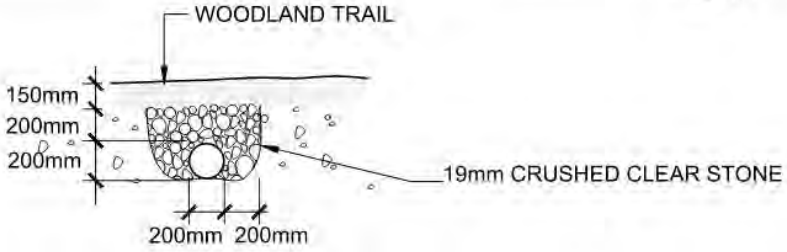

Wetland Boardwalk

Figure 10 is a woodland culvert meant to span minor drainage features on trails within woodlands. Figure 11 is a culvert meant for heavier drainage features on Recreational Trails or Multi-use Paths. Figure 12 is a cobble drain for minimal encroachment into the surrounding environment for wilderness trails. Figure 13 is a schematic illustration of a pedestrian/trail boardwalk including key design criteria that should be considered. Figure 14 illustrates a timber crib bridge and Figure 15 illustrates a low-profile boardwalk with various foundation options.

NOTES:
1. LOCATE TRAIL IN AREA OF LEAST DISTURBANCE TO EXISTING VEGETATION.
2. CONSULT WITH NATURAL HERITAGE SPECIALIST AS REQUIRED FOR LOCATING TRAILS IN SENSITIVE NATURAL AREAS.
3. DISCUSS METHOD AND LOCATION FOR DISPOSAL OF BRANCHES AND TREES REMOVED TO ACCOMMODATE TRAIL. (E.G. DISPOSE OFF-SITE, CHIP ON-SITE, USE FOR BRUSH PILE HABITAT ON-SITE, USE FOR CLOSURES OF UNAUTHORIZED TRAILS)
4. GEOTEXTILE FABRIC (OPTIONAL) MAY BE APPLIED BELOW GRANULAR TRAIL BED ON A SITE SPECIFIC BASIS TO PROVIDE STABILITY OVER SHORT SECTIONS OF UNSTABLE SOILS. IF LARGE SECTIONS OF UNSTABLE SOILS ARE ENCOUNTERED, AN ALTERNATE DESIGN (E.G. BOARDWALK) OR AN ALTERNATE TRAIL ALIGNMENT SHOULD BE CONSIDERED.



PLAN



NOTES:
1. MIN. 200mm COMPACTED GRANULAR COVER FOR SIDES & TOP
2. END COLLARS MAY OR MAY NOT BE REQUIRED (DETERMINED ON A SITE BY SITE BASIS)

SECTION A - A

WOODLAND TRAIL CULVERT

WOODLAND CULVERT (TYPICAL APPLICATION FOR WOODLAND A & B TRAILS)	NOT TO SCALE	COUNTY OF Brant Simply Grand

Figure 10 Woodland Culvert

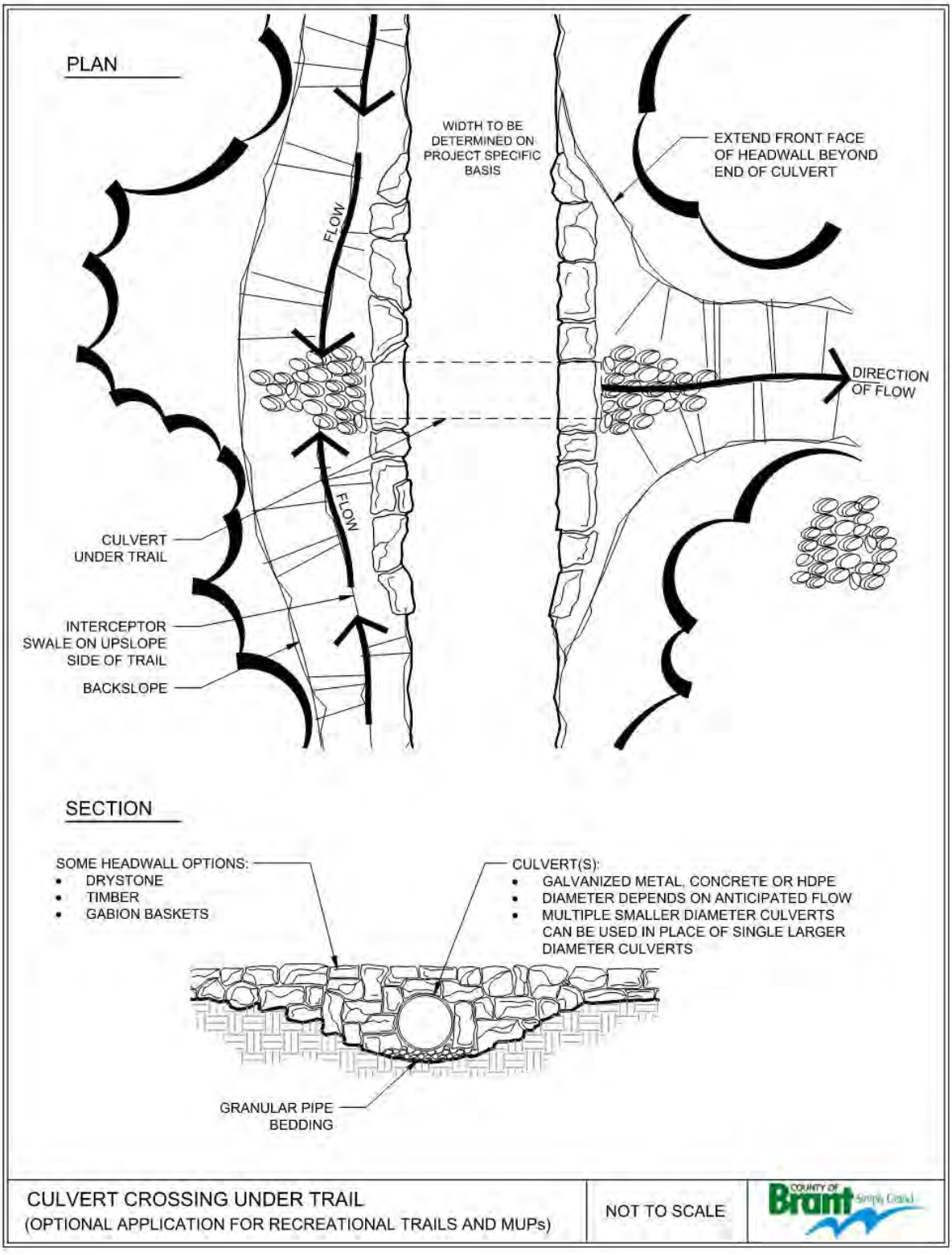


Figure 11 Culvert Crossing Under Trail

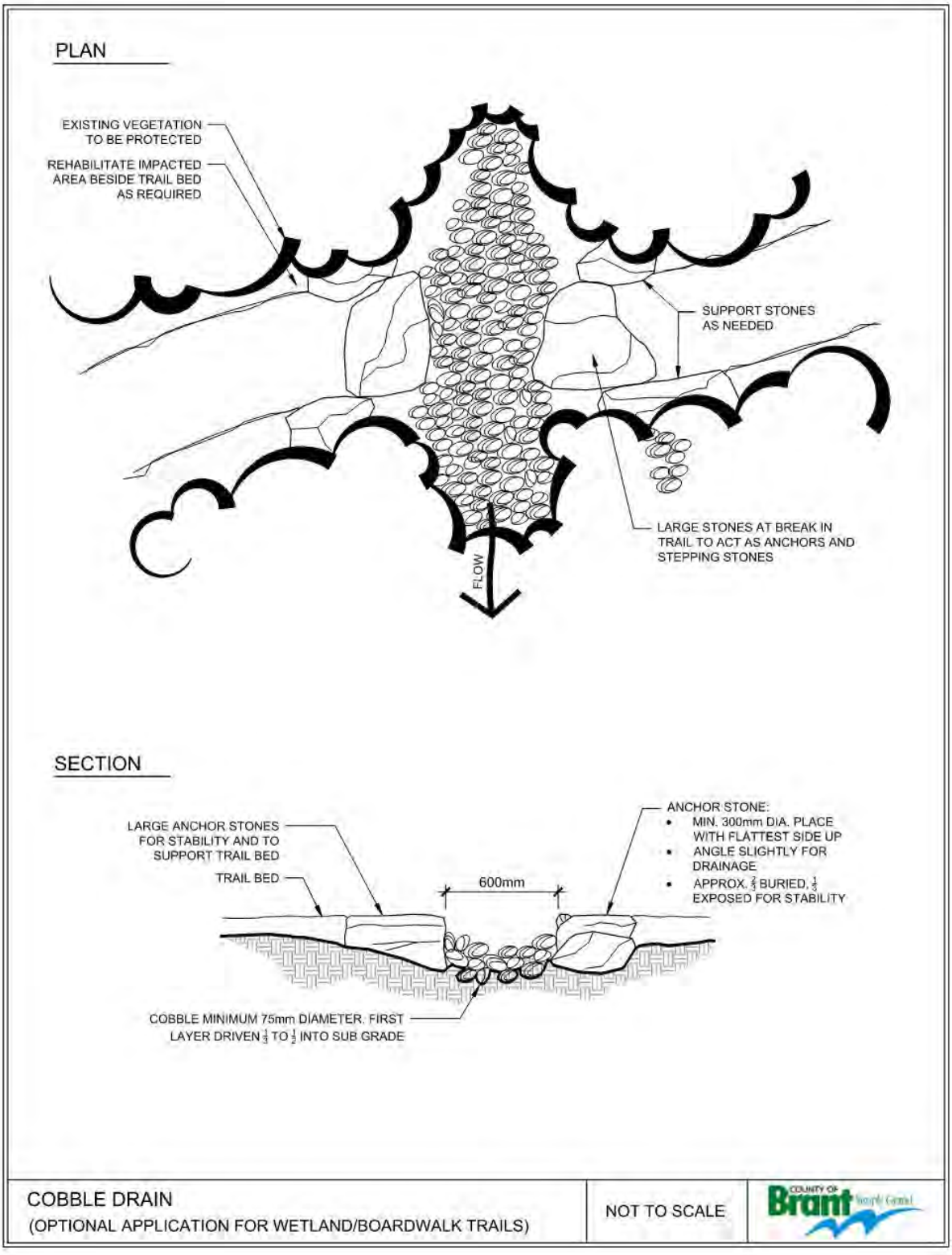


Figure 12 Cobble Drain

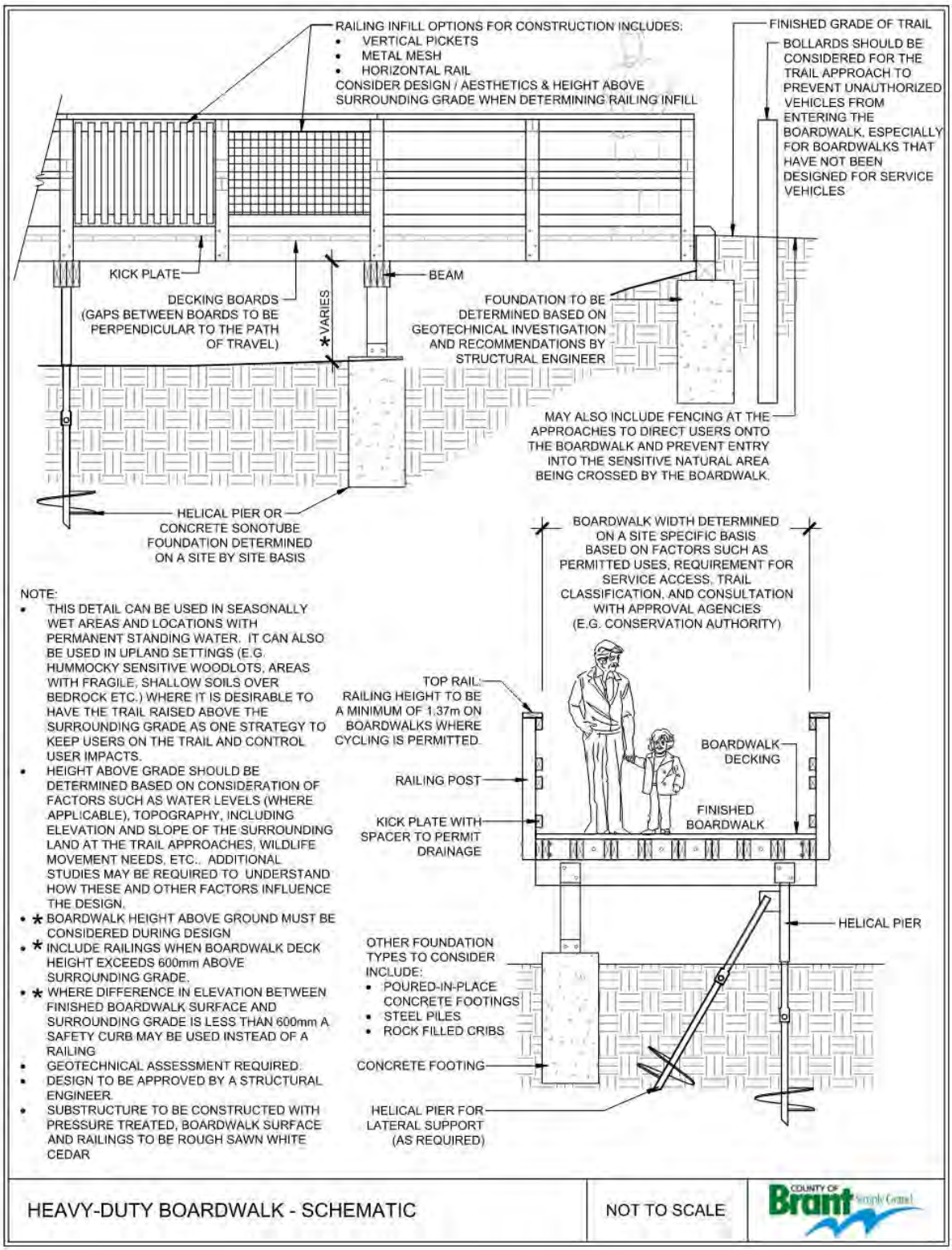


Figure 13 Heavy Duty Boardwalk - Schematic

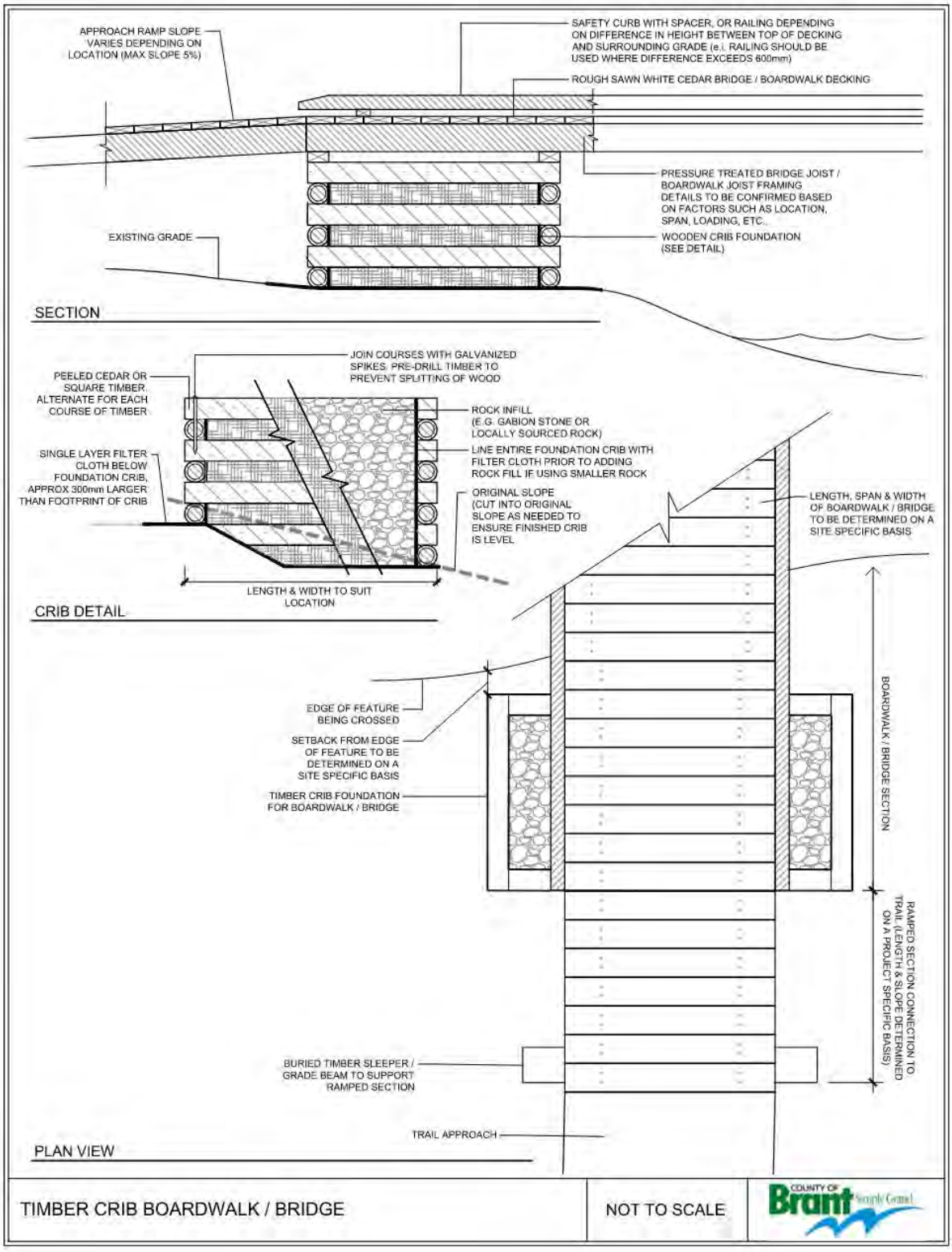


Figure 14 Timber Crib Boardwalk/Bridge

4.4.2 Trails on slopes

Topography is a significant factor in some parts of Barker's Bush and it will be necessary to construct trails on slopes. Where new trails must traverse slopes, they should gradually ascend diagonal to the contours rather than directly perpendicular. In other words, trails should be "benched", or built into the side of the slope for maximum stability. In situations where the downslope is excessive, including river-bank erosion areas, a safety barrier should be installed between the trail edge and downslope/eroded bank to alert users and provide some protection from the slope.

Benching may also be required to:

- Retain the upslope above the trail; or,
- Retain the downslope and provide structure upon which the trail bed can be constructed.

The location/context, site access and trail type will influence the design approach and material selection.

Figure 16, 17 and 18 provide design considerations for woodland trails on slopes where alteration or new construction is required. Figure 19 illustrates the key principles for trail benching.

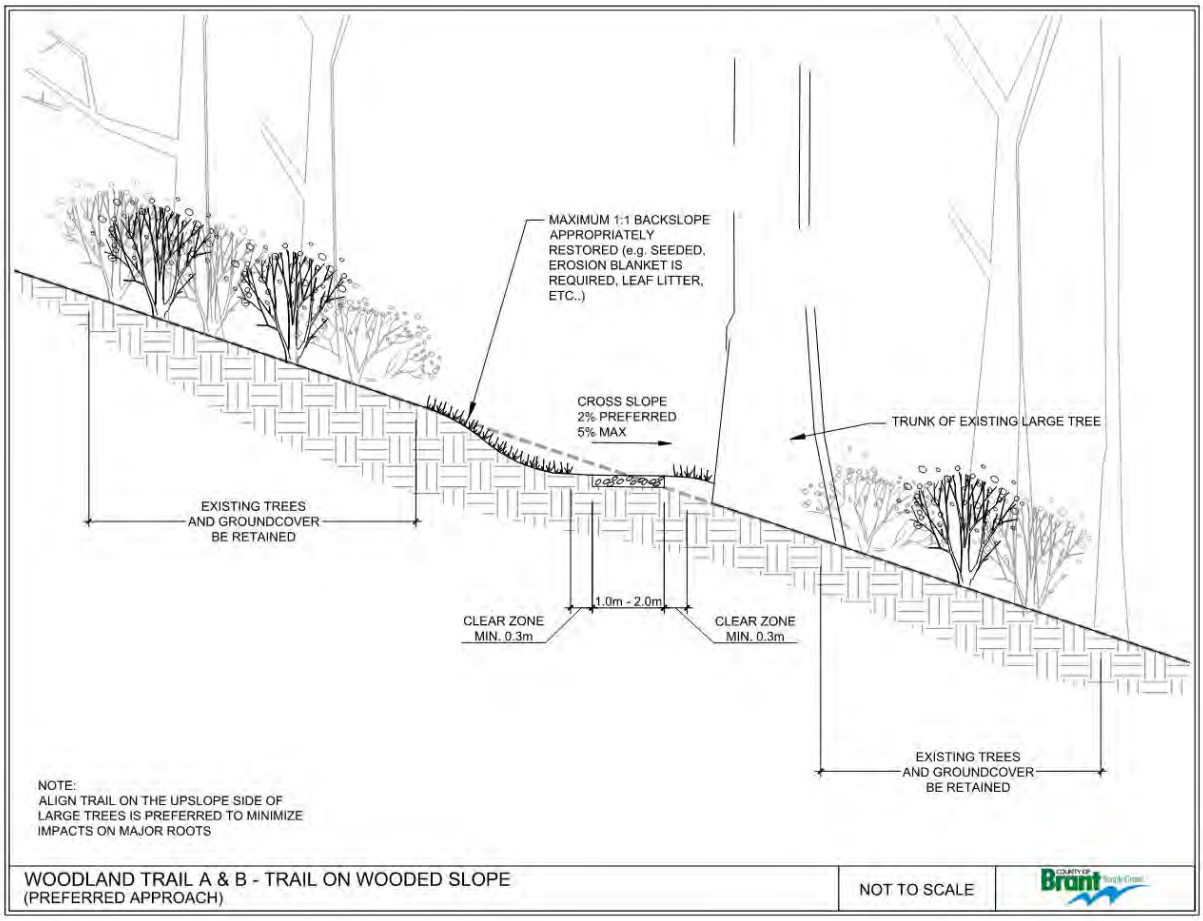


Figure 15 Woodland Trail A & B - Trail on a Wooded Slope

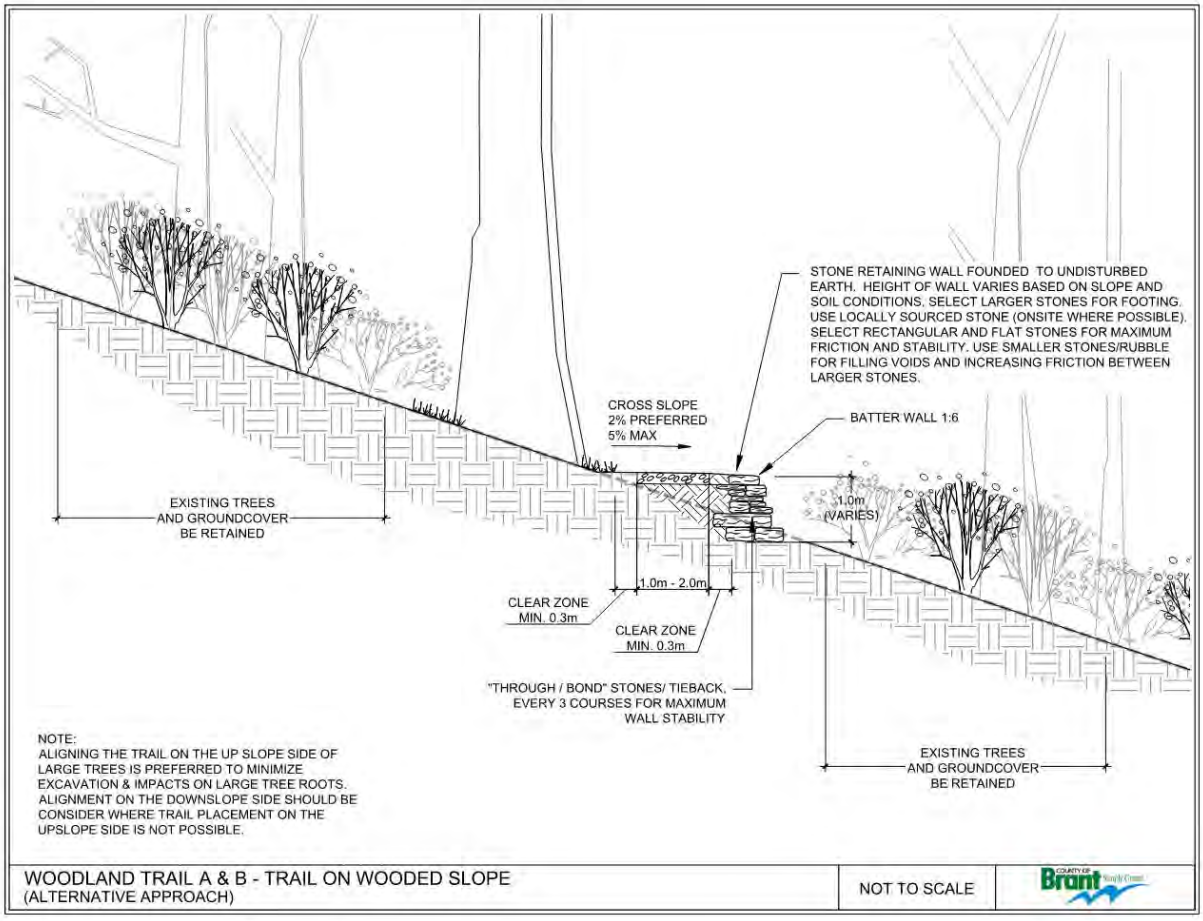


Figure 16 Woodland Trail A & B - Trail on Wooded Slope (Alternative)

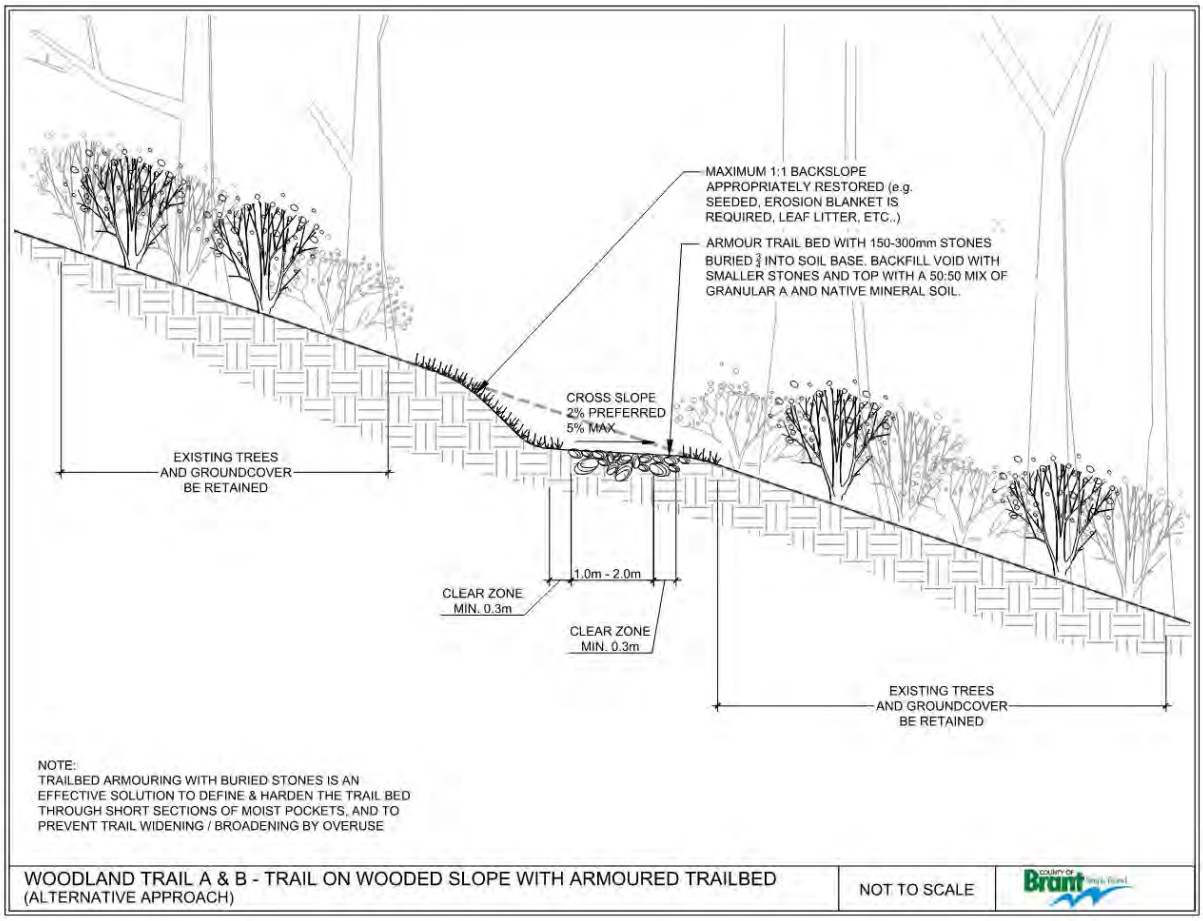


Figure 17 Woodland Trail A & B - Trail on Wooded Slope with Armoured Trailbed

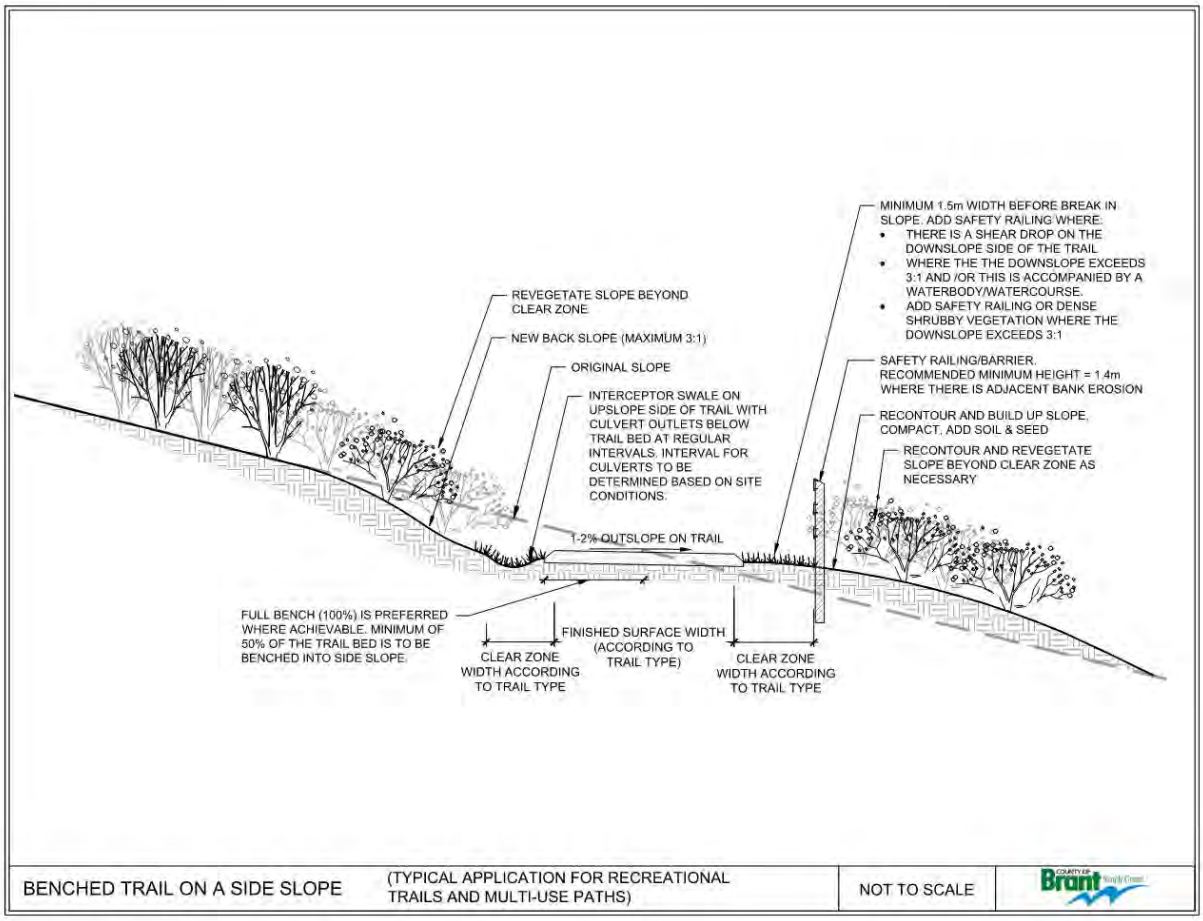


Figure 18 Benched Trail on a Side Slope

4.5 Policy Development

The way in which trails and conservation/preservation efforts are planned is driven by the policies that are in place. Without a strong foundation of supportive planning policies, it can be difficult to integrate or justify trail development as part of future Municipal projects and initiatives.

There are several policy considerations that should be reviewed and incorporated into planning policies such as the Official Plan, Secondary Plans, Development Charges, the Strategic Plan, etc. to provide additional support for future trail investments and conservation/preservation efforts in Barker's Bush.

4.5.1 Planning for Trails in Barker's Bush

Barker's Bush provides opportunities to enjoy and interpret nature, and to pursue some trail activities that are not possible in more traditional parks. Striking the balance between providing public access and the need to conserve and/or protect the resource itself can be difficult.

Where trails are identified and formalized it is important that they be properly aligned, designed, and monitored for the effects of inappropriate use and/or overuse. Regular monitoring will alert operations staff to locations where users may be straying off the trail or taking short cuts so that mitigation strategies can be developed before significant damage to soils and vegetation occurs.

In some cases, trails and trail users should not be in more sensitive or protected areas. The Barker's Bush western Lowlands is an example where trails may not be appropriate. In these cases, it is advisable to provide alternative trail routes and information (e.g. signing, public information campaigns, etc.) explaining the management decision to exclude trails from the area.

Recommendations for management of trails within Barker's Bush are based on the following considerations:

- Route or reroute to avoid the most sensitive and/or critical habitats;
- Interpretive signs for sensitive species away from the species' location(s);
- Consider and evaluate alternative routes and design treatments;
- Use previously disturbed areas where possible and appropriate;
- Maintain natural processes;
- Limit accessibility;
- Incorporate habitat enhancements; and,
- Complement and highlight natural features through interpretation.

In most cases, the implementation of a trail within protected or sensitive areas will require an Environmental Impact Study to assess the potential impact of the trail and to identify design and construction requirements prior to approval. The need for an impact study should be identified on a case-by-case basis at the time a new trail moves forward to design and construction.

4.6 Minimizing Risk and Liability

Liability and risk management are critical parts of any trails master plan and ongoing trail maintenance program. Confusion around these issues can lead to misguided efforts, excessively cautious decisions by County staff and missed opportunities.

Establishing an effective risk management program can minimize potential accidents and injuries and protect both users and local governments from loss or litigation. A good risk management strategy includes the identification and prompt remediation of hazards/risks, the consistent review and revision of policies and

standards, and monitoring results. Although risk management cannot prevent all accidents from happening, it can greatly reduce the number of instances and subsequent loss through due diligence and prevention measures.

4.6.1 Inspections

Regular inspections are an important element in minimizing risk and liability. Inspection reports and subsequent maintenance are preventative measures designed to identify potential or real hazards before an incident occurs. Issues will arise from time to time on specific trails and they should be addressed through the trail maintenance processes, identified trail development priorities, and the resources available.

4.6.2 Signage

The trail network within Barker's Bush is frequented by a wide variety of users. Many of the trails are shared-use which can sometimes create conflicts between users (for example walkers and cyclists). Signage can be an effective way of mitigating conflicts by informing users of multi-use trails upon entry. Users can then be prepared to encounter other types of users on the trail and will be more alert when walking or biking the trails. Informative signs can help reduce conflict and mitigate the risk of injury. Proper signage also helps users understand where they are, where they are headed, the level of trail difficulty and potential trail hazards.

Users need to be reminded that use of trails is at their own risk. Unsafe trails can be properly signed with appropriate warnings posted to ensure the safety of trail users. Trail mapping and informational signs on kiosks will help visitors find their way through unfamiliar territory.

4.6.3 Trail Degradation

Improper use of trails can cause significant damage to walking paths and surrounding natural habitats as well as expose users to risks. Trail degradation mitigation can include seasonal closures, closing sections of trail that are hazardous, identifying trail damage caused by specific uses and taking steps to prevent the damage.

4.6.4 Deterring Unauthorized Motorized Vehicle Use

A management plan for deterring off-road motorized vehicle use should be developed for Barker's Bush. Several jurisdictional bodies, as well as public opinion gathered, state that off-road motorized vehicle use is not only against County of Brant bylaws but leaves other users feeling unsafe and is a liability for the County of Brant. It also adversely affects natural resources through the destruction of vegetation, soil erosion and spreading of invasive species (USDTFHA, 2008). An iterative management plan, along with physical closures of trails reacting to the changing use of the area, should be created to deter unauthorized use. This process will likely take time, as the peninsula changes, and the County implements aspects of the Plan.

A management plan for deterring use should include aspects of the following as required:

- Determination of reporting strategy (Direct to OPP, OPP alerts County Staff of actions)
- Educational signage onsite outlining trail use rules and reporting strategy (Signage can contain QR code with quick reporting link)
- Increased OPP checks of the area
- Homeowner education on trail use rules and reporting strategy through Homeowner Brochures
- Community task force for reporting usage
- Use of trail sensor cameras to strategically monitor unauthorized usage trends and maximize efficiency of OPP efforts (Sensor cameras should only be used with public support and clear signage at locations)

- Provide recommendations for other opportunities/locations to use off-road motorized vehicles if/when they are available

The goal for The Plan is to be off-road motorized vehicle free by the end of development buildout within the Nith Peninsula. During this time it is recommended that County staff should utilize the above approach to deter use. Re-evaluation of off-road vehicle use should take place upon buildout of the development, and additional management and deterrence strategies should be utilized as needed based on the level of continued use.

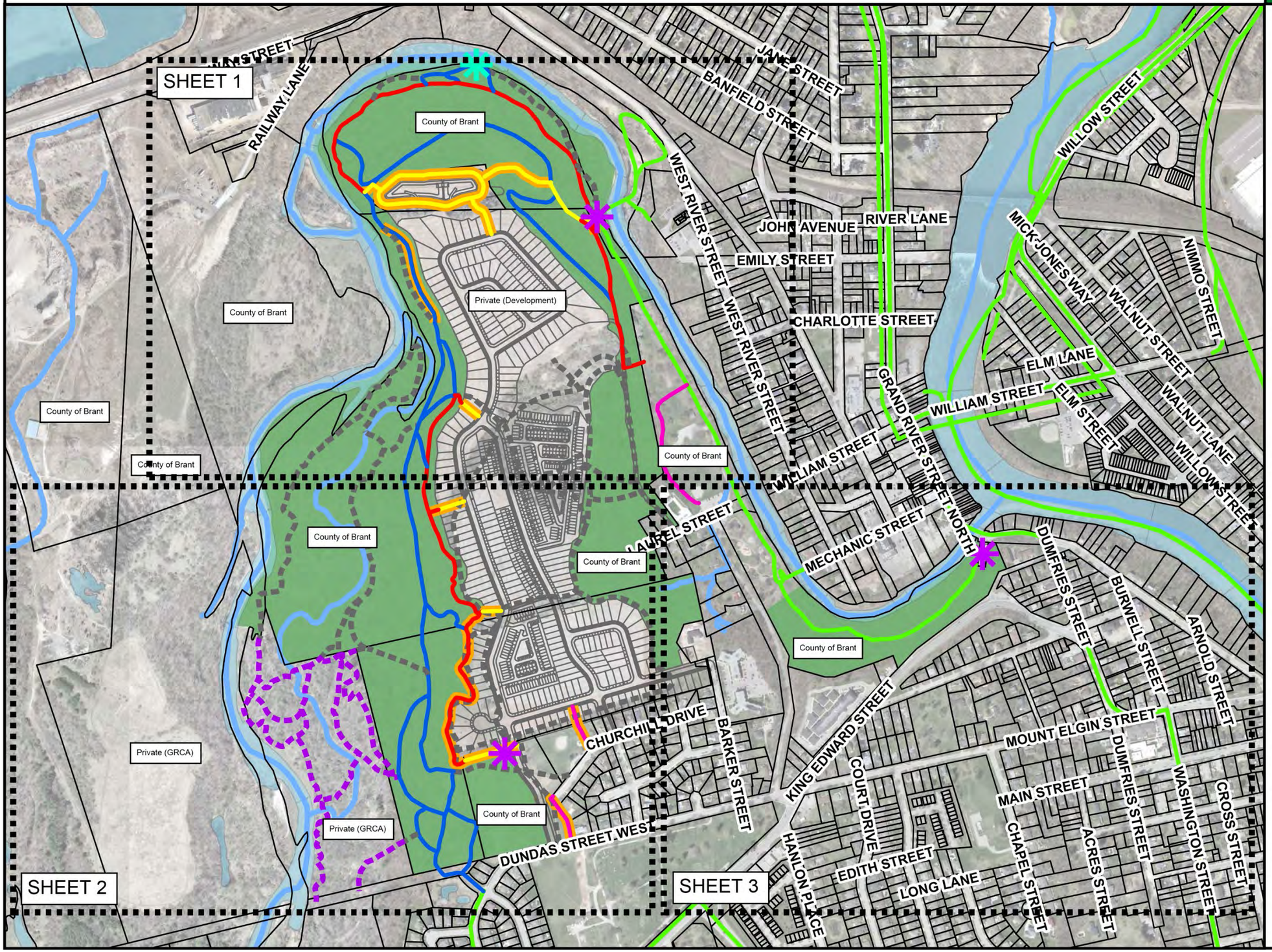
4.7 The Network

The mapping presented below shows existing and proposed trail locations. Most existing trails within Barker's Bush can be considered woodland trails. Upgrading the trail system will be an iterative process. Some will be planned upgrades of segments and areas, while others will be as needed, based on regular maintenance inspections. In particular, surface treatment on Woodland Trail B classification will be implemented as needed where degradation of the existing earthern surface occurs from overuse.

The County should adopt the proposed trail network in principle and use it as the primary reference related to the treatment of trails within Barker's Bush. Should an additional route emerge, or a new trail opportunity arise, the County should refer to the trail classification matrix to determine the most appropriate trail type prior to design and construction.

PROPOSED TRAIL NETWORK

KEY MAP



Legend

- Trailhead
- Vista Point
- Woodland Trail A
- Woodland Trail B
- Recreational Trail
- Multi-Use Trail
- Decommissioned Trail
- Unsanctioned Trails within GRCA Property
- Proposed New Trail Alignment
- Existing County of Brant Trails
- Property Parcel
- Proposed Subdivision
- GRCA Watercourse
- GRCA Waterbody
- Barker's Bush

0 62.5 125 250 375 500 Meters

Figure 19 Key Map

PROPOSED TRAIL NETWORK

SHEET 1

Decommission tertiary trail to avoid eroded banks

Naturalize former agricultural field between future housing and trail realignment

Potential location for future Bank Swallow interpretive sign

Decommission and realign trail to avoid major bank erosion and Bank Swallow habitat

Install edge protection railings as necessary

Regulatory signs at unauthorized off-road motorized vehicle crossings of Nith River (multiple)

Minor trail realignment to match development entrances

Trail closures at entrances to western lowlands (GRCA wetlands) to protect species of concern and provincially rare vegetation communities

Potential location of future significant fauna interpretive sign

Approximate location of rest/lookout area

Formalize portion of tertiary trail along river bank with safety upgrades (caution signs, edge protection railing)

Decommission tertiary trail to avoid eroded banks

Approximate location of Japanese Knotweed recommended for removal

Upgrade existing trailhead sign and staging area

Trail crossing mitigation required at drainage feature

Minor realignment of existing trails

Trail closures as necessary

County of Brant

Private (Development)

County of Brant

County of Brant

RAILWAY LANE

BROADWAY STREET WEST

BANFIELD STREET

WEST RIVER STREET

BROADWAY STREET

Legend

- Trailhead
- Vista Point
- Woodland Trail A
- Woodland Trail B
- Recreational Trail
- Multi-Use Trail
- Decommissioned Trail
- Unsanctioned Trails within GRCA Property
- Proposed New Trail Alignment
- Existing County of Brant Trails
- Barker's Bush
- Property Parcel
- Proposed Naturalization Restoration
- Proposed Subdivision
- GRCA Watercourse
- GRCA Wetland
- GRCA Waterbody

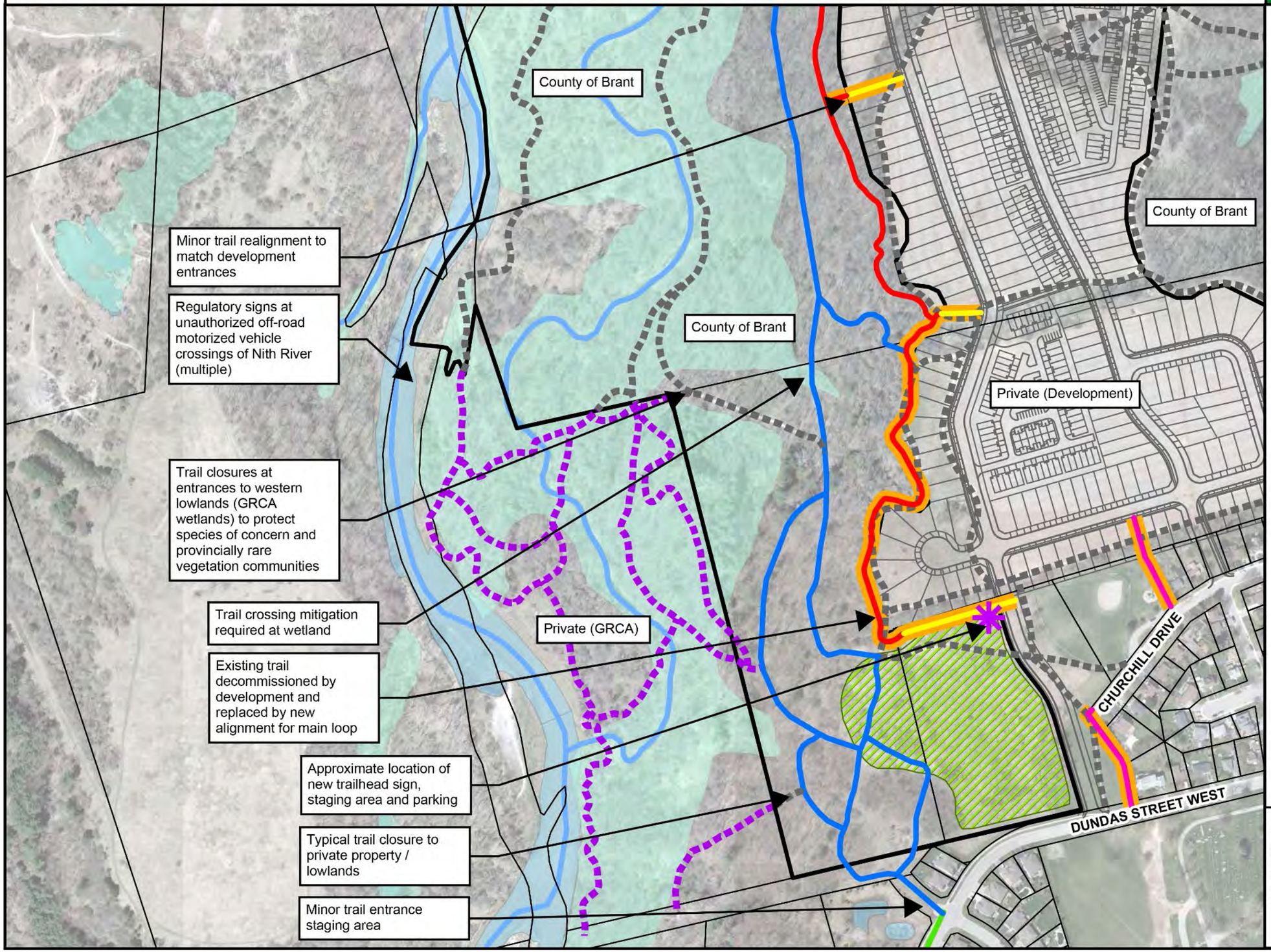
0 25 50 100 150 200 Meters

Note:
1) Trail decommissioning treatment required at closure points to safety related and environmentally sensitive features.
2) See Typical Signage Layout Schematic Figure for signage types / location

Figure 20 Map Enlargement 1

PROPOSED TRAIL NETWORK

SHEET 2



Legend

- Trailhead
- Vista Point
- Woodland Trail A
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- Recreational Trail
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- Proposed New Trail Alignment
- Existing County of Brant Trails
- Barker's Bush
- Property Parcel
- Proposed Naturalization Restoration
- Proposed Subdivision
- GRCA Watercourse
- GRCA Wetland
- GRCA Waterbody

0 25 50 100 150 200 Meters

Note:
1) Trail decommissioning treatment required at closure points to safety related and environmentally sensitive features.
2) See Typical Signage Layout Schematic Figure for signage types / location.

Figure 21 Map Enlargement 2

PROPOSED TRAIL NETWORK

SHEET 3

Upgrade existing trailhead sign / staging area and locate closer to Grand River Street South

Approximate location of Japanese Knotweed recommended for removal

Maintenance vehicle access

County of Brant

County of Brant

WILLIAM STREET
MECHANIC STREET
WEST RIVER STREET
GRAND RIVER STREET SOUTH
BOBBY WEST STREET
DUMFRIES STREET
KING EDWARD STREET
CHURCH STREET
BURWELL LANE
MOUNT ELGIN STREET
DUNDAS STREET WEST
MAIN STREET
CHAPEL STREET
ACRES STREET
BARKER STREET
CHURCHILL DRIVE
GORT AVENUE
LAUREL STREET
COURT DRIVE
DAUGAARD AVENUE
HANLON PLACE
EDITH STREET

Legend

- Trailhead
- Woodland Trail A
- Woodland Trail B
- Recreational Trail
- Multi-Use Trail
- Decommissioned Trail
- Unsanctioned Trails within GRCA Property
- Existing County of Brant Trails
- Barker's Bush
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- Proposed Subdivision
- GRCA Watercourse
- GRCA Wetland
- GRCA Waterbody

0 25 50 100 150 200 Meters

Note:
1) Trail decommissioning treatment required at closure points to safety related and environmentally sensitive features.
2) See Typical Signage Layout Schematic Figure for signage types / location.

Figure 22 Map Enlargement 3

4.7.1 Implementation Phasing and Costing

The following phasing and capital costs have been prepared for Barker's Bush. They identify some of the preferred upgrades to the trails network and highlight potential cost considerations for implementation.

In addition, priority levels have been identified for suggested works. High priority should be completed within five years (2022-2026), medium priority within ten (2022-2032) and low priority within twenty years (2022-2042). The implementation of the trails network and environmental enhancements will take budget, time, and effort. Effective implementation should be based on a flexible schedule/timeline which can be integrated into day-to-day decision-making.

To guide the implementation of the trails network and environmental enhancements, preliminary costs were identified and applied to the proposed works. It is important to note that as part of future implementation, an assessment will be needed to confirm/refine the works and create a detailed cost estimate at the appropriate time. Costs were identified based on comparable municipalities and used to establish an estimated construction cost for each proposed priority item.

Table 3, 4 and 5 outline priority level and preliminary cost of proposed works found in the above mapping. Tasks related to safety, environmental protection and basic usability are given highest priority. Costs are broken down between Developer, Development Charge and County/Donation/Grant cost. Development charges are fees collected from developers at the time of building permit application to help pay for the cost of infrastructure required to provide municipal services to a new development.

	High Priority Tasks (2022-2026)	DEVELOPER	DEVELOPMENT CHARGE (PROPOSED)	COUNTY TAX BASE, DONATIONS & GRANTS
1	Regulatory (safety and bylaw compliance), accessibility and wayfinding signs. Assume 40 signs installed by County Staff.			$ 4,000.00
2	Trail closure and realignment away from eroded banks, associated trail closure points and remediation (major erosion along northwest bank of peninsula). Assume 200m installed by County Staff.			$ 4,000.00
3	Edge protection (cedar rail) along eroded banks (major erosion along northwest bank of peninsula). Assume 200m installed by contractor.			$ 25,000.00
3	Trail closure along eroded banks, trail closure points and remediation (minor erosion along north bank of peninsula). Assume 500m installed by County Staff.			$ 9,000.00
4	Trail closure points installed at edge of western wetlands. Assume 4 locations installed by County Staff.			$ 4,000.00

5	Minor trail rerouting to match development entrances. Assume 5 locations installed by County Staff.			$ 7,500.00
6	Walk block trail connection installation. Not including overall block grading or fencing. Approximately 200m total length.	$ 30,000.00		
7	Storm Water Management Pond loop trail. Not including overall block grading or restoration. Approximately 400m total length.	$ 60,000.00		
8	Trailhead signs (other trailhead amenities lower priority). Assume 3 signs installed by contractor.			$ 24,000.00
10	Woodland Trail B upgrades as needed. Assume 1200m installed by County Staff.			$ 12,000.00
11	Trail alterations at drainage feature east of development (culvert, boardwalk etc). Installed by contractor.			$ 10,000.00
12	Edge protection (cedar rail) along eroded banks (minor erosion along north bank of peninsula). Assume 160m installed by contractor.			$ 16,000.00
13	Habitat creation (bat boxes, snake hibernacula, alteration of snags for bird nests) installed by County Staff.			$ 7,000.00
TOTAL		$90,000.00	$0.00	$122,500.00

Table 3 High Priority Tasks

	Medium Priority Tasks (2022-2032)	DEVELOPER	DEVELOPMENT CHARGE (PROPOSED)	COUNTY TAX BASE, DONATIONS & GRANTS
1	Victoria Park and Dundas St – Churchill Dr Multi-use Trail extension. Assume 200m installed by contractor.	$ 50,000.00		
2	Trailhead amenity upgrade at Grand River Street North. Installed by contractor.			$ 10,000.00
3	Trailhead amenity upgrade and minor trail rerouting at Penman's Pass. Installed by contractor.		$ 7,500.00	$ 7,500.00
4	Trailhead amenity upgrade at Victoria Park. Installed by contractor		$ 10,000.00	
6	Woodland Trail B upgrades as needed. Assume 1200m installed by County Staff.			$ 12,000.00
7	Invasive species removals (Japanese Knotweed highest priority). Performed by contractor.			$ 10,000.00
8	Seating and rest areas along trail routes. Assume 15 locations installed by County Staff.			$ 30,000.00
9	Proposed Woodland Trail B alignment west of development. Assume 350m installed by County Staff.			$ 12,000.00
10	Proposed Recreational Trail west of Victoria Park. Assume 110m installed by contractor.		$ 15,000.00	
11	Trail entrance etiquette sign and seating at Dundas St W and Zavarella Ct. Installed by County Staff.			$ 4,000.00
12	Trail closure points installed east of development behind public pool. Assume multiple locations performed by County Staff.			$ 12,000.00
SUBTOTALS		$ 50,000.00	$ 32,500.00	$97,500.00

Table 4 Medium Priority Tasks

	Low Priority Tasks (2022-2042)	DEVELOPER	DEVELOPMENT CHARGE (PROPOSED)	COUNTY TAX BASE, DONATIONS & GRANTS
1	Naturalization restoration planting by developer using a contractor. Assume 17,500sqm of former agricultural fields seeded and planted with one tree whip and four shrubs per 16sqm.	$ 180.000.00		
1	Naturalization restoration planting by volunteers and County staff. Assume 25,000sqm of existing meadow planted with one tree whip per 9sqm.			$ 50,000.00
2	Interpretive signage (Species at Risk, Flora and Fauna of Barker's Bush, Cultural Heritage, Indigenous Heritage). Assume 4 signs installed by County Staff.			$ 6,000.00
3	Woodland Trail B upgrades as needed. Assume 1200m installed by County Staff.			$ 12,000.00
TOTAL		**$180,000.00**	**$0.00**	**$68,000.00**

Table 5 Low Priority Tasks

The costs assume typical or normal/average conditions for construction. For example, unit prices assume good soil conditions, an average requirement for grading.

Estimates do not include:

- Professional/consultant services and/or staff time for additional studies such as natural and cultural heritage impact studies, studies and/or costs related to addressing Species-at Risk requirements and Environmental Assessments
- Professional/consultant services for detailed design, tendering and contract administration
- Costs for property acquisitions, utility relocations, permits or approvals for construction
- Maintenance and operation of existing and proposed new trails
- Costs associated with individual larger/significant site-specific projects such as bridges, retaining walls and stairways
- Annual inflation (e.g., increased cost of labour, materials, fuel, etc.)
- Applicable taxes

More detailed cost estimates which include items noted above would be developed for trail segments as they move into the implementation stage. Specifically, estimated costs would be developed at the detailed feasibility stage and then refined in parallel with the completion of any required additional studies and the detailed design.

SECTION FIVE

AMENITIES AND INFRASTRUCTURE

A Comprehensive Trails Master Plan for

Barker's Bush

5 Amenities and Infrastructure

Upgrades are meant to ready Barker's Bush for the influx of population while preserving the existing look and feel. It is important to note that, while consultation feedback focused on protecting the natural condition, amenities will help facilitate usage patterns and a standard of care that will preserve the area and facilitate accessibility. Amenity upgrades including signage, accessibility related infrastructure, safety improvements, naturalization/restoration green infrastructure, trailhead, mid and end of trip facilities are recommended below.

5.1 Signage and Wayfinding

Wayfinding helps people know where they are, where they want to be and how to get there. Effective wayfinding design improves the use and experience of spaces and reduces confusion for trail users. Design elements such as signs and maps provide wayfinding and directional support for trail users. Wayfinding features at choice points, like staging areas or points of divergence, can also attract people to use new trails and trail networks by illustrating where the trail goes, how long it is and where the exit points are (Carpman & Grant, 1993). Trails that provide wayfinding features to show how individual routes connect to larger trail networks can even encourage more people to use active forms of transportation. Signs should be oriented based on forward-up equivalence where moving forward equals up on the map (Devlin, 2012).

The design of the trail network should incorporate a "family" of signs each with a different purpose and message. This "family" contains unifying design and graphic elements and materials. The unified system becomes immediately recognizable by the user and can become a branding element. Consistent with this approach is the correct use of signage, which in turn reinforces the trail's identity. Signage in Barker's Bush should reflect the natural look and feel of the site. Over signing is to be avoided. A family of signs typically includes:

Trailhead

Trailhead signs are typically located at key destination points, trailhead signs provide orientation to the network through mapping, other appropriate network information as well as trail etiquette. Where network nodes are visible from a distance, trailhead signs can be a useful landmark. In some municipalities, trailhead signing has also been used as an opportunity to sell advertising space. This not only provides information about local services that may be of interest to trail users, but it may also help to offset the cost of signs and trails.

Etiquette

Etiquette signs should be posted at public access points to clearly articulate which trail uses are permitted, regulations and laws that apply, as well as trail etiquette, safety and emergency contact information. Reminder signs, such as "Please stay on the Trail", may be needed at some locations. At trailheads, the user etiquette information can be incorporated into trailhead signs. In other areas, this information can be integrated with access barriers.

Directional Blaze

Directional blazes should be located at pathway intersections and at regular intervals along long, uninterrupted sections of trail. The purpose of directional blazes is to provide a simple visual message to users that they are travelling on the designated trail network.

Interpretive

Interpretive signs inform users about points of interest such as key natural and cultural heritage features. They should be located carefully in highly visible locations to minimize the potential for vandalism. Several opportunities exist in Barker's Bush for natural and cultural heritage related interpretive signs. History of indigenous groups in the area should be considered in consultation with Six Nations of the Grand River representatives.

Warning / Regulatory

Warning or regulatory signage should be used throughout the trail system on an as-needed basis. These signs may be location or purpose specific and will need to be customized (i.e. Trail closure, no tresspassing, no motorized vehicles, etc).

Accessibility

Distance and difficulty signs are integral to accessible use and should be located at trailheads and other trail entrances. Integrate into trailhead, etiquette or directional signage as convenient.

Sample details can be found for signage in the figures below.

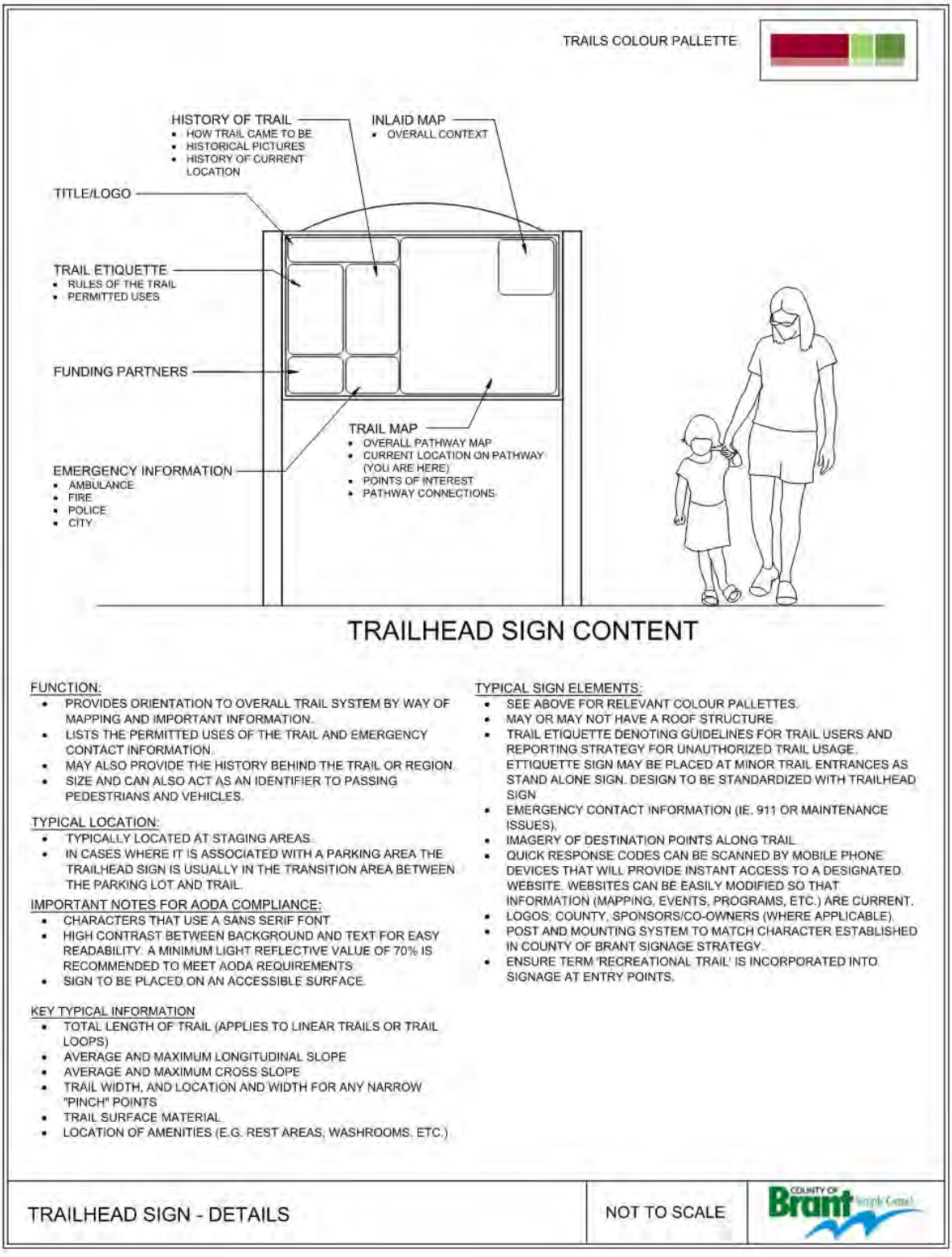


Figure 23 Trailhead Sign

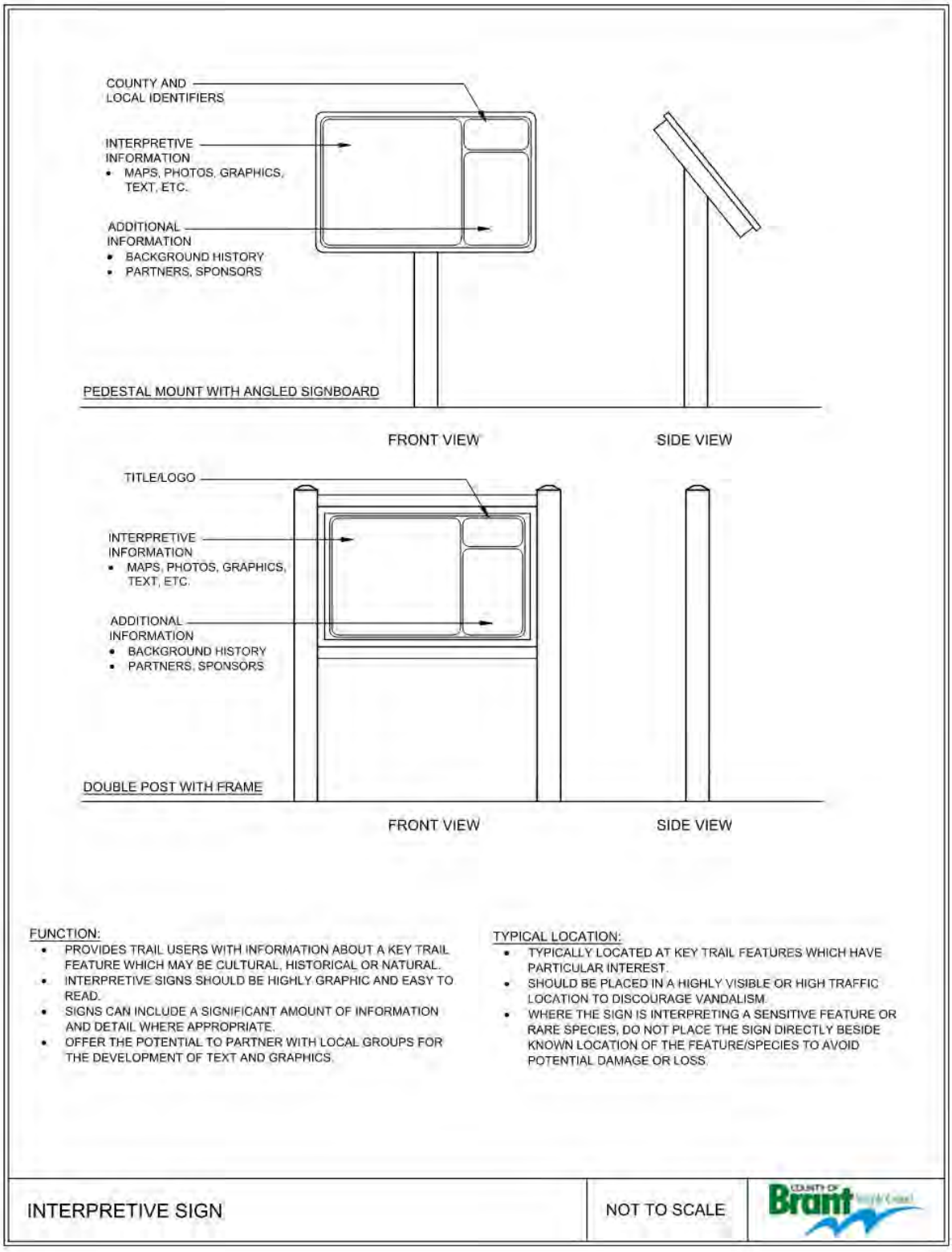


Figure 24 Interpretive Sign

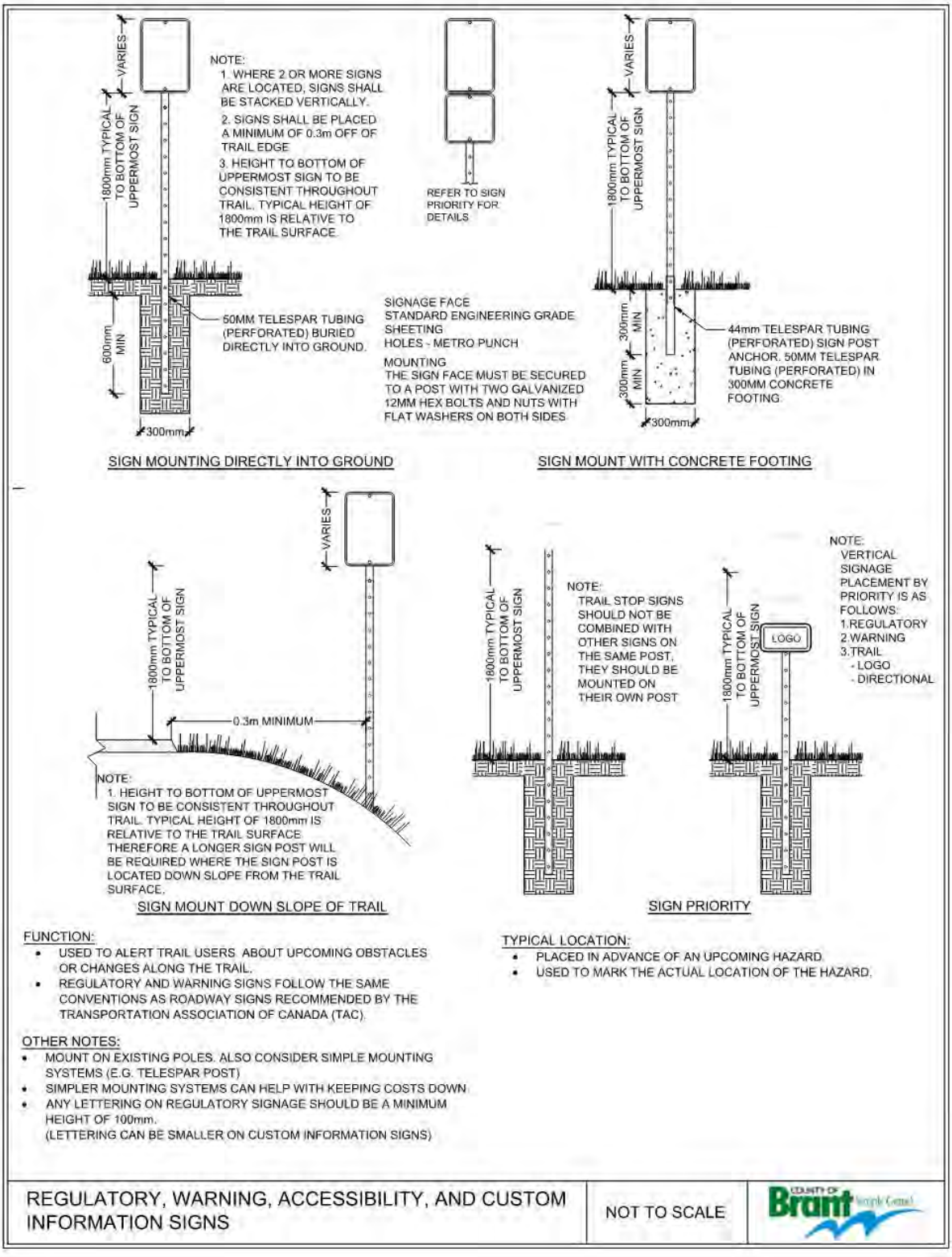


Figure 25 Regulatory, Warning, Accessibility and Custom Information Signs

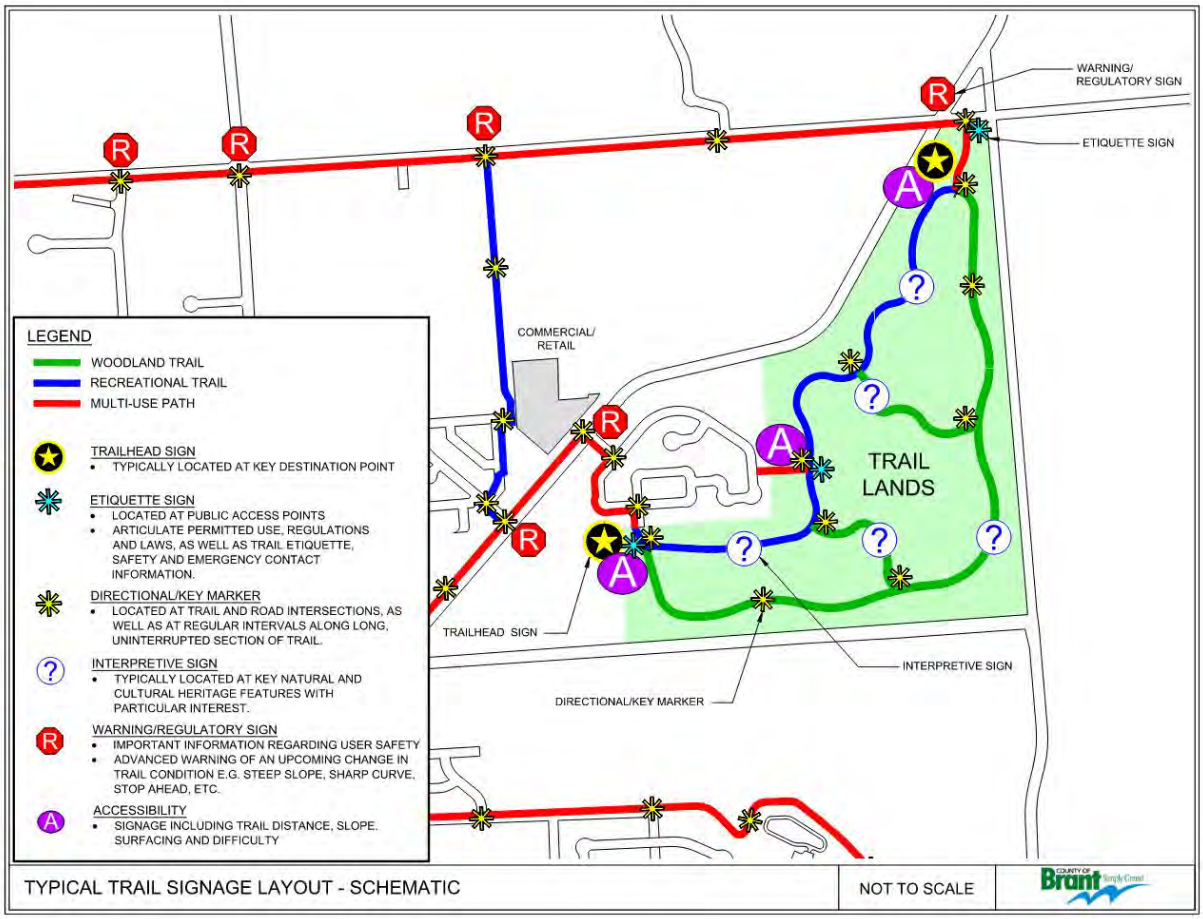


Figure 26 Typical Trail Signage Layout Schematic

As the County of Brant pursues the implementation of the proposed trail network, a comprehensive and cohesive set of trail signage that is consistent with existing communication and creative protocols and practices should be explored.

5.1.1 Signage AODA Requirements

Based on AODA requirements (O.Reg. 191/11) and drawing from local best practice sources, the following technical considerations need to be incorporated into signs at designated trailheads and trail entrances.

Placement

- Surfacing on sign boards should be glare free, and the signs should be positioned on site to avoid shadows and glare where possible.
- The centre of signs (main message area) should be mounted at eye level; between 1370mm and 1525mm above ground level.

Information Provided

- Objective/factual information regarding trail conditions, when it was constructed or when it was last assessed, such that users can understand the trail's characteristics and make a personal informed decision about using the trail prior to setting out. This information needs to include:
    - The date of construction or assessment.
    - Trail length – this should be described in metres or kilometres as a minimum.
    - Additionally, describing the route length based on time at an average walking pace may be more relatable to users (4.0 to 5.0km/hr.).
    - An objective description of the typical trail bed and surface conditions, including average and minimum width, average and maximum running slope and cross slope, and type and firmness of surface.
    - A description of any obstacles or extreme conditions such as steep slopes, narrow widths, or rough surfaces that occur on the trail. The location of these should be illustrated and specifically labelled/identified.
    - The location of amenities such as rest areas, benches, lookouts, washrooms etc. Universal symbols on the map and in the map legend will help to minimize the need for too much text.
    - Illustrate accessible parking areas and major trail intersections (note these distance markers are to be placed along the trail as well).
    - The location of the trail user in the context of the trail route/network (i.e. a "you are here" marker).
    - Where possible, provide a tactile map (i.e. map with a raised outline) of all trails and features at the trailhead.

Text Style and Contrast

- Use letters that are universal, specifically sans serif font upper and lower case (do not use all caps), with a stroke width to height ratio between 1:5 and 1:10
- Use numbers that are universal, specifically Arabic font and have a width to height ratio between 3:5 and 1:1
- Letter and number font sizes that are appropriate based on distance from which the sign is being viewed
- Select text colour that has high tonal contrast (minimum 70%) from the background colour(s).

5.2 Accessibility

The trails of Barker's Bush pose interesting questions related to accessibility in natural settings. How can the natural look and feel of the existing trail system and woodlands of Barker's Bush be enjoyed by people of all abilities? What level of accessibility is desired? Public consultation feedback noted that there was little or no desire to turn the trail system into fully accessible, barrier-free paths of travel. No support was shown for multi-use paths with asphalt surfacing on trails within the woodland. These are typical design solutions for accessible design. The trails should be a mixture of barrier-free paths of travel, recreational trails, and wilderness trails,

with an emphasis on aspects of accessibility where it is feasible, warranted and unobtrusive to the natural look and feel of the existing ecosystems. Trail design shall be in accordance with the Accessibility for Ontarians with Disabilities Act (2005), with emphasis on its requirements for barrier-free paths of travel and recreational trails, but also its exceptions for wilderness trails as found in the Illustrated Technical Guide to the Accessibility Standard for the Design of Public Spaces (GAATES, 2015).

The County of Brant's Accessible Public Spaces Design Standards sets out standards and provides guidance for all new public space related construction or upgrades. The purpose of these standards is to guide the County in creating public spaces that are accessible, inclusive, and barrier-free for everyone. These standards are balanced with natural and cultural heritage features. *"Where harm can be done to natural features (environmentally sensitive areas) or historic or cultural features or be impractical due to physical terrain, these standards would not apply"* (County of Brant Accessible Public Spaces Design Standards, 2013). As Barker's Bush contains environmentally sensitive areas and undulating topography, the trail network design will follow a balanced approach.

Accessibility facts

1) Persons with hidden mobility disabilities (able to walk independently but only for a short distance and to stand unsupported but only for a brief time) experience difficulties and are dissuaded from participating in walking when the distances between rest exceed 15-20m.

2) Average walking distance for elderly and preschoolers is 190m between rest opportunities.

3) A common trend in current trail master planning is to space seating at maximum 200m intervals and at every trail entrance point.

5.3 Safety Upgrades

Two main safety issues were elaborated on during public consultation and field investigations. Firstly, many respondents cited usage type conflicts as the main safety issue they encounter. Most notably, motorized off-road vehicles use around hikers and cyclists caused the most concern. Motorized off-road vehicles, such as ATVs and motorbikes are prohibited on County of Brant property. These vehicles enter the site at multiple crossing points along the Nith River, from GRCA property and public roads. This has been prevalent in Barker's Bush for many years, but only since the County acquired the land in 2019 has it been prohibited. The Ontario Provincial Police monitor the area

Bank erosion posing a significant fall risk.

intermittently, but additional efforts are required to curtail usage for safety purposes. Attempts to build physical barriers have been met with limited success. While clear signage and physical barriers are required to keep vehicles off pedestrian paths, this will not stop a determined operator. See Section 4.6.4 for management and educational strategies for deterring usage. Efforts to improve safety should be focused on keeping vehicles from accessing Barker's Bush.

Second, several trails skirting the Nith River have been partially eroded by high-water events. In these locations, the trail should be shifted and edge protection, such as a cedar rail barrier, should be installed to provide a psychological and physical barrier to keep users away from dangerous conditions. Plantings are recommended to solidify banks (Bennet et al., 2008), specifically, where vegetation is currently limited. Woody vegetation suited for riparian/slope planting is recommended. County staff should inspect locations prior to closure and photo document existing conditions. Closures should be assessed during yearly audits. This barrier will also serve to protect sensitive habitat from pressures of human use where Bank Swallows have been observed foraging. See Figure 29 for cedar rail safety barrier design.

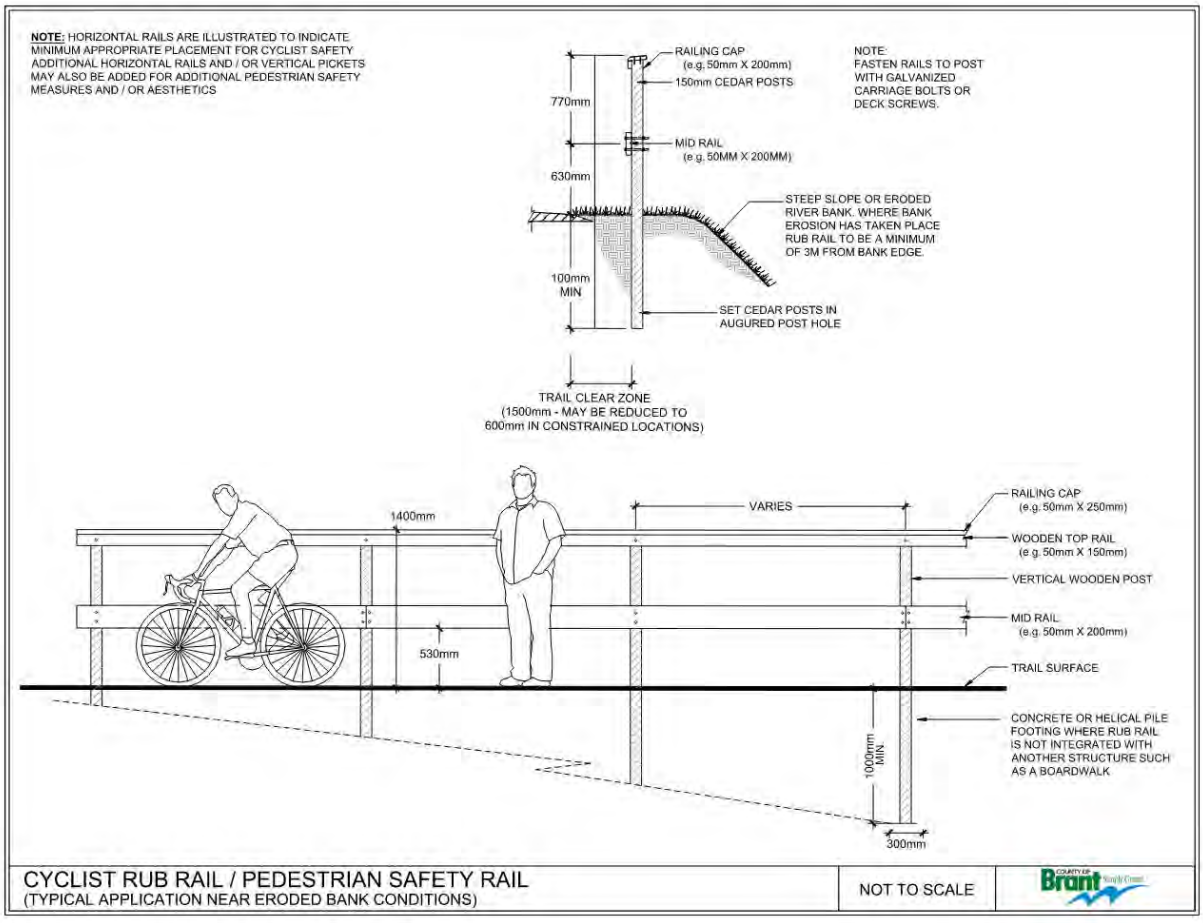


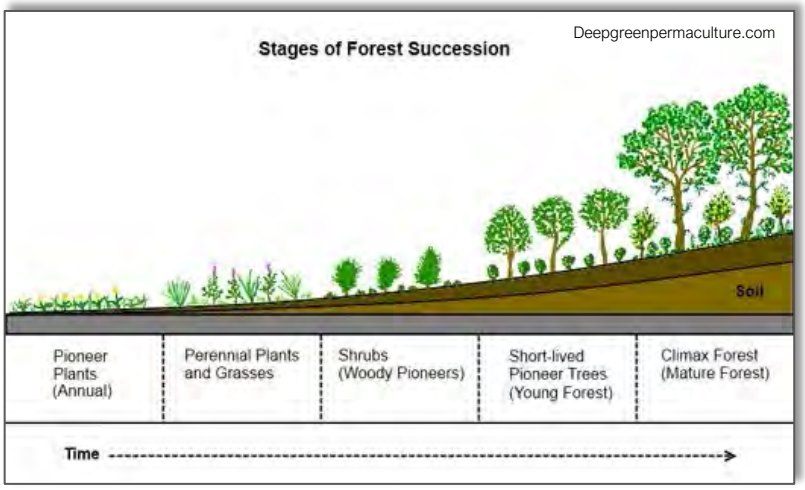
Figure 27 Cyclist Rub Rail/Pedestrian Safety Rail

5.4 Restoration and Naturalization

Several restoration and naturalization measures are recommended below to protect and enhance Barker's Bush, within and outside of the woodland.

5.4.1 Naturalization Planting Enhancement and Habitat Creation

Naturalization planting enhancements are recommended in several areas within Barker's Bush. See mapping in Figures 20-23 for proposed locations. Benefits of naturalization through increased tree canopy are well known. Trees contribute to climate change mitigation, erosion mitigation, air pollution reduction, habitat creation, along with many other benefits (Turner-Skoff & Cavender, 2019). An Environmental Impact Study has been completed by Losani Homes and portions of the proposed locations will be the responsibility of the developer to plant as part of the subdivision agreement terms. These planting enhancements focus on former agricultural zones and cultural meadows that lack tree canopy coverage. These areas can be seen as succession zones that, if planted with appropriate species, will one day form part of the Barker's Bush canopy and outcompete aggressive invasive species. Species should be native succession trees, shrubs and perennials, mixed with mature forest species common to Barker's Bush. It is recommended that County Staff consult with Six Nations of the Grand River to cross reference appropriate/desirable species with medicinal and foraging attributes. Priority should be given to maximizing the investment by choosing fast-growing, drought-tolerant succession species. The County of Brant Recommended Planting Species (https://www.brant.ca/en/invest-in-brant/resources/RecommendedPlantSpecies_Final_Aug05.pdf) contains a list of native species appropriate for use. This list can be cross referenced with the Barker's Bush Trails Ecological/Land Resource Plan to determine appropriate mature forest species. Small tree whips stock, and even bare root stock, are recommended due to their relative low cost, ease of installation and higher rates of survival.



Naturalization can take a phased approach. Seeding of former agricultural lands with native prairie seed mixes starts the naturalization process and will deter an influx of invasive species. Shrub and tree planting initiatives could then be coordinated by County staff and community interest groups. Community partnerships, including corporate partnerships and citizen advisory groups, are an excellent way to create buy-in to naturalization enhancement planting through education, donations, and volunteer planting events.

Naturalization and restoration planting can be paired with habitat structure creation and invasive species removal efforts, where required, for increased effectiveness. Recommended habitat creation items should include bat boxes, snake hibernacula and alteration of snags for bird nesting.

5.4.2 Proposed Trail Closures

Trail Closure

Several trail closures are recommended within Barker's Bush for ecological restoration purposes. Protecting and enhancing the natural environment is a core objective of the Plan. The Barker's Bush Trails Ecological/Land Resources Plan recommends deterring off-road motorized vehicles within the GRCA regulated wetland, a Natural Heritage Feature (Ecolands, 2008), to protect its hydrological and botanical quality. This wetland is known as the West River Paris Swamp (Stephenson and Kroetsch 1988 in NHIC 2007) and contains a Provincially Rare Vegetation Community. Much of the area is inaccessible to foot traffic due to soggy conditions. A typical trail decommissioning detail can be found in Figure 30.

Closures consist of planting, log/boulder/brush barriers, signage, and temporary fencing. Indications of closure are most effective at entrances / exits. Additional effort to rehabilitate trails lengths can be beneficial, but revegetation is likely to occur naturally as trail use in the area subsides. While determined unauthorized off-road motorized vehicle users may circumvent the trail closures, the closures provide an indication that their use is not sanctioned within Barker's Bush. This is to be implemented as part of an ongoing educational and regulatory effort to deter unauthorized use of the trail system by off-road motorized vehicles. Physical closures without the regulatory and educational components are likely to be fruitless and potentially costly. County staff should inspect locations prior to closure and photo document existing conditions. Closures should be assessed during yearly audits.

Closure points to deter unauthorized off-road vehicle use should be prioritized to emphasize safety and minimize user conflict in the short term, with ecological restoration as a long-term, iterative goal as unauthorized usage subsides. Closures should not deter the movement of wildlife or the gathering of medicinal plants by Indigenous people.

5.4.3 Invasive Species Control

Invasive species removal, while not imperative to the overall function of the trail system can be used to deter the spread of invasive plant species into the Barker's Bush woodland. Invasive species affect the botanical health of ecosystems by crowding out native species. Several invasive species have been noted in the Barker's Bush Trails Ecological/Land Resource Plan. These include, but are not limited to, Common Buckthorn, European Privet, Honeysuckle, Common Reed and, of particular concern, Japanese Knotweed. Spread of these species is further enabled by foot traffic, cyclists, and off-road motorized vehicles. Removal and management strategies can slow or reverse the spread of these species. These can range from County-led community initiatives, to contracted herbicide treatment and removal programs. Invasive species removal plans must be fluid and responsive to changing needs. Invasive plant communities should be located and marked for removal prior to treatment. Best Management Practices for invasive species treatment in Ontario are provided by the Ontario Invasive Plant Council and can be found in the following link: https://www.ontarioinvasiveplants.ca/resources/best-management-practices/. A formal invasive species removal plan should be developed. Locations should be inspected prior to treatment including photo documentation of existing conditions. Removal success should be assessed during yearly audits.

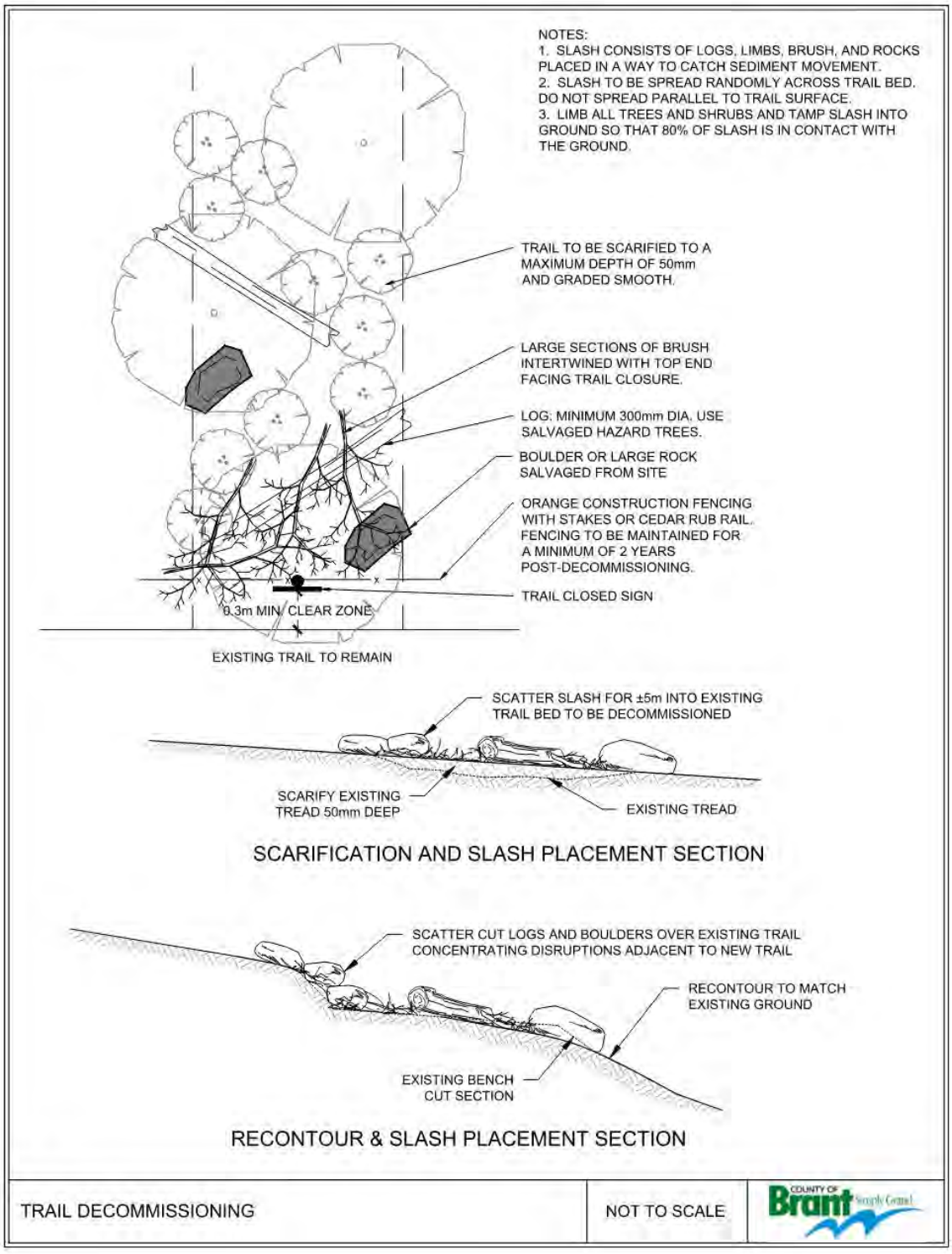


Figure 28 Trail Decommissioning

5.5 Trailhead, Mid and End of Trip Facilities

Network continuity, connectivity and feasibility are further enhanced through the implementation of network amenities. In some cases, amenities can have a significant impact on the overall experience and enjoyment for a trail user. When addressing trailheads and end of trip facilities, the conversation typically focuses on the potential implementation of various trail amenities such as seating/rest areas, signage, bicycle parking, garbage receptacles, and gates/access barriers. Amenities at trailheads and within the woodland should fit in well using natural materials and colours to keep with the existing look and feel of Barker's Bush.

Trail network amenities can be implemented individually or as a grouping of amenities commonly referred to as a staging area. They meet a critical need for trail users and are also significant opportunities for the County and those responsible for the implementation of the trail network to engage in partnerships with local organizations, services, and businesses.

At the trail heads, which provide access to Barker's Bush, the County should consider the design and implementation of a staging area. Figure 31 illustrate the key elements of a typical trailhead staging area.

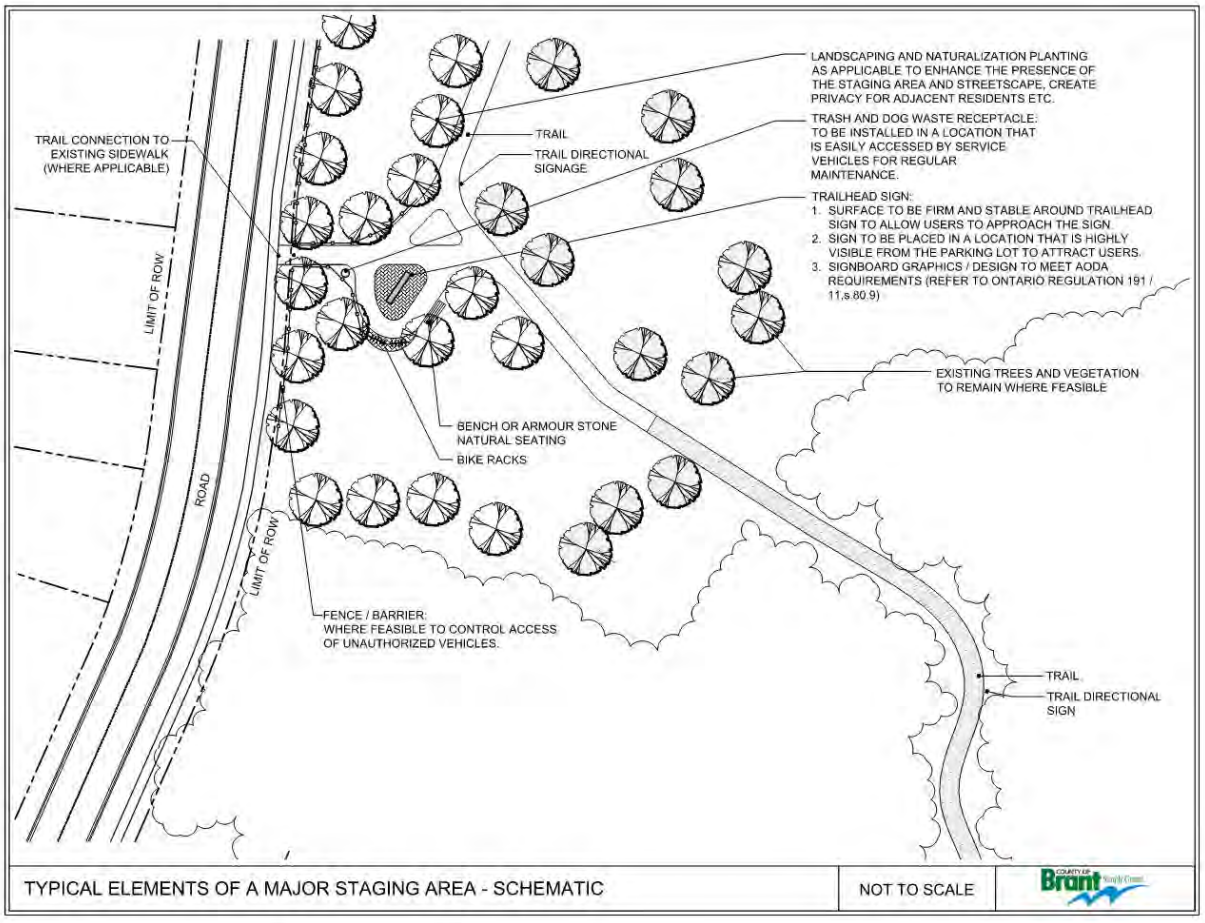


Figure 29 Typical Elements of a Major Trailhead Staging Area - Schematic

Seating provides the opportunity to pause along the trail at points of interest or to just rest. Young children, older adults and those with disabilities will need to rest more frequently than others. Benches are the most common form of seating, but flat boulders, and sawn logs are some alternatives depending on the trail type and setting. Where trails are built to accommodate mobility-assisted devices, the design of seating areas and lookouts should include a level area beside the bench with a curb or other appropriate wheel stops.

For heavily used routes it is reasonable to provide some form of seating every 250m, whereas woodland trails will have fewer amenities located much less frequently along the route.

SECTION SIX

IMPLEMENTATION AND MANAGEMENT

A Comprehensive Trails Master Plan for

Barker's Bush

6 Implementation

6.1 Implementation Strategy

To help with the implementation of the Plan a strategy has been developed and is intended to be used as a guide for annual budgeting, coordination, maintenance and management of the network and plan recommendations. The intent is for this section to be used by staff and decision makers for day-to-day coordination and as a communication tool to partners who will support the implementation of the Plan.

There are two key processes that need to be considered following the completion and adoption of the Plan, the implementation process, and the future planning process. Recommended next steps specific to implementing trail network and environmental works has been identified to support day-to-day decision making by staff and Council and a suggested approach to updating the trails plan – when appropriate – has been identified.

6.1.1 Guiding Implementation

Included in Table 6 is a blueprint and guide for implementing the trail network and environmental works. Once the Plan has been completed and adopted the County of Brant will be responsible for taking the recommendations and identifying those that will be implemented on an annual basis.

	IMPLEMENTATION PROCESS
PRELIMINARY REVIEW	• When a project moves to the planning stage or a new opportunity arises, a preliminary review should be completed to consider responsibility, timeline, cost effectiveness, and feasibility
FEASIBILITY ASSESSMENT	• Feasibility should consider route selection, design guidelines, site characteristics, level of use and context-specific considerations • Prepare preliminary functional design
DETAILED DESIGN, TENDER & IMPLEMENT	• Proceed with construction – explore partnerships for cost-sharing • Design should be completed based on best practices and guidelines/standards, priority and phasing should be consistent with the Plan • Some implementation to be carried out by staff as resources allow
MONITOR AND EVALUATE	• Following construction and use, the facility should be monitored to ensure functionality • Facility should be properly maintained and upgraded when necessary

Table 6 Implementation Process

6.1.2 Future Planning Process

The intent is for the Plan to be a flexible document that is considered up-to-date and reflective of the current policies and practices of the County of Brant. The content of the Plan should continue to evolve as planning policy, environmental assessment processes, design and construction practices are adapted, and budgeting decisions are made.

A typical master plan is updated every 5 – 10 years as stipulated by the Planning Act; the County of Brant should follow these regulations and suggested practices for the Plan following its adoption to ensure that the recommendations and policies contained within the document remain relevant and up-to-date.

6.1.2.1 Implementation Management

Implementation of the Barker's Bush Trails Master Plan should be managed and coordinated in a way that is consistent with the current practices of County staff and integrated into other related implementation processes.

Coordination and management of the implementation process can be challenging when staff are being asked to undertake numerous assignments. The development and use of tools to support implementation can be a helpful solution to these challenges. When developing implementation tools, it is important to consider their use. They serve two primary functions:

1. Communication: The development of materials or messages that help to support communication around the Plan with internal staff and decision makers, members of the public and stakeholders with the purpose of disclosing status, recommendations, and next steps.
2. Tracking: To support the confirmation of trail feasibility and priorities and their inclusion within future capital costs and budgeting

Three implementation management tools have been identified for consideration by the County to support next steps and day-to-day management of the Plan's implementation.

Proposed Tool Overview:

1. Geographic Information System Database
   - A Geographic Information System (GIS) database contains all information related to the development of trail network mapping and trail management. The GIS database contains current information with regards to routes and facility types that are included in the trails network.
2. Photographic Inventory
   - Georeferenced photos were taken which identify context specific considerations and characteristics. The photos, along with the information contained within the GIS database can then be used to develop a Keyhole Markup Language (KML) file which geographically positions the photos and waypoints in Google Earth to highlight their location more clearly.
   - This tool can be used during different project phases such as the feasibility assessment and to assist in better understanding community questions/concerns that arise throughout the project design and implementation.
3. Management Spreadsheet
   - Since many staff members do not have access to GIS programs and/ or resources, spreadsheets may be used as an alternative tool. Excel network management spreadsheets can display the same content as a GIS database and be used as an additional way to complete the same tasks.
   - Network management spreadsheets should be updated correspondingly with GIS databases. Spreadsheets can also contain additional information like route costing and can be used as an additional implementation resource.
   - Trail counters are installed intermittently by County Staff. Counter data should be stored in a management spreadsheet to track usage trends.

6.2 Maintaining the Network

Once implementation has occurred there is ongoing work which needs to be done related to the trail system. The County will need to consider how they will maintain the existing and future trail system to ensure that the trail and associated facilities are monitored and maintained to a level that is considered suitable for those managing the trail and effectively communicated to those using the trail.

6.2.1 Trail Network Management

The County of Brant provides an extensive trail network accessible to many different users whether they are walking, hiking or cycling. It is important that all trail users have quality experiences. Off-road motorized vehicle use within the County is only allowed on private property, yet unauthorized use occurs on the trails within Barker's Bush. While steps are being taken to remove this type of use, it should still be taken into account when addressing conflict resolution. With the increasing pressures on the existing trail infrastructure, it is important to understand the potential concerns among trail users and make efforts to minimize any conflicts. Changes in the traditional use of trails over time can lead to conflict, particularly if the rules of trail use responsibility are not respected.

There were two main concerns related to trail conflicts that were identified in the engagement process:

- Natural Environment: Growing awareness of the value of preserving the sensitive ecosystems within Barker's Bush is leading to an increased interest in mitigating the negative impacts of recreational activities on the natural environment. Local trail users recognize the importance of limiting the impacts of trail infrastructure and recreational transportation modes on the delicate natural ecosystems within Barker's Bush.
- Safety/ Risk Management: The existence of many different trail users can result in conflicts related to a user's comfort with personal safety, particularly where users share trails and use different modes of transportation (i.e. Motorized vehicles, cycling, walking).

Following implementation there needs to be considerations for ongoing maintenance of the existing and proposed routes. User experience can be significantly impacted by inadequate or infrequent maintenance.

Conflict Resolution

Due to the varying nature of trail activities (i.e. motorized vs. human powered pursuits), users tend to self-regulate and to seek out areas that are easy to access and best-suited to their needs regardless of potential conflicts with other users. Trail user education is the first and most effective strategy to address conflicts that may arise between different users of a given trail. Many municipalities across the province have proven that conflicts on multi-use trails can be minimized by establishing codes of conduct/trail etiquette and advertising them on signs, trail guides and municipal sites.

6.2.2 Management and Maintenance

An effective maintenance program requires the investment of time, effort and funding to keep the trail network and surrounding area in peak condition. Regular care and maintenance promote safer trails (Tomczyk et al.

2017), continued use and access and helps to preserve natural areas surrounding the trail network by encouraging users to remain on designated trails. A good maintenance program is responsive to trail erosion and degradation and helps to keep the network safe for all users. The maintenance program should focus on all trails in Figure 20-23, with additional monitoring on environmental features. Management and maintenance should be overseen by parks staff with experience and training in trail management practices, such as Ontario Parks Association workshops.

The County should continue to document maintenance activities. The maintenance log should be updated when features are repaired, modified, replaced, removed, or when new features are added.

Accurate trail logs also become a useful resource for determining maintenance budgets for individual items and tasks, and in determining total maintenance costs for the entire trail. In addition, they are a useful source of information during the preparation of tender documents for trail contracts, and to show the location of structures and other features that require maintenance.

Setting Baselines for Assessment

In order to keep track of the status of maintenance/enhancements, baseline assessments should take place prior to commencement. Doing so will determine the existing conditions and allow monitoring to determine the success of initiatives. When new features are added, or new work is performed, at Barker's Bush, features should be documented and included in maintenance logs. Baselines should be set for the following recommended enhancements:

- Invasive Species – Develop an invasive species management plan and log areas of invasive species presence.
- Planting Enhancements – Upon completion of planting log species, locations and quantities planted.
- Trail Closures – Upon installation of trail closure features log location.
- Habitat Enhancements – Upon installation of habitat enhancements log location and type.

General trail maintenance guidelines include:

- Prepare an annual Trail Maintenance Plan
- Practice environmentally sound maintenance and use techniques appropriate for the type of trail
- Inspect trails in the off-season and maintain them throughout the peak seasons
- Prepare an inspection checklist for review based on anticipated maintenance tasks

See Table 7 for Barker's Bush Maintenance Task List

FREQUENCY	MAINTENANCE TASK
IMMEDIATE (within 24 hours of becoming aware of the situation through a "hotline", email or other notification or observation)	• As a minimum, mark, barricade and sign the subject area to warn trail users or close/divert the trail until the problem can be corrected. • Remove vegetation and/or windfalls, downed branches etc., where traffic flow on the trail is impaired or the obstruction is resulting in shifting of the trail into environmentally sensitive area. Remove hazard trees that are an immediate risk to use. • Repair or replace items that have been vandalized or stolen/removed. This is especially important for regulatory signs that provide important information about trail hazards. • Removal of trash in overflowing containers or material that has been illegally dumped.

FREQUENCY	MAINTENANCE TASK
	• Monitor trail areas and structures that have washed out resulting in deterioration that poses an immediate safety hazard. • Repair structural elements on bridges such as beams, railings, access barriers and signs.
REGULARLY (weekly / biweekly / monthly)	• Trail patrols/inspections should review the trail conditions (as often as weekly in high-use areas), to assess conditions and prioritize maintenance tasks and monitor known problem areas. • Regular garbage pickup (10-day cycle or more frequent for heavily-used areas). • Repair within 30 days or less, partially obstructed drainage systems causing intermittent water backups that do not pose an immediate safety hazard, but that if left unchecked over time will adversely affect the integrity of the trail or sensitive environmental features. • Intermittently monitor habitat creation enhancements for sightings of targeted species. • Monitor trails for evidence of off-road vehicle use.
ANNUALLY	• Conduct an annual safety audit. This task can be efficiently included with general annual safety audits for parks and other recreation facilities. • Evaluate structural supports for trail infrastructure and amenities for repair and/or replacement needs. • Examine trail surfaces to determine the need for patching and grading. Recommend surface upgrades as necessary per trail typologies. • Grading/grooming the surface of granular trails. Level the trail tread as necessary and restore the trail grade to the original slopes. Fill ruts, holes, low spots, or muddy areas. • Conduct a hazard tree audit of all trees within 15m of the active trails. Remove as necessary. • Pruning/vegetation management for straight sections of trail and areas where branches may be encroaching into the clear zone. This is a preventative maintenance procedure. In wooded areas naturally disperse cuttings to blend into surroundings. Where invasive species are being pruned and/or removed, branches and cuttings should be disposed of per Ontario Best Practices invasive species manuals. • Inspect and secure all loose side rails, bridge supports, decking (ensure any structural repairs meet the original structural design criteria). Repair damage. • Clear and maintain drainage features to minimize trail erosion and environmental damage. • Check, repair or replace signs and trail markers prior to peak season use. • Repair and replace trail closure points as necessary. • Remove and mitigate unauthorized alterations to trails. • Monitor planting enhancements and log locations for replacements or supplementation.
EVERY 3 TO 5 YEARS	• Clean and refurbish signs, benches, and other trailside amenities. • Mitigate and repair environmental damage

FREQUENCY	MAINTENANCE TASK
	• Hire a professional consultant or utilize trained staff to conduct an invasive species audit and remove as necessary
EVERY 10 TO 20 YEARS	• Resurface asphalt trails (assume approximately every 15 years). • Major renovation or replacement of large items such as bridges, kiosks, gates, benches etc.

Table 7 Maintenance Task List

Annual maintenance budgets should be refined to accommodate the maintenance of trail facilities. As the proposed trail network is implemented the trail budget should increase to address the increasing number / length of trail facilities that have been implemented.

6.2.2.1 Funding the Trail Plan

The proposed trail network as well as the operation, planning and maintenance recommendations will require funding. It is not realistic or possible for the cost to be the sole responsibility of the County. Potential external funding opportunities building on existing partnerships should be explored regularly and pursued wherever feasible to offset local costs.

The following are some current potential external funding sources that could be explored to support the implementation of trails and environmental works. The funding programs highlighted below were available at the time the Plan was prepared. It is not an exhaustive list and is subject to change; therefore, potential funding programs should be monitored regularly.

OPPORTUNITY	ADDITIONAL DETAILS
UPPER TIER GOVERNMENT FUNDING SOURCES	
FEDERAL GAS TAX	• https://www.infrastructure.gc.ca/plan/gtf-fte-eng.html
FEDERATION OF CANADIAN MUNICIPALITIES GREEN MUNICIPAL FUND	• https://fcm.ca/home/programs/green-municipal-fund.htm
FEDERAL AND PROVINCIAL INFRASTRUCTURE / STIMULUS PROGRAMS	• For Federal Government: https://www.canada.ca/en/office-infrastructure.html • For Provincial Government: https://www.ontario.ca/page/infrastructure-funding-small-communities
ONTARIO TRILLIUM FOUNDATION	• https://otf.ca/ • Grants that broaden access and improve community spaces
MINISTRY OF THE ENVIRONMENT, CONSERVATION & PARKS ONTARIO COMMUNITY ENVIRONMENT FUND	• Payments from environmental penalties are available to the community impacted by environmental violations to support eligible projects within that affected community • Restoration projects are given priority • Available for Ontario municipalities • https://www.ontario.ca/page/ontario-community-environment-fund

OPPORTUNITY	ADDITIONAL DETAILS
ONTARIO – MINISTRY OF TOURISM, CULTURE AND SPORT SUPPORT FOR ONTARIO'S TOURISM REGIONS - PARTNERSHIP FUNDING	• Regional Tourism Organization will be eligible to receive additional funds where they can demonstrate that they have received funds from other sources in support of regional activities • http://www.mtc.gov.on.ca/en/regions/funding.shtml
FEDERAL – GROWING CANANDA'S FORESTS PROGRAM	• The Government of Canada is committed to planting an additional 2 billion trees over the next 10 years as part of a broader approach to nature-based climate solutions • https://www.nrcan.gc.ca/science-and-data/funding-partnerships/funding-opportunities/forest-sector-funding-programs/growing-canadas-forests-program/23308
FOUNDATION FUNDING SOURCES	
TD FRIENDS OF THE ENVIRONMENT FOUNDATION GRANT	• Supports a wide range of environmental initiatives, with a primary focus on environmental education and green space programs • Eligible projects include schoolyard greening, park revitalization, community gardens, park programming and citizen science initiatives • https://www.td.com/corporate-responsibility/fef-grant.jsp • Includes Municipalities and First Nations
K.M. HUNTER FOUNDATION ENVIRONMENT GRANTS	• Supports three areas: protection of wildlife species, stewardship of land, and organizations that fight to change the laws so that environmental areas can be protected • https://www.kmhunterfoundation.ca/environment.html
WESTON FOUNDATION LAND CONSERVATION	• Protecting Critical Habitats, Environmental Education, Revitalizing Urban Green Spaces • Does not accept unsolicited proposals • https://www.natureconservancy.ca/en/who-we-are/our-partners/foundations-and-organizations/weston-family-foundation.html
GOSLING FOUNDATION	• Primary focus is supporting projects that enhance and expand the capacity of nature organizations • https://www.goslingfoundation.org/index.cfm?page=Fundinginterests
TREECANADA	• Treemendous Communities Program encourages and supports community tree planting projects • https://treecanada.ca/greening-communities/community-tree-grants/treemendous-communities/
FORESTS ONTARIO	• 50 Million Tree Program • https://forestsontario.ca/en/program/50-million-tree-program

OPPORTUNITY	ADDITIONAL DETAILS
BRANT WATERWAYS FOUNDATION	• Provide connections to world-class outdoor recreational opportunities that respect the natural ecosystems and promote their conservation • Brant Waterways has provided a $50,000 grant to date. • http://brantwaterways.ca/Brant-Waterways-Grants
FOUNDATION FUNDING SOURCES (CHARITABLE ORGANIZATIONS ONLY)	
MCLEAN FOUNDATION ENVIRONMENT GRANT	• May consider land securement • Provides grants with particular emphasis on projects showing promise of general social benefit but which may initially lack broad public appeal • Available to Charitable Organizations • http://www.mcleanfoundation.ca/applications/
MOUNTAIN EQUIPTMENT CO-OP COMMUNITY GRANTS	• Planning, construction and maintenance of facilities or infrastructure such as trails and skills-parks • Available to Charitable Organizations • https://www.mec.ca/en/explore/spring-and-fall-grants
LOCAL SERVICE CLUBS	• E.g. Lions, Optimist etc.

Table 8 Funding Opportunities

Not all funders will be an exact fit. Some funders support trail acquisition but municipal government may be ineligible. Partnerships with non-profit organizations with an interest/trail mandate may help to leverage funding from sources that may not be typically explored for trails.

As the County identifies budgets and implementation priorities on an annual basis, additional external funding sources should be reviewed and considered to support funding and implementation.

6.3 Coordination and Partnerships

The effort to implement the Barker's Bush Comprehensive Trail Master Plan will require coordination and collaboration. Relationships with existing partners should continue to be enhanced while new partnerships should be explored and fostered. While the County has taken the lead as the owner of Barker's Bush, implementation should not happen in isolation. The following is an overview of potential partnerships that should be continued or considered to facilitate the implementation of the Plan.

6.3.1 Local Interest Groups

Local interest groups such as the Brant Cycling Club, Brant Waterways Foundation, Brant Pedalers and Paddlers and Brant Death Racers (Running Club) have all shown active participation in the public consultation events for the Plan. They should continue to be leaned on in the future. These groups have shown cohesive, volunteer-based organization, and should be utilized where possible for local knowledge and volunteerism for trail improvement and naturalization initiatives. If individual citizens are interested in becoming involved in upkeep of Barker's Bush, they are encouraged to reach out to County Staff for volunteer opportunities.

6.3.2 Six Nations of the Grand River

Elected members of Six Nations of the Grand River have expressed interest in being a partner for consultation on Barker's Bush. Six Nations can provide advice on appropriate planting species/strategies and habitat creation. They should be consulted for Indigenous history content for interpretive signs.

Six Nations of the Grand River consults on planting compensation on municipal and provincial projects within the County of Brant. At times, planting compensation requirements cannot be accommodated on the project site. Off site planting is then recommended. It is recommended that Barker's Bush be flagged as a potential receiving site for these extra compensation plantings.

6.3.3 Ontario Trails Council

The Ontario Trails Council is a member-driven volunteer led, non-profit charity, that promotes the creation, development, preservation, management and use of recreational trails. Established in 1988 it is now the largest trail association of its type in Canada, with a membership consisting of over 220 economic development, tourism, planning, recreation, park and club organizations, municipalities, and conservation authorities.

OTC's goals include continuing to increase the number, length, variety and accessibility of trails throughout the province; providing an informed, credible voice in support of trails; promoting the safe and responsible use of trails; and acting as a provincial resource centre for trail information and promotion.

6.3.4 Developers

Considering that the Barker's Bush trail network surrounds a new development area there is a strong need for the County of Brant to continue to foster and encourage this relationship. Establishing high quality and connected trail facilities throughout residential development areas helps to improve quality of life and can have a positive impact on housing prices.

6.3.5 Forests Ontario

Forests Ontario is a not-for-profit organization focused on tree planting, forest stewardship, forest education and awareness. They are the leading charity for the delivery of high-quality, large scale tree planting programs across Canada. Additionally, they offer Forestry Stewardship programs that help municipalities and individuals manage and improve their forest resources. In order to improve on the Barker's Bush woodland, a partnership should be fostered with Forests Ontario.

6.3.6 Carolinian Canada

Carolinian Canada is a network of leaders growing healthy landscapes for a green future in the Carolinian Zone, Canada's extraordinary far south, in the spirit and practice of reconciliation. We connect science, community and business for healthy ecosystems and climate-smart neighbourhoods from Toronto to Windsor, Ontario. There are important organizations working on healthy landscape goals in the Carolinian Zone and Carolinian Canada exists to connect them to meet shared objectives on the landscape and to bring the Zone together for greater tangible impact. In order to improve on the Barker's Bush woodland, a partnership should be fostered with Carolinian Canada.

7 Conclusion

The Barker's Bush Comprehensive Trails Master Plan has been developed as a long-term blueprint and guide for the management, enhancement and preservation of Barker's Bush and its trail network.

Moving forward in a collaborative manner with quality trail infrastructure and a coordinated environmental preservation strategy will add significant value to the unique experiences, opportunities, natural beauty, and community that is found within Barker's Bush.

8 References

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7) County of Brant Wayfinding Strategy Draft Final, (Stempski Kelly Associates Inc, 2018)
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