



The Cheltenham Badlands, Caledon.

# Cheltenham Badlands Master Plan

October 2018

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## APPROVAL STATEMENT

The Cheltenham Badlands property is a 36.6 hectare parcel of land located in the Town of Caledon within the Regional Municipality of Peel, and is part of the Niagara Escarpment Parks and Open Space System (NEPOSS). Title to the property is held by the Ontario Heritage Trust.

### Approval

I am pleased to approve the Cheltenham Badlands Master Plan as the official policy document for the management and development of the Cheltenham Badlands property. The plan reflects the Ontario Heritage Trust's commitment to protect the natural environment of the Niagara Escarpment and the natural and cultural features of the Cheltenham Badlands property, and to maintain and develop high quality opportunities for education, recreation, discovery and enjoyment of the Niagara Escarpment by Ontario residents and visitors.

Beth Hanna, Chief Executive Officer  
Ontario Heritage Trust

Date

I am pleased to deem this master plan in conformity with the general intent and purpose of the Niagara Escarpment Plan (2017) pursuant to S. 13-(1) of the Niagara Escarpment Planning and Development Act.

David Ayotte, Director  
Niagara Escarpment Commission

Date

Jason Travers, Director of Natural  
Resources Conservation Policy Branch,  
Ontario Ministry of Natural Resources and Forestry

Date

## ACKNOWLEDGEMENTS

The Cheltenham Badlands Master Plan has been the product of the input and ideas of many individuals since its inception in 2015. The Master Plan was prepared by Dillon Consultants and staff of the Ontario Heritage Trust.

Thank you to the staff at the Niagara Escarpment Commission and the Ontario Ministry of Natural Resources and Forestry who participated in the development and approval of the Master Plan and helped to ensure that the Cheltenham Badlands remains a unique and important part of the Niagara Escarpment Parks and Open Space System.

Thank you to the Mississaugas of the New Credit First Nation for their continued support with the Master Plan process and their archaeological assessment work at the property.

Thank you to the following organizations that provided input and feedback throughout the Master Plan process as members of the Cheltenham Badlands Management Planning Team and helped shape the Master Plan:

The Bruce Trail Conservancy  
Credit Valley Conservation  
Town of Caledon  
Region of Peel  
Caledon Countryside Alliance

Thank you to the University of Toronto and the University of Waterloo for their continued research contributions that supports the understanding of this property.

Thank you to members of the public, community groups and government agencies who participated in stakeholder meetings, provided guidance and supported the plan – and whose continued support will effectively ensure the long-term protection, appreciation and enjoyment of the Ontario Heritage Trust's Cheltenham Badlands property.

## EXECUTIVE SUMMARY

***Vision Statement: A conserved Cheltenham Badlands with protected natural and cultural heritage features that provides safe and accessible opportunities for visitors to experience the site and participate in its stewardship through education and interpretation.***

The long-term goal for the Cheltenham Badlands Master Plan is to protect and enhance the site's unique natural and cultural resources while providing opportunities for the public to appreciate its outstanding scenic beauty and participate in passive recreational activities. The Ontario Heritage Trust, with its property partners the Credit Valley Conservation and the Bruce Trail Conservancy, will manage the property with this vision and long-term goal in mind and facilitate safe and controlled access by the public by improving accessibility and viewing through a system of boardwalks and trails. These improvements at the Badlands will help to preserve the site for future generations.

The Cheltenham Badlands property is a 36.6-hectare parcel of land situated in the Town of Caledon within the Regional Municipality of Peel. The property is a favourite destination for tourists and residents to observe the rare geological feature known as the Cheltenham Badlands. The property is owned by the Ontario Heritage Trust.

The Badlands feature results from erosion and weathering of the exposed clay of the underlying Queenston shale. Exposure of the feature was a result of removing forest cover, grazing and other farming practices in the 19th century. This, combined with shallow soil cover, led to erosion and the subsequent exposure of the underlying shale. The Queenston shale clay red colour results from the chemical reaction when exposed to the atmosphere. Similarly, periodic groundwater percolation has led to the distinctive green-gray bands which result from further chemical reactions. Although the appearance of the Badlands is a result of past erosion causing activities and chemical reactions, increasing rates of erosion can be attributed to the increasing visitation on the property.

The Cheltenham Badlands property is part of the Niagara Escarpment Parks and Open Space System (NEPOSS). Most of the site is designated a provincially significant Earth Science Area of Natural and Scientific Interest (ANSI) for the scientific, educational and interpretive values of the badlands feature. The property was brought into public ownership in 2000 to protect the badlands feature and to secure a permanent corridor for the Bruce Trail. Since 2008 the Trust commissioned ecological surveys and multiple background reports,



developed research partnerships with various academic institutions and collaborated with the Cheltenham Badlands Management Planning Team (CBMPT) to identify and address public safety concerns, erosion, conservation, and stewardship issues on the property. The Master Planning process has benefitted greatly from the participation and advice of the members of the CBMPT (Town of Caledon, Region of Peel, Bruce Trail Conservancy and its local Caledon Hills Trail Club, the NEC, MNRF, Caledon Countryside Alliance, CVC and the University of Toronto), from public consultations and meetings, and from the input of the Mississaugas of the New Credit First Nation.

The University of Toronto also participates as a member of the CBMPT, studying the Cheltenham Badlands topography. The University of Toronto has undertaken extensive erosion testing and monitoring at the Cheltenham Badlands site in 2009, 2012, 2014, and 2017. Their research indicates that the badlands are a result of soil cover erosion and the resultant exposure and extensive weathering of the underlying shale formation. Furthermore, the results showed that there is continued erosion taking place at an increasingly rapid rate as a result of human foot traffic on the badlands. Each year, the increasing foot traffic continues to erode the badlands feature at a rapid rate due to the public's unrestricted access to the site feature. The erosion research undertaken by University of Toronto and the ecological succession research completed by the University of Waterloo continues to guide the Badlands property management.

Balancing the desired public use of the Cheltenham Badlands with the protection of people and its sensitive features is an increasing challenge. The uniqueness of the badlands feature and a growing public awareness of its existence has significantly increased visitation to the site in recent years. This resulted in safety concerns related to uncontrolled parking along Olde Base Line Road, accelerated erosion of the badlands feature from increased pedestrian traffic, the development of rogue trails throughout the site, and other management issues. To mitigate damage to the site and address public safety concerns, the Ontario Heritage Trust closed the property to public access and initiated the Master Plan process with the CBMPT in 2015 which carried on over the following three years and involved consultation with government agencies, First Nations and local communities.

### **Master Plan Process**

The CBMPT developed four guiding principles for its work. These principles align directly with the Trust's mandate and provided useful focus to the Master Plan discussions:

- conservation of the property's cultural and natural heritage values
- safety for all individuals who visit the site
- improved accessibility for those who wish to access the site
- enhanced opportunities for interpretation and public education.

The Master Plan process was separated into four key stages that began with gathering background information and identifying potential development opportunities and constraints on the Badlands property. At each stage, the Ontario Heritage Trust consulted extensively with the public and stakeholders to present important information, analysis and develop options to enhance the visitor experience. The badlands property is located on the traditional territory of the Mississaugas of the New Credit First Nation (MNCFN). Engagement with the MNCFN was conducted throughout the Master Plan process and focused on their interest in ensuring protection for the natural heritage of the site and assisting with the interpretation of its cultural heritage. The knowledge and feedback of each stage was documented in detail and posted on the Trust's website. Local business, residents, academics, accessibility committees and local municipal staff and conservation organizations all contributed to shaping the final, optimal solution for the Badlands.

### **Master Plan Implementation**

The Master Plan for the Cheltenham Badlands outlines the final concept phases of implementation. Each phase is prioritized to address public access concerns and to ensure minimal impact with a plan to slowly expand the infrastructure on site to enhance and support the visitor experience.

The Cheltenham Badlands Master Plan will guide property management and development for the next 5-10 years. The overall management strategy will be adaptive to the visitation pressures observed on the property during annual monitoring to collect data about the number of visitors and popular, crowded parts of the property. The data and its analysis as well as significant fundraising will be needed to justify additional visitor infrastructure.

## 1.0 BACKGROUND

### 1.1 Introduction

The Cheltenham Badlands property is a 36.6-hectare parcel of land located in the Town of Caledon within the Regional Municipality of Peel. The geological feature known as the Cheltenham Badlands is a notable and impressive landform. Most of the site is designated a provincially significant Earth Science Area of Natural and Scientific Interest (ANSI) for the scientific, educational and interpretive values of the badlands feature.

The Cheltenham Badlands property is part of the Niagara Escarpment Parks and Open Space System (NEPOSS). It was brought into public ownership in 2000 to protect the badlands feature and to secure a permanent corridor for the Bruce Trail.

Title to the property is held by the Ontario Heritage Trust, the province's heritage agency with a province-wide

mandate to identify, protect, promote and conserve Ontario's cultural and natural heritage. The Trust has entered an agreement with Credit Valley Conservation to manage the property. The Bruce Trail Conservancy will continue to play its essential role in assisting with maintaining its trail.

A Cheltenham Badlands Management Planning Team (CBMPT) was established to guide planning and management of the site. The committee comprised of representatives from: the Ontario Heritage Trust (the Trust); the Bruce Trail Conservancy and its local chapter the Caledon Hills Trail Club; Credit Valley Conservation (CVC); the Region of Peel (ROP); the Town of Caledon; and the Caledon Countryside Alliance. The Niagara Escarpment Commission (NEC) and the Ontario Ministry of Natural Resources and Forestry (MNRF)



Cheltenham Badlands



provided guidance and comment. The Trust also worked closely with the Mississaugas of the New Credit First Nation on matters related to the conservation and interpretation of the site.

### 1.2 Site Context

The Cheltenham Badlands property is located approximately 4 kilometres from Highway 10, with frontage on Olde Base Line Road on the northeast property line and partial frontage on Creditview Road on the southeast illustrated on **Figure 1 (page 3)**. The Village of Cheltenham is the closest community. The property is on the traditional territory of the Mississaugas of the New Credit First Nation.

The property lies on the periphery of one of the largest tracts of intact forest along the entire Niagara Escarpment, extending between Limehouse in Halton Region and the Forks of the Credit in Caledon. The property provides opportunities for public access to the Niagara Escarpment and supports day-use activities. The property is a NEPOSS park classified as Escarpment Access because the modest visitor infrastructure and escarpment public access is intended for day use only.

Land uses adjacent to the Cheltenham Badlands include private residences, regenerating forest cover, active agriculture, and a former quarry. The Ontario Heritage Trust owns another parcel of land

nearby, to the southwest of the site across Creditview Road.



Forested area on the Cheltenham Badlands property

### 1.3 Study Purpose

Balancing the desired public use of the Cheltenham Badlands with the protection of its sensitive features is an increasing challenge. The uniqueness of the badlands feature and a growing public awareness of its existence has significantly increased visitation to the site in recent years. This resulted in safety concerns related to uncontrolled parking along Olde Base Line Road, accelerated erosion of the badlands feature from increased pedestrian traffic, the development of rogue trails throughout the site, and other management issues.

Since 2008 the Trust has collaborated with the CBMPT to identify and address public safety concerns, erosion, conservation, and stewardship issues on the property.

In 2015 the process was advanced with the initiation of a Master Plan study. The development of a master plan or management plan for all lands included in the NEPOSS is a requirement of the Niagara Escarpment Plan (2017).

The NEPOSS has a planning manual which provided the framework for the process and the suggested structure for this Master Plan. This Master Plan for the Cheltenham Badlands property was prepared in consultation with the CBMPT, Niagara Escarpment Commission, Ministry of Natural Resources and Forestry, Mississaugas of the New Credit First Nation, the University of Toronto, stakeholders, and the public. It defines a long term direction for the protection, management and use of the property's resources. This includes consideration of design

interventions and infrastructure needed to improve access to the site, upgrade the trails, enhance public safety and introduce new trail wayfinding and interpretive features in order to ensure a balance is struck between maintaining public access to this recreation destination in the Town of Caledon and protecting and conserving its sensitive natural and cultural heritage features.

A 33-space parking lot, walkway connection and accessible parking space illustrated below on **Figure 2 (page 4)**, were constructed on land owned by the Trust on the frontage of Olde Base Line Road by the Region of Peel in 2017. The assessment, design, consultation for and approval of these facilities were completed by the CBMPT and its partner agencies separately from the Master Plan. The facilities have been incorporated into the overall site concept plan for the Cheltenham Badlands property.

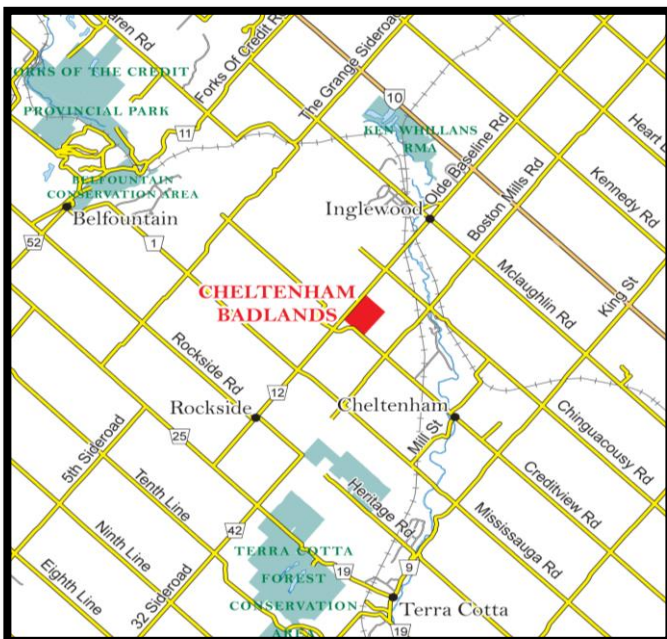


Figure 1: Site Location





**Figure 2: Cheltenham Badlands Parking Lot**



## 1.4 Master Plan Process

### 1.4.1 Stages and Approval

The Cheltenham Badlands Master Plan study aligns with the process and outcomes outlined in the 2017 Niagara Escarpment Plan and the NEPOSS Planning Manual (OMNR, 2012). This manual provides guidance to agencies on the design, development, implementation and maintenance of all NEPOSS sites.

The key stages of the Master Plan study process are outlined below and illustrated on **Figure 3**.

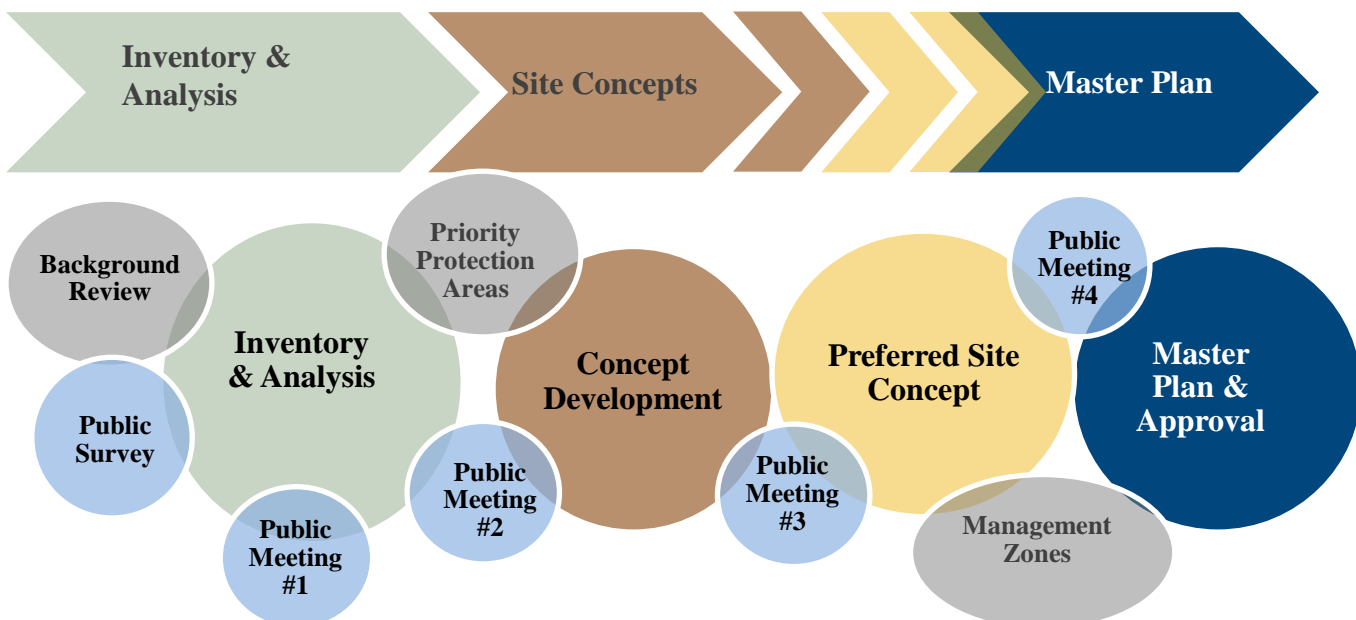
#### Stage One: Inventory and Analysis

Critical components of the environmental and site assessment for the Cheltenham Badlands were completed during the Inventory and Analysis stage.

Key steps in the Inventory and Analysis stage included:

- An online public survey and an initial public meeting;
- Summary of past technical studies, policy review, and guiding principles;
- Consultant team/agency site visits;
- Documentation of existing features related to: natural heritage, cultural heritage, recreation, views, and visitor management;
- Preparation of criteria for, and mapping of, Priority Protection Areas on the site;
- Identification of potential Management Zones, as used on NEPOSS sites;
- Identification of site development considerations and preliminary management directions; and
- A second public meeting to review the phase findings and initial directions.

**Figure 3: Study Process**



### Stage Two: Site Concept Development

The stage one analysis informed the identification of site development opportunities. These considered the technical evaluations from Stage One together with ideas obtained from public and stakeholder input, and were assembled into four preliminary site concepts. The site concepts were reviewed at several meetings involving the CBMPT, the public, local residents, local businesses, the Town of Caledon Accessibility Committee, the Region of Peel Accessibility Committee and the Mississaugas of the New Credit First Nation.

The preliminary site concepts are discussed in Section 12.0 of this plan, and plans provided in **Appendix C**. A summary of the public consultation activities is contained in **Appendix D**, with presentation materials and meeting summaries in **Appendix D**.

### Stage Three: Preferred Concept Plan

Innovative ideas were brought forward by the public and stakeholders in the discussion of the preliminary site concepts including: new trail connections and boardwalks, bridges and an accessible walkway connecting the parking lot on Olde Base Line Road to the proposed viewing area.

These ideas and comments were considered and additional site investigations and discussions with the CBMPT and other stakeholders were undertaken in 2016 and 2017. The final site concept plan reflects the findings of these investigations.

### Stage Four: Master Plan

The final stage of the study compiles the technical information erosion studies completed by the University of Toronto, public consultation process, opinions and conclusions of the study into a comprehensive document, consistent with the guidelines contained in the NEPOSS Planning Manual.

The Cheltenham Badlands Master Plan establishes the long-term vision and goals for the site's development, outlines a physical site concept plan and phasing, and sets out strategies and policies to guide decisions regarding management and operations.

This completed plan will be submitted to the Niagara Escarpment Commission and the Ontario Ministry of Natural Resources for final approval.

### 1.5 Approval Process

Collaboration with agency representatives on the Cheltenham Badlands Management Planning Team was undertaken throughout the study. Final approval of the Master Plan rests with the NEC and MNRF.

## 2.0 VISION, PRINCIPLES, GOALS AND OBJECTIVES

### 2.1 Vision Statement for the Cheltenham Badlands

The following vision statement has been developed for the Cheltenham Badlands property.

*A conserved Cheltenham Badlands with protected natural and cultural heritage features that also provides safe and accessible opportunities for visitors to experience the site and participate in its stewardship through education and interpretation.*

### 2.2 Guiding Principles

To direct long-range planning and management of issues at the Cheltenham Badlands, the Cheltenham Badlands Management Planning Team developed the following four guiding principles. The principles align with NEPOSS objectives and the Trust's mandate:

- 1 **Conservation of the property's cultural and natural heritage values.**
- 2 **Safety for all individuals who visit the site.**
- 3 **Improved accessibility for those who wish to access the site.**
- 4 **Enhanced opportunities for interpretation and public education.**

Accessibility includes the provision of physical facilities to address the requirements of the Accessibility for Ontarians with Disabilities Act (AODA). Site refers to the entire property and not the Badlands feature specifically.



View from Badlands



Bruce Trail

### 2.3 Goals and Objectives

The following overarching goals and objectives will direct development of the Cheltenham Badlands site.

The Cheltenham Badlands will be preserved for future generations by:

- protecting the natural and cultural heritage of the site;
- providing the public with safe and controlled access;
- improving accessibility and viewing through a system of boardwalks and trails;
- inspiring stewardship through interpretation and education.

An ongoing program of monitoring, assessment of impacts and adaptive management will be used to preserve the ecological integrity of the site and to maintain a high quality visitor experience.

### 2.4 Mandate of the Ontario Heritage Trust

The Ontario Heritage Trust has a broad, province-wide mandate to identify, protect, promote and conserve Ontario's heritage in all of its forms, including its natural heritage. In this capacity, it is empowered to conserve provincially significant cultural and natural heritage, to interpret Ontario's history, and to educate Ontarians of its importance in our society. The Ontario Heritage Trust is mandated to:

- Receive, acquire and hold property in trust for the people of Ontario;
- Support, encourage and facilitate the conservation, protection and preservation of the heritage of Ontario;
- Preserve, maintain, reconstruct, restore and manage property of historical, architectural, archaeological, recreational, esthetic, natural and scenic interest; and
- Conduct research and implement educational and communications programs necessary for heritage conservation, protection and preservation.

The Trust holds a portfolio of 165 natural properties, including the Cheltenham Badlands and 116 properties that host the Bruce Trail and are included in the Niagara Escarpment Parks and Open Space System.

### 2.5 NEPOSS Objectives and Park Classification

The Niagara Escarpment Parks and Open Space System (NEPOSS) is a series of parks and open spaces, which are connected by the Bruce Trail. These areas provide opportunities for recreation, tourism and play a vital role in protecting the cultural heritage resources and the Niagara Escarpment's natural heritage.

NEPOSS parks require mandated objectives be met. This Master Plan supports all nine objectives outlined in the 2017 Niagara Escarpment Plan shown here.

The Cheltenham Badlands site is classified within the NEPOSS as **Escarpment Access** (No. 92, Appendix 1, NEP, 2017). It is described as having “one of the best examples of badland topography in Ontario, making it a Provincially Significant Earth Science ANSI.”

The presence of 1.39 km of Bruce Trail within the property is also noted.

With respect to public uses, Escarpment Access sites are described in the NEP as follows.

*“These generally small areas will complement the larger, and in some cases, more developed parks or open spaces by providing opportunities for public access to the Niagara Escarpment. These areas may provide modest facilities to support day use activities at points of interest (e.g., trailheads, picnic sites, scenic areas, fishing areas, beaches).”(NEP 2017)*

### 2017 NEP NEPOSS Objectives (Sec. 3.1.1, Niagara Escarpment Plan)

1. To protect the *Niagara Escarpment's* natural heritage resources and *conserve its cultural heritage resources*;
2. To provide opportunities for outdoor education and recreation;
3. To provide for public access to the *Niagara Escarpment*;
4. To complete a public system of major parks and open spaces through land acquisition and Master/Management planning;
5. To secure a permanent route for the Bruce Trail;
6. To protect and enhance the *natural environment* of the *Niagara Escarpment*, including the protection of natural heritage and hydrologic features and functions;
7. To support tourism by providing opportunities on public land for discovery and enjoyment by Ontario's residents and visitors;
8. To provide a common understanding and appreciation of the *Niagara Escarpment*; and
9. To show leadership in supporting and promoting the principles of the *Niagara Escarpment's* UNESCO World Biosphere Reserve designation through sustainable park planning, ecological management, community involvement, environmental monitoring, research and education.



## 3.0 PLANNING CONTEXT

### 3.1 Federal Legislation

#### 3.1.1 Species at Risk Act

The federal Species at Risk (SARA) was enacted in 2002 with goals to protect endangered or threatened species in Canada, provide for the recovery of wildlife species that are scarce, endangered, or threatened as a result of human activity, and to manage species of special concern to prevent them from becoming endangered.

Schedule 1 of the Act contains the official list of wildlife species at risk. It classifies species as being, either extirpated in Canada, endangered, threatened, or of special concern. Once listed, the measures to protect and recover a listed wildlife species are implemented.

There are a number of species at risk that have been identified on the property. The Trust identified these species by working collaboratively with its partners to collect baseline data for the property prior to the Master Plan process. The Bruce Trail Conservancy's species lists (**Appendix A**) and list of provincially protected species at risk **Table 1 (page 20)** were provided by the baseline information collected for the property.

The property manager will undertake ongoing monitoring to identify and record flora and fauna presence on

the property. The recorded species occurrences will be compared to the wildlife species list in the Species at Risk Act to confirm presence for species at risk. Once confirmation is certain, management and monitoring plans may be developed for the particular species. Where feasible, recovery actions will be implemented on the property in a manner that is consistent with recovery strategies.

For a current list of known species at risk on the property, see **Table 1 (page 20)**.

### 3.2 Provincial Legislation

#### 3.2.1 Ontario Heritage Act

The Ontario Heritage Act (OHA) provides a framework for the protection of heritage resources in Ontario and empowers municipalities and the province to preserve and designate properties of cultural heritage value or interest. The Ontario Heritage Trust (the Trust) is an agency of the Ministry of Tourism, Culture and Sport, established under the Ontario Heritage Act and responsible for protecting, preserving and promoting the built, natural and cultural heritage of Ontario. The Trust holds title to the Cheltenham Badlands property.

### 3.2.2 Standards and Guidelines for the Conservation of Provincial Heritage Properties

Part III of the Ontario Heritage Act enables the preparation of standards and guidelines for conservation of provincial heritage properties. These standards and guidelines set out the criteria and process for identifying and evaluating provincial heritage properties and set the standard of care for their protection, maintenance, use and disposal. The Standards and Guidelines pertain to all properties owned by the ministry or a prescribed public body, including the Trust. While the Standards and Guidelines will not be triggered by the Master Plan, as a Trust-owned property, the Cheltenham Badlands could be Subject to these Standards and Guidelines in the future, should the property be leaving provincial ownership.

### 3.2.3 Niagara Escarpment Plan

In the Niagara Escarpment Plan (NEP) the Cheltenham Badlands property hosts both Escarpment Natural and Escarpment Protection Area land use designations. In accordance with the NEPOSS policies in the NEP, these land use designations are used as a guide in assigning NEPOSS zoning and determining the appropriate permitted uses within each zone.

The planning and development process for NEPOSS lands must

comply with Part 3 of the NEP which addresses development in the NEPOSS. Some development components for NEPOSS sites with an approved Master Plan may be exempt from requiring a NEC Development Permit if the following requirements of section 41 of Ontario 828/90 are met:

- i. The plan has been approved by the Niagara Escarpment Commission and Ministry of Natural Resources under Part 3 of the Niagara Escarpment Plan;
- ii. The plan has specifically identified and detailed the buildings, structures, facilities and related undertakings that are to be exempted under this section;
- iii. The construction and installation of buildings, structures and facilities and related undertakings occurs within 5 years of the approval of the Master Plan.

Development plans for NEPOSS sites must comply with the policies and objectives of the NEP, in particular:

- Part 3 which sets out the NEPOSS objectives (refer to 2.5 NEPOSS Objectives and Park Classification supplemented by the NEPOSS Planning Manual).

- Part 2 which addresses Development Criteria, specifically (2.2) General Development Criteria, (2.6) New Development Affecting Water Resources, (2.7) New Development Affecting Natural Heritage Areas.

Depending on the nature of the development, other policies may also apply.

### 3.2.4 Endangered Species Act

Ontario's current Endangered Species Act, 2007 (ESA) came into force in 2008. The purpose of the ESA is to:

- Identify species at risk based on the best available scientific information, including community knowledge and aboriginal traditional knowledge;
- Protect species that are at risk and their habitats, and to promote their recovery;
- Promote stewardship activities to assist in the protection and recovery of species at risk.

The ESA defines an 'at risk' species as any native plant or animal that is in danger of disappearing from the province. Before a species is afforded protection under the Act, it must be listed as a species at risk on the Species at Risk in Ontario (SARO) list.

The Cheltenham Badlands property has historical records of butternut trees that are considered Endangered under the provincial Endangered Species Act. These butternut trees may be impacted if deemed to be a risk to visitor safety due to their proximity to trails, boardwalks or visitor experience areas and if they are close to their senescence. These butternuts will be monitored regularly to ensure that the risk is understood. In the long term, removal may be necessary and the removal will conform to applicable laws, associated health assessments and permitting requirements (Ontario Regulation 242/08). Prior to removal, even dead Butternuts require MNR's prior approval of a Butternut Health Assessment conducted by a certified evaluator. Credit Valley Conservation has several such evaluators on staff.

Similarly, habitat exists for a number of other species at risk on the property, but no development is proposed in the Master Plan that would require permissions under the Endangered Species Act.

## 3.3 Municipal Policies

### 3.3.1 Region of Peel Official Plan

The Region of Peel Official Plan (ROP) identifies a Greenlands System containing a range of environmental features, including woodlands, valley and stream corridors, Environmentally Significant Areas (ESAs) and Areas of Natural

and Scientific Interest (ANSIs). There are three levels of protection in the Greenlands System: Core Areas; Natural Areas and Corridors; and, Potential Natural Areas and Corridors. The Cheltenham Badlands property lies within the Core Areas of the Greenlands System (Schedule A, ROP 2013). Core Areas are identified as having ideal conditions for uninterrupted natural systems and providing habitat for different kinds of wildlife, and are protected in the Plan. The Master Plan is consistent with the Region of Peel Official Plan in protecting the natural values of the property.

### 3.3.2 Town of Caledon Official Plan

The Cheltenham Badlands property is identified within the Town of Caledon Official Plan Land Use Plan (Schedule A) as an Environmental Policy Area (EPA).

The EPA comprises all Natural Core Areas and Natural Corridors which are characterized in the Official Plan as follows:

**Natural Core Areas:** woodlands, wetlands; NEC Natural Area; Life Science Areas of Natural and Scientific Interest; Environmentally Significant Areas; habitats of threatened and endangered species.

**Natural Corridors:** all core fishery resource areas; all valley and stream corridors.

This Master Plan is consistent with the Town of Caledon's Official Plan in protecting the area's core natural heritage features and pursuant to the Niagara Escarpment Planning and Development Act, the Niagara Escarpment Plan prevails over any local plan or zoning by-law where conflicts occur between the



Regenerating woodland areas on the Cheltenham Badlands property



## 4.0 NATURAL HERITAGE FEATURES

### 4.1 Regional Context

#### 4.1.1 Watershed

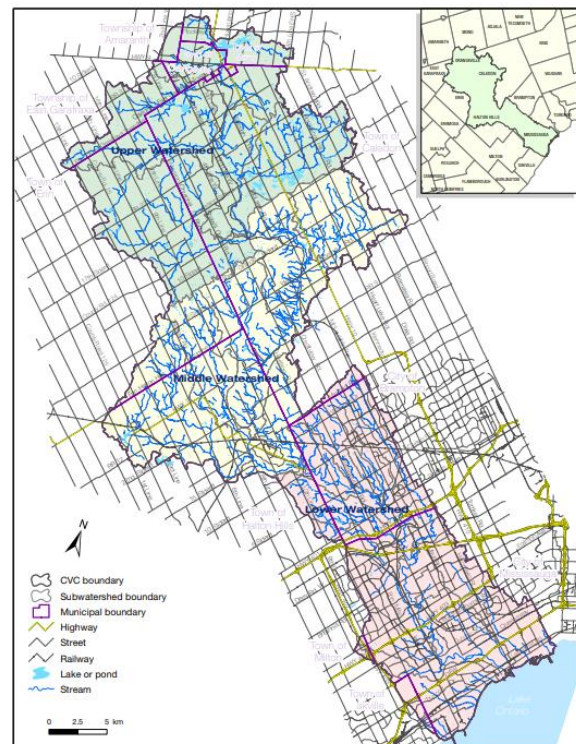
The Credit River watershed extends from Lake Ontario to Port Credit, approximately 60 km, with its headwaters north of the town of Orangeville. It covers an area of approximately 1000 square kilometres (CVC 2007). The watershed crosses nine municipalities, two counties, and two regions before draining into Lake Ontario. Nearly 1500 kilometres of streams and creeks empty into the Credit River along its route (CVC 2015).

Natural features in the Credit River watershed are diverse and include portions of the Niagara Escarpment (UNESCO World Biosphere Reserve), the western limit of the Oak Ridges Moraine, environmentally sensitive habitats, urban areas, forests and wetlands.

#### 4.1.2 Physiography and Natural Cover

The Credit River watershed is divided into eight major and two minor physiographic regions (Chapman and Putnam 1951). These physiographic regions are grouped by Credit Valley Conservation into three broad zones based on a combination of subwatershed boundaries and physiographic regions.

These zones are termed the Upper Watershed (above the Niagara Escarpment), the Middle Watershed (Niagara Escarpment and Oak Ridges Moraine areas), and the Lower Watershed (below the Escarpment).



**Map of the Credit River Watershed, created by the Credit Valley Conservation Authority**

The Upper Watershed is generally comprised of till plains, moraines and glacial spillways. The ground surface topography is undulating, and this region is generally well drained. Baseflow to rivers and streams is maintained predominantly from springs and groundwater discharge, and water quality is generally good.



The Niagara Escarpment is characterized by significant rock outcrops, steep slopes, and thin overburden conditions. The topography of the area leads to high runoff volumes and velocities. Forest cover in the area assists with infiltration and slows runoff.

The Escarpment and Upper Watershed areas have significantly more vegetative cover and greater infiltration than the Lower Watershed which is highly urbanized.

Land cover and land uses within the Middle Watershed where the Cheltenham Badlands site is located include (CVC 2014):

- Agricultural and Open Space (41%);
- Forest (20%);
- Urban (15%);
- Successional (9%);
- Wetland (8%);
- Cultural Forest (6%);
- Aquatic (1%).

### 4.1.3 Geology

Precambrian Canadian Shield rocks, such as granites and gneisses, lie deep below the ground surface of the Credit River Watershed. These rocks are overlain by thick sedimentary Paleozoic rocks such as dolostones, limestones and shales, which are in turn overlain by soils deposited since the last glacial period. The Wisconsinan glaciation is responsible

for all visible southern Ontario glacial landforms and deposits. It began about 25,000 years ago and ended 14,000 to 13,000 years ago.

The Niagara Escarpment is the most significant geological feature in the Credit River Watershed formed through erosion of the bedrock many millions of years ago. During more recent periods of glaciation the bedrock was eroded and scoured through repeated ice advances and retreats (Tovell, 1992).

The Queenston Formation, characterized by red shale, underlays a vast area extending from Western New York to the Bruce Peninsula. It was formed during the late Ordovician period (ending 444 million years ago) through deposits from an ancient sea. The Queenston Formation outcrops over a large area near the base of the Niagara Escarpment. The Cheltenham Badlands are an exposed area of the Queenston Formation.

### 4.1.4 Hydrological Systems (e.g., Streams, Wetlands, Ponds)

The Credit River Watershed, which contains 22 subwatersheds, drains into Lake Ontario primarily via the Credit River. The Credit River consists of three main branches:

- The Main Credit River, through Orangeville and Alton;
- The West Credit River, through Hillsburgh, Erin and Belfountain;

- The East Credit River at Inglewood.

Both the Main Branch and the West Credit River flow through deep valleys in the Niagara Escarpment, joining at the Forks of the Credit. From this point, the valley forms a wide alluvial plain and is joined by the East Credit River at Inglewood (CVC 2015).

The Credit River offers one of southern Ontario's most productive coldwater fisheries, including small native brook trout to the large migratory salmon from Lake Ontario. The lower warmwater sections of the river along with other lakes and ponds provide habitat for additional fish species.

### 4.1.5 Earth and Life Science Features

The Cheltenham Badlands site is located in the vicinity of the following earth and life science features (MNR correspondence, October 29, 2015):

- Provincially Significant Caledon Mountain Slope Forest ANSI;
- Regionally Significant Credit Valley Quarry ANSI;
- Regionally Significant Inglewood Forest ANSI.

## 4.2 Site Features

### 4.2.1 Topography

The majority of the property is flat to gently rolling with steeper slopes in association with two wooded ravines and the main badlands feature.

The main badlands feature, with its distinctive hummocky rills and gullies is located along the Olde Base Line Road frontage with a southward extension into the interior of the site.



The main badlands feature

There are several other areas of badlands topography throughout the property.

The Cheltenham Badlands property is designated a provincially significant Earth Science Area of Natural and Scientific Interest (ANSI) for the badlands topography.

### 4.2.2 Vegetation and Vegetation Communities

#### Inventories

Field investigations for the site were completed by the Bruce Trail Conservancy in 2000, 2011, and 2012. Studies completed at that time included: vegetation inventories, Ecological Land Classification (ELC); breeding bird surveys; and incidental wildlife observations. Credit Valley Conservation also undertook a natural heritage inventory in 2009. In September 2015 Dillon biologists completed a site visit to observe the conditions and to generally confirm information contained in the aforementioned inventories for the purposes of the Master Plan.

A total of 256 species of vascular plants have been recorded on the property (BTC 2012). Of the 256 species identified, one Prairie Sundrops (*Oenothera pilosella*) is a Species of Conservation Concern. It was observed by Bruce Trail Conservancy in 2012 during the vegetation inventories.

#### Ecological Land Classifications

Vegetation communities on the property were classified according to the Ecological Land Classification System for Southern Ontario (Lee et al., 2008). Field data was recorded on standardized data sheets to characterize the general biophysical conditions, disturbance history, and dominant species in the canopy, sub-canopy, understory, and ground

layers. A total of 11 distinct vegetation communities were recorded (BTC 2012). ELC mapping is contained in **Appendix A**.

#### Invasive Species

Non-native plant species, found within the property include Garlic Mustard, European Buckthorn, Phragmites, and Purple Loosestrife. These species displace native species, and for some of them, have the potential to become a monoculture.

Ash trees are located throughout the Badlands property, and evidence of Emerald Ash Borer (*Agilus planipennis*) infestation was noted during site investigations. Emerald Ash Borer is an invasive, non-native beetle from Asia, first discovered in North America in 2002 in the Detroit/Windsor area (Streit et al., 2012). The insect attacks and kills all native species of Ash trees by boring underneath the bark and feeding in the cambium. Eventually, feeding tunnels cut off the flow of water and nutrients, resulting in the death of the tree (Rese et al., 2006).

### 4.2.3 Wildlife

Through a review of secondary sources, agency consultation, and/or field surveys completed to date on the property, various animal species have been identified as occurring or potentially occurring within (or near) the property. These species are discussed below.

Provincially protected Species at Risk (i.e., species listed as threatened or endangered on the Species at Risk in Ontario list), are discussed in Section 4.2.4.

### Birds

Through a review of the Ontario Breeding Bird Atlas (Square 17NJ84) 100 bird species have been observed within the general area of the property (BTC 2012).

The Cheltenham Badlands Background Information document identifies that 57 species of birds have been observed incidentally on the property (BTC 2012).

A total of 13 species of birds were observed by Bruce Trail Conservancy in 2013 during subsequent breeding bird surveys (unpublished data).

Of the species observed on the property, four are considered at risk including:

- Wood Thrush (*Hylocichla mustelina*);
- Eastern Wood Pewee (*Contopus virens*).
- Chimney Swift (*Chaetura pelagica*);
- Henslow's Sparrow (*Ammodramus henslowii*).

### Herpetozoa

Through a review of secondary sources, approximately 23 herpetozoa species have the

potential to occur in the general area of the property (Oldham and Weller, 2000). Of the 23 species, six have been observed incidentally by Bruce Trail Conservancy staff or by the Dillon consulting firm's biologist. Of the six species observed none are Species at Risk. There is potential that the wetland along the western portion of the property may provide amphibian breeding habitat.

### Mammals

Through a review of the Mammals of the Western Hemisphere, 43 mammalian species have the potential to occur in the general area of the property (Patterson et al, 2007). Of the 43 species, eight have been observed incidentally by Bruce Trail Conservancy staff. None of the species observed are considered to be Species of Conservation Concern or Species at Risk.

#### 4.2.4 Provincially Protected Species at Risk

Through a review of secondary sources and consultation with the MNRF (email correspondence, October 29, 2016) provincially protected species at risk with occurrence records on or near the property were identified.

**Table 1** lists the occurrence records of species at risk, noting whether the species has been observed or if there is habitat potential for it on the property.

Butternut has been observed on the property in four locations. Four Species-at-Risk birds have also been observed flying over or near the property, including Bobolink, Eastern Meadowlark, Chimney Swift and Barn Swallow. Finally, based on forest conditions, potential habitat for three species at risk bats, including

Little Brown Myotis, Northern Myotis and Eastern Small-footed Myotis may exist within the forest communities on the properties.

Due to the sensitivity of species at risk, the locations of species observed within the property have not been mapped.

**Table 1: Occurrence Records of Provincially Protected Species at Risk**

Scientific Name	Common Name	SRank	SARA*	ESA*	Potential habitat on property	Observed on property
<b>Plants</b>						
<i>Juglans cinerea</i>	Butternut	S3	END	END	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Panax quinquefolius</i>	American Ginseng	S3	END	END	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>Birds</b>						
<i>Dolichonyx oryzivorus</i>	Bobolink	S4B	---	THR	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Sturnella magna</i>	Eastern Meadowlark	S4B	---	THR	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Chaetura pelagica</i>	Chimney Swift	S4B, S4N	THR	THR	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Hirundo rustica</i>	Barn Swallow	S4B	---	THR	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Mammals</b>						
<i>Myotis lucifugus</i>	Little Brown Myotis	S4	END	END	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<i>Myotis septentrionalis</i>	Northern Myotis	S3	END	END	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<i>Myotis leibii</i>	Eastern Small-footed Myotis	S2S3	---	END	<input checked="" type="checkbox"/>	<input type="checkbox"/>

\*"END" stands for "Endangered"; "THR" Stand for "Threatened"



### 4.2.5 Wetlands, Watercourses and Fish Habitat

Through a review of secondary sources, and a site walk completed in September 2015, it was identified that a number of watercourses (both mapped and unmapped) are located within the property. These watercourses are tributaries to the Credit River. Many of the watercourses on the property are likely ephemeral or intermittent. The mapped watercourse located within the western portion of the property is likely permanent. Several in-stream barriers were noted during a site walk.

As described in Credit Valley Conservation's Approved Assessment Report: Credit Valley Source Protection Area (2012), Credit Valley Conservation has classified fish communities in the Credit River Watershed through a combination of monitoring, fish collection records, and background information pertaining to geology and climate. Based on Credit Valley Conservation's assessment, the watercourses within the property may provide and/or contribute to a warmwater fish community until they converge with the Credit River, which is a mixed community in this reach.

Through ELC studies completed by Bruce Trail Conservancy, two wetland units are located within the property. The first is a mixed

meadow marsh associated with a seasonal watercourse on the eastern portion of the property.

The second wetland unit, consisting of a cattail meadow marsh and a mixed forb meadow marsh associated with watercourses, is located on the western portion of the property, west of the badlands (see ELC map in **Appendix A**).



Wetland on the west side of the property

### 4.2.6 Soils

According to provincial soil mapping, the soil types covering the Badlands property are Oneida Clay Loam, Bottomland and Lockport Clay. The majority of the property is covered by

Lockport Clay which formed over the red shale of the underlying Queenston formation. This soil group is shallow in nature, has good drainage properties and is prone to severe erosion if the vegetative layer is removed. The low lying areas associated with the creeks and wetlands are classified as Bottomland where the drainage varies but is usually poor. A small portion of the southern corner is classified as Oneida Clay Loam which is a grey – brown coloured soil with good drainage but is susceptible to erosion (Hoffman and Richards, 1953).

### 4.2.7 The Badlands Feature

Geological studies undertaken of the Cheltenham Badlands (Tato, 1974; Desloges and Smith, 1994;



Distinctive bands of green iron oxide

Desloges, Philips, Chow, and Lam, 2009) identify that the badlands feature results from erosion and weathering of the exposed clay of the underlying Queenston shale formation.

Although the badlands were likely formed 400 million years ago, its exposure is a result of removal of forest cover, grazing and other farming practices in the 19<sup>th</sup> century combined with shallow soil cover led to erosion and the subsequent exposure of the underlying shale. Decades of weathering through rain and snowmelt have advanced the erosion and resulted in the progressive formation of the characteristic rills and gullies (Desloges et al, 2009).

When exposed to the atmosphere, the clays form loosely bound clay aggregates which oxidize rapidly when exposed. Periodic groundwater percolation has led to the distinctive green-gray bands which result from the red iron oxide changing to green iron oxide.

## 5.0 CULTURAL HERITAGE

### 5.1 Land Stewardship

The Cheltenham Badlands property is located in the traditional territory and treaty lands of the Mississaugas of the New Credit First Nation.

For thousands of years, Indigenous peoples lived in this region with increasingly complex societies and technologies in an enduring balance between the environment and the human presence. They hunted, fished and foraged, and some established complex agricultural communities.

Ancestors of the Mississaugas of the Credit arrived around 1700. They set up small temporary villages on the river flats and practised horticulture, seasonally migrating and living lightly on the land. Their way of life had respect for, and connection to, the land over many generations.

The Stage 1 Archaeological Assessment commissioned by the Ontario Heritage Trust in 2011 provides a detailed chain of later European occupancy for the site.

The earliest written record of ownership of the property under the European land grant system dates to 1848 when the first patent was granted by the Crown for Lot 34, Concession III to Joseph Wilkinson. It is not known if Wilkinson attempted

to farm the property, however the 1851 personal census does identify Wilkinson and his family living in a frame house on an unidentified lot.

The chain of title for the property indicates that in 1854 Joseph Wilkinson sold Lot 34 to John Adams. Adams later appears in the 1861 Agricultural Census with 74 acres cleared (29.5 hectares), and 64 of those acres (25.9 hectares) under crops including fall and spring wheat, oats, potatoes and peas. The census also reported that he and his family lived in a frame house. It is speculated that this is the house shown on the 1858 Tremaine map (Janusas, 2011).

In 1873, John Adams sold Lot 34 to his son Andrew who sold it a year later to George Wilson. Wilson had for some years been farming across the road on Lot 34, Concession IV. (Refer to **Figure 4** on **page 24**: Excerpt from 1877 Historical Atlas of Peel Map).

The 1877 Historical Atlas of Peel map also shows a dwelling and orchard centrally located on the property to the east of the creek tributary. The 1942 topographic map contained in the Archaeological Assessment shows a later dwelling or outbuilding which appears to be further east on the site, and which is speculated to be the source of the

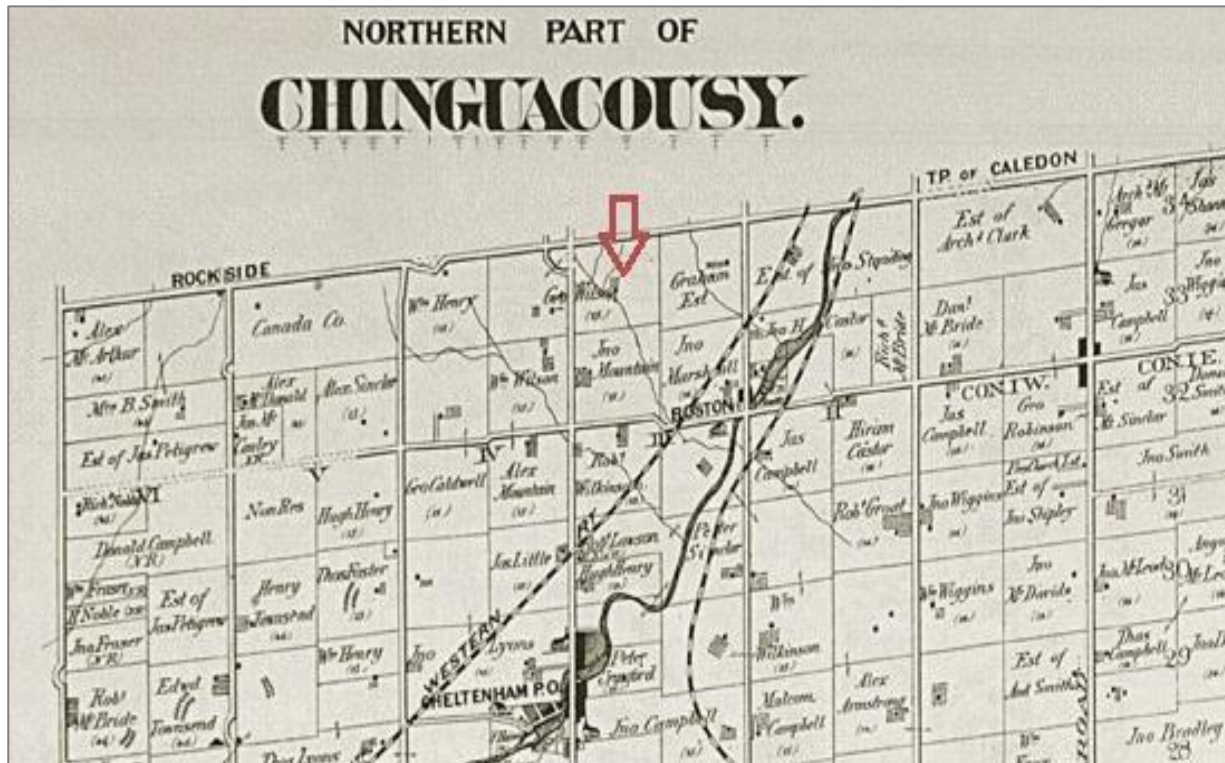


Figure 4: Excerpt from 1877 Peel County Atlas map showing location of Lot 34, Concession III, W.H.S (Cheltenham Badlands property). (W.H.S. is West of Hurontario Street)

stone foundation that is still on the property (Janusas, 2011).

George Wilson transferred ownership to his son, George Frederick Wilson in 1898. The property changed hands several more times over the next few years, with William Martin acquiring it under power of sale in 1901.

The property transferred to William's son John in 1915 and sold a year later to the McCannells who lived on the property and raised cattle until selling it in 1929 to James Edward Cooper. Following Cooper's death in 1932, his widow Edith and her family continued to farm the property for

several more years, eventually ceasing farm operations and allowing the site to naturally regenerate.

Mrs. Cooper deeded the property to her son Russell King Cooper, a renowned photographer, journalist and later editor of the Toronto Telegram newspaper. Russell King Cooper retained ownership of the property until 1999 when he sold the property to the Ontario Heritage Trust.

## 5.2 Past Site Uses

The Cheltenham Badlands property is located in the traditional territory of the Mississaugas of the New Credit First Nation. They hunted and lived in



the area that includes this property for thousands of years prior to European contact. The area historically provided good habitat and hunting grounds for large mammals such as moose, elk, and bears and large herds of caribou.

From the listing of occupations in the earliest available census in the mid-19<sup>th</sup> century, uses on the Cheltenham Badlands property were primarily agriculture. Cash crops were noted as the property's primary yield in the 1861 agricultural census with 74 acres of the 100 acre parcel cleared (29.5 hectares). Of those, 64 acres (25.9 hectares) are noted as under crops which included fall and spring wheat, oats, potatoes and peas. The town of Cheltenham was an important mill site throughout the 19th century and handled large volumes of custom business in gristing. At its peak, the gristmill produced 10,000 barrels of flour per

year. The 1877 Atlas Map shows an orchard in the central area of the property in association with a dwelling.

Historical research indicates that by the early 1900s the primary type of farming on the property was cattle pasturing. A section of hardwood forest retained in the west corner as a woodlot still remains today. A 2001 Stewardship Plan prepared for the property indicates the presence of several mature sugar maple and beech in this area, potentially as old as 100 years (Baker, 2001). The existing pine plantation in the southwest area of the site is believed to have been established in the 1930s by the Coopers.

It is not known exactly when the badlands terrain began to emerge, however active agricultural practices appear to have ceased in the 1930s. An aerial photo from 1946 shows a

1946 Aerial photo showing a mostly cleared site and the badlands feature (Source: National Air Photo Library)



predominantly cleared site with clusters of mature vegetation, and the badlands looking much as it does today. Areas of the site have naturally regenerated since that time, although areas of badlands topography have remained largely un-vegetated.

In 1999 the first Bruce Trail route was established through the property extending from Creditview Road to Olde Base Line Road. The main trail route has since been altered due to withdrawal of permission to access the private property across the road. Refer to Section 10.5.4: Trail System.

### **5.3 Archaeological Resources**

The Stage I Archaeological Assessment prepared for the property indicates that there are no previously identified archaeological sites on site. There is some archaeological potential on the site based on the presence of wetlands and streams, elevated and level topography, the former presence of two early roadways, and the presence of an historic foundation and stone walls.

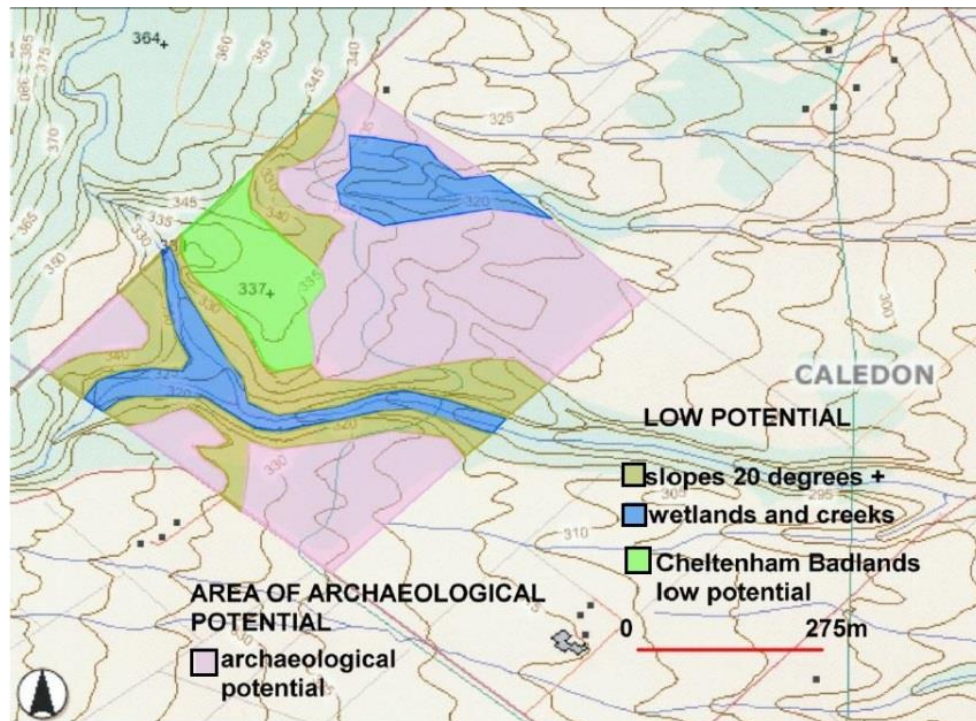
The wetland areas, areas of steep slope (in excess of 20 degrees) are considered to have low archaeological potential.

There is no archaeological potential on the exposed shale slopes of the badlands due to topsoil weathering and erosion.

The Stage I Archaeological Assessment contains a map delineating areas with archaeological potential which cannot be made public in accordance with provincial legislation.

The recommended actions in the Stage I archaeological assessment report include:

- If any areas of archaeological potential may be impacted by proposed development or become endangered due to natural hazards such as extreme erosion, a Stage 2 archaeological assessment must be conducted.
- Areas of low archaeological potential are considered free of further archaeological concerns, and no further archaeological assessment is required in those areas.
- The foundation in the centre of the property will have to be assessed should any development of the area be considered in the future.



**Figure 5:** Map showing archaeological potential of Cheltenham Badlands property (From Stage 1 Archaeological Assessment of the Cooper Property, West Part of Lot 34, Concession 3, WHS, Town of Caledon, Regional Municipality of Peel, Completed by Scarlett Janusas, Archaeological and Heritage Consulting and Education)

## 5.4 Cultural Heritage Resources

There are remnants of a stone foundation and wall located approximately in the centre of the property. The exact age of the foundation and wall has not been determined.

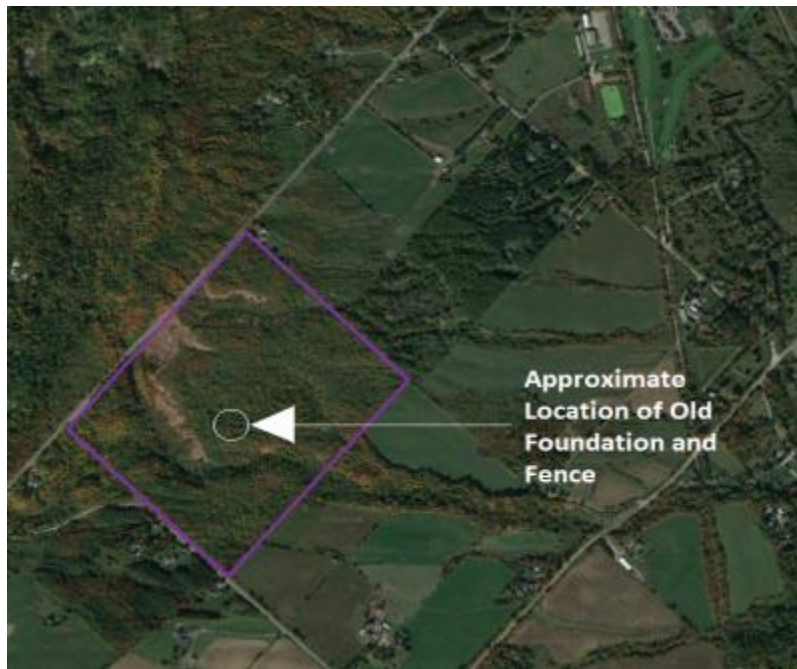
From early Bruce Trail mapping it appears this area was formerly accessible by a section of the trail, now closed off, which followed a former laneway, and is currently

within an area of regenerating woodland.



Remnants of stone foundation





**Figure 6:** Map showing approximate location of the stone foundation on the Cheltenham Badlands property

(Adapted from Stage 1 Archaeological Assessment of the Cooper Property, West Part of Lot 34, Concession 3, WHS, Town of Caledon, Regional Municipality of Peel, Completed by Scarlett Janusas, Archaeological and Heritage Consulting and Education)



## 6.0 RECREATION USES

### 6.1 Regional Context

#### 6.1.1 Bruce Trail

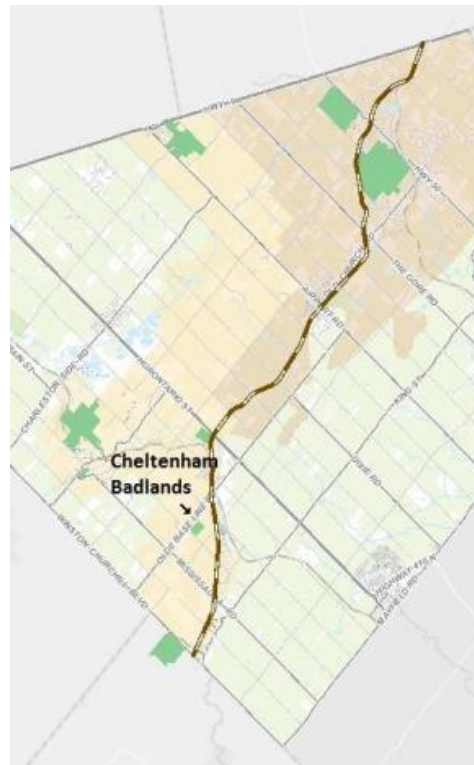
Extending along the Niagara Escarpment from Niagara to Tobermory, the Bruce Trail is a footpath that comprises almost 900 kilometres of Main Trail and over 400 kilometres of associated side trails. The Bruce Trail is overseen and managed by the Bruce Trail Conservancy and its volunteer-run Clubs that are responsible for maintaining, stewarding and promoting regional sections of the Bruce Trail.

The Cheltenham Badlands property contains a section of the main Bruce Trail along with a side trail and is located at the start of the Caledon Hills Bruce Trail Club section, which extends from Cheltenham north to Mono Centre, approximately 55 kilometres.

Beyond the Cheltenham Badlands property the main Bruce Trail extends eastward along the shoulder of Olde Base Line Road then northward on Chinguacousy Road. South of the site the trail is also a road-based route at this time. The trail will be moved off roads if and when landowner permission is received to do so.

#### 6.1.2 The Caledon Trailway

The Caledon Trailway is a multi-use 35 kilometre packed gravel trail running between Terra Cotta and Palgrave. The trail follows the path of a former rail line connecting Hamilton with Barrie. It crosses Olde Base Line Road near the Cheltenham Badlands just east of Chinguacousy Road. This trail was the first officially designated section of the Trans Canada Trail, now called The Great Trail.



**Map of the Caledon Trailway, from the Town of Caledon's Trail Guide**

### 6.1.3 Provincial Parks, Conservation Areas, Resource Management Areas

Belfountain Conservation Area is located approximately 9 kilometres to the north of the Cheltenham Badlands site, or 10 minutes by car. Forks of the Credit Provincial Park is approximately 18 kilometres away. These popular nature areas are frequently visited during the summer months and through fall colour season when visitation at the Cheltenham Badlands is also very high.

Credit Valley Conservation's Lands Monitoring Program (2018) estimates the annual visitation for the Belfountain Conservation Area at 44,200 persons, and Terra Cotta Conservation Area at 27,700 based on paid, registered visitors, with more than 39,111 visitors at the Forks of the Credit Provincial Park (Ontario Provincial Park Statistics, 2017). The sites offer visitor amenities including trails, washrooms, and picnic facilities.

Ken Whillans Resource Management Area is located near Caledon Village approximately 6 kilometres, or 5-6 minutes away by car, from the Cheltenham Badlands. The property can also be reached on foot or by bicycle via the Caledon Trailway, although approximately 1.5 kilometres of the distance is on Olde Base Line Road.

### 6.2 Site Access and Parking

The Cheltenham Badlands is located approximately 3.5 kilometres west of Highway 10 (Hurontario Street) which serves as a major arterial road through the Region of Peel. The surrounding roads are generally low volume rural roads with 80 kilometre speed limits.

However, due to the number of visitors to the Badlands site and concerns over safety, speed limits have been reduced in the vicinity to 50 kilometres, with a 40 kilometre speed limit along Olde Base Line Road between Creditview Road and Chinguacousy Road.

Caledon is a well-known destination for cyclists. The varied and challenging road routes and scenic landscapes in the vicinity of the Badlands property make it a popular area for tour cycling. Cycling is not permitted on the trails on the Cheltenham Badlands site.

The closest public transit route is the Orangeville/ Brampton GO bus line that runs along Hurontario Street with stops at Caledon Station (13 kilometres north) or Victoria Station (8 kilometres south).

Parking and stopping is prohibited along the shoulders of Olde Base Line Road and much of Creditview Road and Chinguacousy Road in the vicinity of the site as per the Town of Caledon Traffic Bylaw section 9. A new 33 car, 2 bus parking lot (bus

size of 12.5m or less), pedestrian walkway and accessible parking space were constructed along Olde Base Line Road in 2017.

### 6.3 Site Visitation and Uses

An online Public Feedback Survey was launched in September 2015. The Public Feedback Survey included a series of questions to determine the extent and frequency of visitation to the Badlands property, prior to its temporary closure in 2015.

There were 590 respondents to the survey. The survey results indicate that most visits to the site are made between May and October. The majority of respondents (66 %) stayed 60 minutes or less. Approximately 15% stayed less than 15 minutes, with only 3% of respondents staying 2 hours or more. The majority of respondents (over 80%) arrived by car, and were accompanied by family or friends (91%).

Prior to the closure of the Badlands most respondents (58%) had visited one to three times per year, however a significant number of respondents (25%) indicated that they did not typically visit the site, these included participants with both distant and local postal codes. Some local residents noted during public consultation that they do not visit the site but appreciate the beauty of the badlands feature while passing by.

The survey also queried respondents on typical uses of the property. Not surprisingly, viewing and appreciation of the badlands feature was the most frequently mentioned activity (82%), followed by photography or videography (51%) and hiking on the Bruce Trail (45%). Other mentioned activities include: wildlife observation, sketching and painting, stargazing, picnicking, educational activities or research (e.g., by schools or universities). In the past, the site was also used annually by a local church for a sunrise mass.

When visiting the Cheltenham Badlands many people also engage in off-site activities. The most mentioned activities were visiting local restaurants and food vendors (35%), other conservation or nature areas (34%), and local shops (28%). Approximately 16% of respondents visited friends and family while 26% visited only the Cheltenham Badlands.

The Cheltenham Badlands property is not serviced by municipal water or sewers. There are currently no washrooms or portable toilets which limits time spent on the site and opportunities for picnicking. There is also currently no electrical source on the property.

### 6.4 Existing Trails

The Bruce Trail crosses the Cheltenham Badlands between Creditview Road and Olde Base Line Road. It has been on the property since 1989 by permission from the previous landowner. Acquisition of the land in 2002 by the Ontario Heritage Trust secured a permanent off-road trail corridor.

A side trail branches off the main Bruce Trail terminating at Olde Base Line Road. It was once the original Bruce Trail route, rerouted through the property following withdrawal of landowner permission for the trail north of Olde Base Line Road. The

Bruce Trail will re-instate the side trail as the main Bruce Trail connection, should landowner permission be received.

Both the main Bruce Trail and the side trail are generally well maintained with stable surface, well-marked edges, wooden footbridges or culverts over streams, and signage. The entrances to the Main Bruce Trail are marked at Olde Base Line Road and Creditview Road and the trail is marked along its length.

There are many informal footpaths on the site, some of which have been closed and are now natural regeneration areas.



Main Bruce Trail



## 7.0 SCENIC RESOURCES

### 7.1 Scenic Values

In recent years numerous publications and web sites have identified the Cheltenham Badlands as a unique and scenic spot. This publicity and anecdotal spread of information has contributed to the site's popularity and to frequent visitation.

The Niagara Escarpment Commission prepared a Landscape Evaluation Study (NEC, 1976). The scenic ranking system used in the Landscape Evaluation Study includes six categories: Outstanding, Very Attractive, Attractive, Average, Low and Very Low.

Within this ranking the Cheltenham Badlands property is contained within a larger geographic area identified as Very Attractive.

Relative to other scenic sites on the Escarpment the landscape character within the Cheltenham Badlands property varies. The most scenic area is found in association with the badlands feature itself with lower scenic qualities associated with the forested areas. An assessment of scenic values would likely be dependent on the time of year, and the viewer's opinion of: the quality of vegetation cover; the amount of degradation to natural areas; and the number of visitors present on the site at the time of the assessment.



Long range view of the Escarpment from the east side of the Badlands

### 7.2 Views

Although a Visual Assessment Study is not a specific requirement of the Master Plan process, a preliminary analysis was conducted (using ESRI ArcMAP 10.3) to determine if the badlands features would be visible from outside the site. Using a distance of 5 kilometres the exercise concluded that there are no long-range views of the site from distant locations along the Bruce Trail or the Niagara Escarpment due to the topography and dense vegetation.

The most prominent external view of the badlands is from Olde Base Line Road directly adjacent to the main badlands. Reportedly, there is also a scenic view from the height of land across the road on private property.

The 13 metre elevation change at the badlands is substantial which creates dramatic views from within the site. The most photographed is the long view over the main badlands to the Escarpment beyond from the east side of the feature (see photo on preceding page). There are also long views south toward the Peel Plain and Toronto skyline from the southern edge of the main badlands.

Views over the property from the upper ridge of the badlands that extends south from the main area are also quite scenic. There is no formal trail to this area although there is a well-worn footpath. Another

popular, sought-out vantage point is located on the western edge of the main badlands with views up into the feature from the bottom of the slope. This location can only be accessed by traversing the badlands or approaching from the south on unauthorized trails.

While this analysis means that any ground-related development on the site will not be seen from great distances, it also suggests new facilities will need to be carefully placed to avoid visual impacts from locations within the site. As well, not all existing views will necessarily be accessible to visitors since access will be confined to developed trails.

The final site concept has considered the visual impact of viewing platforms and boardwalks. Visual obstruction has been minimized to the extent possible. This is particularly true for the wetland-to-plateau trail. A map of key views in relation to the existing trails and footpaths on the site is provided in **Appendix A**.



View of the main badlands from the bottom of the slope



View of secondary badlands

## 8.0 MANAGEMENT CONSIDERATIONS

The goal of the Cheltenham Badlands Master Plan is to protect and enhance the site's unique cultural and natural resources while providing opportunities for the public to appreciate its outstanding scenic beauty and participate in passive recreational activities. In doing so, it:

- Aligns with the vision, guiding principles, goals and objectives established for the site;
- Aligns with Trust's mandate to preserve, maintain and manage property of historical, architectural, archaeological, recreational, esthetic, natural and scenic interest;
- Aligns with the Niagara Escarpment Parks and Open Space System policies;
- Responds to stakeholder and public concerns, and input.

### 8.1 Impacts and Pressures on the Cheltenham Badlands Site

#### 8.1.1 Erosion of the Badlands

Studies undertaken of the badlands topography indicate that they are a result of erosion of the soil cover and the resultant exposure and extensive weathering of the underlying shale formation.

Testing and monitoring was undertaken on the Cheltenham Badlands site in 2009, 2012, 2014, and 2017 by the University of Toronto. The results showed that there is continued erosion of the rills and collection of material in the gully bottoms of the badlands. It is noted in the studies that the erosion is taking place at a rapid rate and increased as a result of human foot traffic on the badlands as well as natural processes. Foot traffic has not been permitted on the feature since 2015.



Rills and gullies of the badlands



Additional monitoring studies are planned as they are important to refine estimates of erosion rates, to assess long-term changes to the badlands feature, and to continue to inform management strategies for public access to the site.

### 8.1.2 Invasive Species

As discussed in Section 10.2, non-native, invasive plant species including Garlic Mustard, European Buckthorn, Phragmites, and Purple Loosestrife, are present within the property. If left unchecked invasive plant species can create monocultures that will threaten native vegetation cover.

In the native regenerating thicket that dominates most of the property, the sub-canopy and/ or understory contains a high proportion of European Buckthorn. In these areas a restoration plan may be required to maintain the integrity of the regenerating woodland.

Emerald Ash Borer has infested Ash trees throughout the property, particularly in the south. Once infected, Ash trees typically die within six years leaving large gaps which are quickly replaced, often by invasive species. Dead trees

adjacent to trails will become hazards over time. The steward of the property will monitor the trails regularly to ensure they are safely maintained.

### 8.1.3 Visitor Impacts

#### Traffic and Pedestrian Safety

With increasing visitation to the site over the past decade, local residents and visitors to the site frequently experienced unsafe driving, cycling and walking conditions stemming from traffic congestion and parking along Olde Baseline Road.

In response to these safety concerns the Region of Peel and the Town of Caledon, in collaboration with the Trust and the other members of the CBMPT developed a series of high-priority projects designed to calm traffic and reduce congestion. These initiatives are further described in Section 10.5.2 Visitor Management and Section 8.2 Site Management Activities to Date.

#### Rogue Trails

Over the years unauthorized or 'rogue' footpaths have been established between the Bruce Trail and the badlands feature. A number of these have been closed and are regenerating.





Rogue trail along the ridge of the Badlands

There are prominent footpaths that extend around the perimeter of the main badlands feature from the main viewing area at Olde Base Line Road, along the plateau ridge that overlooks the southerly extension of the badlands, and across the wetland. These trails are well-worn and represent strong desire lines to popular areas of the site. With some re-routing and improvements to widths and surfacing several of these footpaths have been incorporated into the final site concept.

Other unauthorized activities on the Cheltenham Badlands site include mountain biking, motorized recreation vehicle use, 'field parties'

and camping. For a list of permitted uses and visitor management strategies see Section 10.4.

### 8.2 Site Management Activities to Date

Safety issues related to roadside parking and congestion on Olde Base Line Road have been a concern at the site for some years. From 2012 to 2014, the Region of Peel implemented speed bumps, roadway markings, speed limit signs, and parking prohibitions on Olde Base Line Road in the vicinity of the Badlands.

In 2015 the Town of Caledon established no parking prohibitions on both sides of Creditview Road for a distance of approximately 500 metres north and south of Olde Base Line Road. Some shoulder parking remains adjacent to the entrance to the Bruce Trail. In 2015 access to the Cheltenham Badlands feature was restricted and exclusion fencing was installed by the Trust.

In 2017, following a separate planning and approval process, the Region of Peel constructed a parking lot with space for 33 cars and 2 school buses on land owned by the Trust on the Olde Base Line Road frontage of the site. An accessible parking space at the main badlands feature and a connecting walkway extending along Olde Base Line Road to the parking lot were also constructed at the same time.

In 2017, an accessible boardwalk viewing area was built as part of the high priority visitor projects to support the site's re-opening. The site re-opened in the fall of 2018.

### 8.3 Heritage Conservation Approach

The management activities associated with natural and cultural heritage conservation is contemplated in this section. Given the various challenges associated with protecting and managing the site, it will be vital to ensure that the natural areas and limited cultural features will be protected as the site develops for visitors. Physically, on the landscape this will mean protective fencing will be erected along boardwalks and in certain sensitive areas. The final concept map outlines the protective fencing.

#### Natural Heritage Conservation

To address the management concerns outlined in Section 8.0, the Trust and its third party property manager will continue to develop and implement detailed management strategies for the property. These strategies will include specific plans related to invasive species control and monitoring species at risk as is deemed necessary and appropriate based on ongoing visitor and property monitoring. These collaborative plans will ensure that the natural heritage features and

systems at the Cheltenham Badlands are protected and enhanced to the greatest extent possible, using the most up-to-date knowledge and practices. Consistent with the Trust's mandate to educate and inform, interpretive and educational opportunities to raise awareness about natural heritage conservation will also be part of the management strategies.



Air photo showing the location of the parking lot, walkway and accessible parking space in relation to the badlands

#### Cultural Heritage Conservation

Archival and anecdotal records and information have revealed that the Badlands has a history of Indigenous traditional territory, European settler farming and one cultural landscape—a planted orchard. Physical evidence of these stories on the landscape are scarce and minimal, but present interpretation opportunities to develop and create educational materials around this research. (There are stone ruins and a fence in

the middle of the property. **Figure 6 (page 28)** shows the location of the ruins on the property map).

Research has been gathered and a broad interpretive plan has been developed. Some of that material was integrated into a series of interpretive panels currently affixed to the boardwalk near the main feature. It provides a broad overview of the cultural heritage of the site. Phase 2 of this Master Plan contemplates a trail, Trail type 2, (see **Figure 7 on page 48**) that will connect the main viewing platform and the cultural farming ruins found approximately in the middle of the property.

A more comprehensive cultural heritage resource management plan to better track, assess and protect areas of cultural, historical and archaeological significance should also be developed. The plan should be finalized when Trail type 2 will be built so that visitors using the trail to view the cultural feature at the end of the trail will be better informed about the historical use of the site.

Section 10.0 elaborates on the need for, and some requirements of, these plans and other management strategies, together with emerging operational policies. These will be further developed and finalized in discussion with the site's partners as the operational plan is developed simultaneously to the Master Plan

and will be finalized once the Master Plan is approved.

### 8.4 Adaptive Management

Adaptive management was recommended as the best approach to utilize on the Badlands property by initial natural heritage inventory reports and summaries such as the Cheltenham Badlands Master Plan: Inventory and Analysis Summary Report. The concept of adaptive management was developed in recognition of the constantly evolving conditions of natural resources and the demands placed on them. Adaptive management is a process that allows the development of a plan when some degree of biological and socioeconomic uncertainty exists. It requires a continual learning process based on monitoring activities, a reiterative evaluation of goals and approaches, and redirection of management activities based on an increasing information base and changing public expectations (Baskerville 1985 as referenced in National Park Service 2007). It provides site managers with the flexibility to identify and implement new measures or to modify existing ones in order to continuously improve environmental management practices on a property or project (Canadian Environmental Assessment Agency, 2009).

The principles of adaptive management are widely recognized and applied by environmental stewardship and management organizations in Ontario, such as in

the Toronto Region Conservation Area's planning for the Scarborough Waterfront Project (Toronto Region Conservation Area, 2017). It is considered to be best practice for environmental stewardship and management and approaches to adaptive management continue to evolve as it is applied in the field.

An adaptive management approach will be used to assess threats and impacts to the resources on the Cheltenham Badlands site and to evaluate the need for change and the alignment of that change with goals. The Trust will work together with the CBMPT as necessary as part of an adaptive management approach.

Potential indicators of site impacts that may be monitored for could include a number of studies based on ongoing monitoring and an assessment of what studies are necessary and appropriate for the property. They may include:

### Physical Impacts

- Changes to soil structure, drainage, chemistry,
- Areas of barren core and of bare ground;
- Evidence of litter, campsites or fire rings;
- Increase in number of social (rogue) trails;
- Visible erosion of the badlands as evidenced by the

entrainment, transport and deposition of sediment in the ridge and gully system.

### Biological Impacts

- Changes to soil fauna and micro-fauna;
- Decrease in vegetative density and loss of ground cover;
- Decrease in diversity and composition of plant species;
- Increase in proportion of exotic plant species;
- Diminished vigour, health and reproduction of vegetation, and presence of diseases;
- Damage to trees, e.g., mutilation, exposed roots;
- Diminished diversity, abundance, sightings of wildlife species;
- Presence or absence of indicator species.

### Social Impacts

- Visitor perception of crowding and conflicts, e.g. between individuals and groups;
- Visitor perception of impacts to the environment;
- Diminished visitor satisfaction, increased visitor complaints;
- Visitor reports of undesirable behaviour.



## 9.0 PRIORITY PROTECTION AREAS

### 9.1 Priority Protection Areas Evaluation Criteria and Ranking

The identification of and boundaries for areas that are priorities for protection were determined through the inventory and analysis process. The Priority Protection Areas were developed by means of prioritizing and ranking all the natural and cultural heritage features against a set of criteria which considers provincial legislation, ecological functions and best practices in integrated natural heritage system protection and planning.

#### Priority Level 1

Priority Level 1 provides for the long-term protection of natural features that are deemed to be particularly sensitive. The Badlands are a sensitive and unique geological feature and the underpinning for the site's designation as an Earth Science Area of Natural and Scientific Interest (ANSI). Due to the documented sensitivity of the exposed shale of the badlands topography to human impacts a Priority 1 Protection Level was given these areas of the site.

#### Priority Level 2

Priority Level 2 protects natural areas with high-quality attributes that contribute essential habitat or add essential components to the natural heritage systems. Elements on the

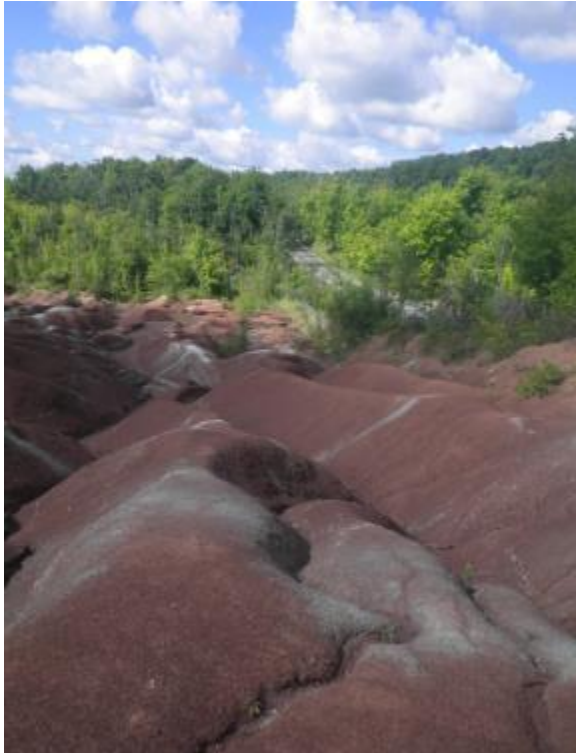
site which fall into this category are the wetland and known (mapped) watercourses with a 15 metre buffer, and the mature woodlands which are known habitat for species at risk.

In Ontario, species at risk listed as Threatened and Endangered on the Species at Risk in Ontario (SARO) List, and the habitat of Threatened and Endangered species, are protected by the provincial Endangered Species Act (2007). Due to the sensitivity of this information, the specific locations of species at risk are not shown.

#### Priority Level 3

Priority Level 3 has a similar purpose to the above Priority Levels but with a focus on protecting features that are typically more resilient. Examples of elements on the site that fall under this category include areas of critical function to support provincially rare species, and species at risk.

Refer to **Table B-1 in Appendix B** for a summary of the criteria that were used in the evaluation, the rationale for the priority protection provided for each criterion, and their presence on the site. In many cases, multiple criteria overlap and it is the most restrictive of these that determined the priority level for any particular area. A map of **Priority Protection Areas** which applies the criteria for the Cheltenham Badlands site is also included in **Appendix A**.



The badlands and the mature forest on the site are Level 1 Priority Protection Areas



Watercourses with a 15 metre buffer are a Level 2 Priority Protection Area

### 9.2 NEPOSS Management Zones and Permitted Uses

The Niagara Escarpment Plan advocates for the establishment of a park zoning system as an essential tool for the orderly planning, development and effective management of protected natural areas, and sites within the NEPOSS. All park and open space management plans are required to include zone delineation, descriptions, and policies.

Zoning considers the site's features and attributes and different management requirements. It provides for the balancing of public uses with natural and cultural heritage conservation by directing recreational activities to activities with higher impacts to the least sensitive areas.

The aforementioned Priority Protection Areas were developed as a tool to identify the most important attributes of the Cheltenham Badlands property.

The Priority Protection Areas were then used as the basis for further delineating a system of management zones for the site.

Additional information on NEPOSS zone descriptions are contained within **Appendix B**.

### 9.3 Niagara Escarpment Parks and Open Space Management Zones

The Niagara Escarpment Parks and Open Space System Planning Manual (MNRF, 2012) system of zoning consists of the following six standard park zones: Nature Reserve Zone, Natural Environmental Zone, Access Zone, Cultural Heritage Zone, Development Zone and Resources Management Zone.

Refer to **Appendix B** for the Manual's NEPOSS Zones table that was used as reference to direct management at the Badland's and determine permitted uses that are outlined in **Table 2 (page 46)**.

### 9.4 Application of Management Zones to the Cheltenham Badlands

Based on the specific attributes and significant features of the site, and types of infrastructure proposed there are five management zones that are most applicable to the Cheltenham Badlands. These are: Nature Reserve Zone, Natural Environmental Zone, Access Zone, Development Zone, and Cultural Heritage Zone. The Resources Management Zone is not used.

The following sections describe the zone characteristics and permitted uses, outlined in the Niagara Escarpment Parks and Open Space

System Planning Manual **Appendix B**. These management zones are illustrated below with the proposed site development on the Site Concept Plan.

#### Nature Reserve Zone

Nature Reserve Zones include the most sensitive natural heritage features and areas that require careful management to ensure the long-term protection. The Cheltenham Badlands property contains a number of the attributes noted for Nature Reserve Zones, including habitat for species of special concern, streams, wetland, woodland and the badlands topography.

**Permitted Uses:** In order to protect, preserve, and rehabilitate identified natural heritage features visitor uses are limited or restricted.

Development is generally restricted to trails, necessary signs, minimal interpretive signage (where warranted), temporary research facilities and conservation practices.

#### Natural Environment Zone

Natural Environment Zones include scenic landscapes in which minimum development is permitted to support recreational activities that have minimal impacts on the Escarpment environment. This type of zone includes natural landscapes and high-quality natural settings. To allow for different levels of management,



Natural Environment Zones have been applied on the Cheltenham Badlands site to some of the more resilient natural areas and as buffers along the trail corridors.

**Permitted Uses:** Low to moderate intensity recreational activities (such as hiking and cross-country skiing) and facilities including trails, signage and minimal interpretive facilities.

### Access Zone

Access Zones support the limited trail activities permitted in the Natural Environment and Cultural Heritage Zones. Access to the Nature Reserve Zone is restricted. Access Zone's purpose is to provide access to the Badlands feature, and to connect with the limited trails located in the Natural Environment and Cultural Heritage Zones.

**Permitted Uses:** Development may include minimal facilities to support Nature Reserve, Natural and Cultural Heritage Zones. Examples include roads, signs, and trailheads.

### Development Zone

Development Zones provide access, orientation and operational facilities (e.g., visitor centres, maintenance buildings, parking lots) to support nature appreciation and recreational activities. This zone may include areas designed to provide facilities and supporting infrastructure for recreational purposes. The site entrance and parking lots on Olde

Base Line Road and Creditview Road are identified as Development Zones.

**Permitted Uses:** Development may include roads, parking lots and gates, picnic areas, and orientation, interpretive, educational, and maintenance facilities.

Development of facilities must be designed and undertaken in a way that will minimize their environmental and visual impact.



Existing Bruce Trail through Natural Zone



### Cultural Heritage Zones

Cultural Heritage Zones include cultural heritage resources that require management to ensure long-term conservation. Cultural Heritage Zone has been applied to the area associated with the stone ruins.

**Permitted Uses:** Interpretive, educational, research facilities, trails, signs, and historical restorations or reconstructions.



Existing entrance to the Bruce Trail from Creditview Road where a second parking/arrival area is proposed

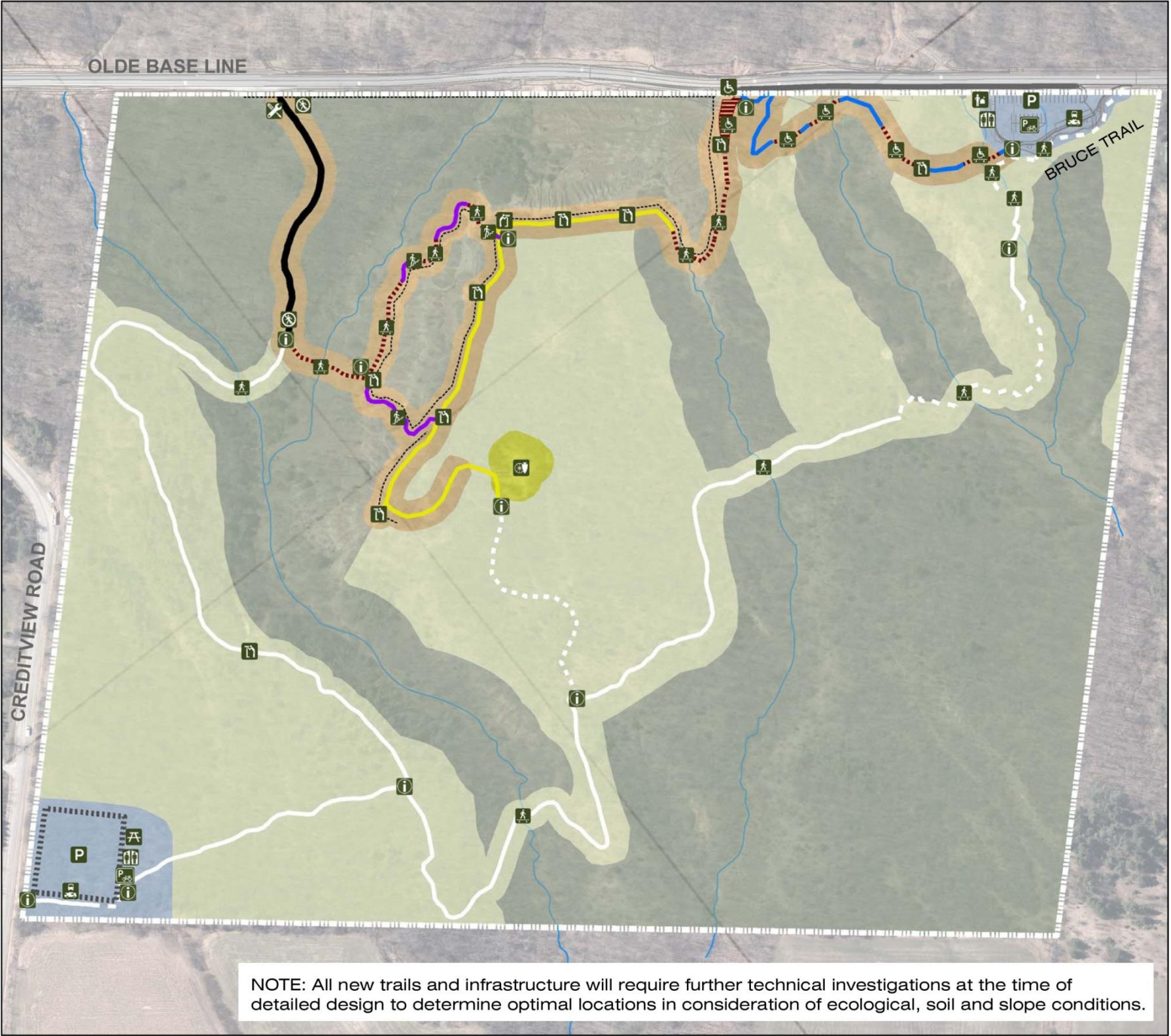
**Table 2: Cheltenham Badlands NEPOSS Management Zones Overview**

Zone	Description	Management Direction	Permitted Uses	Priority Protection
Nature Reserve	Nature Reserve Zones include the most sensitive natural heritage features and areas that require careful management to ensure the long-term protection. The Cheltenham Badlands property contains a number of the attributes noted for Nature Reserve Zones, including habitat for species of special concern, streams, wetland, woodland and the badlands topography.	<ul style="list-style-type: none"> <li>• No development permitted except: <ul style="list-style-type: none"> <li>○ Existing trail maintenance</li> <li>○ Existing boardwalk improvements and maintenance</li> </ul> </li> </ul>	In order to protect, preserve, and rehabilitate identified natural heritage features visitor uses are limited or restricted. Development is generally restricted to trails, necessary signs, minimal interpretive facilities (where warranted), temporary research facilities and conservation practices.	<p><b>Priority Level 1</b> on the Badlands Site feature. (see section 9.1)</p> <p><b>Priority Level 2</b> watercourses, wetlands and mature forests. (see section 9.1)</p> <p><b>Priority Level 3</b> Thickets. (see section 9.1)</p>
Natural Environmental	Natural Environment Zones include scenic landscapes in which minimum development is permitted to support recreational activities that have minimal impacts on the Escarpment environment. This type of zone includes natural landscapes and high-quality natural settings. To allow for different levels of management, Natural Environment Zones have been applied on the Cheltenham Badlands site to some of the more resilient natural areas and as buffers along the trail corridors.	<ul style="list-style-type: none"> <li>• Realignment of Bruce Trail</li> <li>• Existing boardwalk improvements</li> <li>• Trail</li> <li>• Signage</li> <li>• Infrastructure maintenance</li> </ul>	Low to moderate intensity recreational activities (such as hiking and cross-country skiing) and facilities including trails, signage and minimal interpretive signage.	<p><b>Priority Level 1</b> on the Badlands Site feature.</p> <p><b>Priority Level 2</b> watercourses, wetlands and mature forests.</p> <p><b>Priority Level 3</b> Thickets.</p>
Access	Access Zones serve as staging areas (e.g., trailheads, parking lots) where minimal facilities support the use of Nature Reserve Zones and relatively undeveloped Natural Environment and Cultural Heritage Zones.	<ul style="list-style-type: none"> <li>• Trailhead</li> <li>• Trails, boardwalks and viewing areas</li> <li>• Protective fencing to keep visitors off the Badlands feature</li> <li>• Interpretive, and wayfinding signage</li> <li>• Infrastructure maintenance</li> </ul>	<p>Development may include minimal facilities to support Nature Reserve, Natural and Cultural Heritage Zones. Examples include roads, signs, trailheads and parking lots.</p> <p>Removal of native plant</p>	<p><b>Priority Level 1</b> areas that cross the Badlands Site feature.</p> <p><b>Priority Level 2</b> trails that cross watercourses, wetlands and</p>

		<ul style="list-style-type: none"> <li>Maintenance trail that will be closed to public to allow maintenance staff equipment to access portions of the property.</li> </ul>	species will be minimized and, where possible, confined to areas of non-native, low-quality or diseased vegetation.	travel through mature forests.  <b>Priority Level 3</b> When trails travel through Thickets.
Cultural Heritage	Cultural Heritage Zones include cultural heritage resources that require management to ensure long-term conservation. Cultural Heritage Zone has been applied to the area associated with the stone ruins.	<ul style="list-style-type: none"> <li>No development permitted except: <ul style="list-style-type: none"> <li>Existing trail maintenance</li> <li>Fencing to protect features</li> <li>Interpretive or educational panels/signs</li> <li>Ongoing conservation initiatives to maintain</li> </ul> </li> </ul>	Interpretive, educational, research and management facilities, trails, signs, and historical restorations or reconstructions.	<b>Priority Level 3</b> Thickets surrounding the cultural heritage farm ruins.
Development	Development Zones provide access, orientation and operational facilities (e.g., visitor centres, maintenance buildings, parking lots) to support nature appreciation and recreational activities. This zone may include areas designed to provide facilities and supporting infrastructure for recreational purposes. The site entrance and parking lots on Olde Base Line Road and Creditview Road are identified as Development Zones.	<ul style="list-style-type: none"> <li>Trailhead and the main access to the park</li> <li>Parking lot off Old Baseline Road</li> <li>Potential parking lot and picnic area off Creditview Road</li> <li>Includes parking lot and gates</li> <li>Staff facilities and maintenance storage at both lot locations</li> <li>Restroom facilities</li> <li>Orientation and interpretive signage</li> <li>Infrastructure maintenance</li> </ul>	Development may include roads, parking lots and gates, picnic areas, and orientation, interpretive, educational, and maintenance facilities. Development of facilities must be designed and undertaken in a way that will minimize their environmental and visual impact. Special events may be staged in this zone, as described above. Removal of native plant species will be minimized and, where possible, confined to areas of non-native, low-quality or diseased vegetation.	<b>Priority Level 2</b> watercourses and mature forests.  <b>Priority Level 3</b> Thickets.



Figure 7: Cheltenham Badlands Site Concept Plan and Management Zones



**CHELTENHAM BADLANDS**

**FINAL SITE CONCEPT AND  
NEPOSS MANAGEMENT ZONES**

**Legend**

- |  |                          |
|--|--------------------------|
| — Property Boundary  | — Watercourse            |
| --- Protective Fence   | — Walkway (cement)       |
| — Maintenance Trail  |                          |
| — Type 1 (accessible - compacted limestone screenings)   |                          |
| — Type 2 (compacted limestone screenings)  |                          |
| — Type 3 (natural surface, improved boardwalks, targeted surface improvements and creek crossings) |                          |
| --- Type 3 (realigned sections of Bruce Trail)   |                          |
| — Type 4 (combination trail/boardwalk with staircase structures)                                   |                          |
| Future Parking and Arrival Area  |                          |
| Main Viewing Deck (approx. extent/accessible)  | Accessible Boardwalk     |
| No Public Access   | Boardwalk                |
| Maintenance Access Only  | Water Crossing           |
| Cultural Interest Area   | Lookout                  |
| Parking Lot  | Staff Shelter            |
| Accessible Parking   | Wayfinding / Information |
| Bicycle Parking  | Picnic Area              |
| Bus Loading / Staging Zone   | Washrooms                |
|  | Stairs                   |

**NEPOSS Zones**

- |                        |                     |
|------------------------|---------------------|
| Access Zone            | Nature Reserve Zone |
| Development Zone       | Natural Environment |
| Cultural Heritage Zone |                     |

0 15 30 60 90 120 Meters



MAP DRAWING  
INFORMATION:  
MAP PROJECTION:  
NAD 1983 UTM  
ZONE 17N  
STATUS: FINAL  
DATE: 02/22/2018



## 10.0 MANAGEMENT POLICIES

### 10.1 Management Zones

The property includes five management zones that are described in *The Niagara Escarpment Parks and Open Space System Planning Manual*.

The following sections outline general and specific policies related to each zone. Each zone will have different policies related to the development of site infrastructure, natural environment protection and restoration, permitted/non-permitted site uses, and visitor and trails management.

The property will be managed by Credit Valley Conservation, in collaboration with the Bruce Trail Conservancy, or another suitable property manager. The property manager will be responsible for trail maintenance and upkeep.

#### 10.1.1 Nature Reserve Zone

Protection for Habitat for Species at Risk, Significant Wildlife Habitat, Rare Communities and Sensitive Features will be the highest order priority in the Nature Reserve Zone. These significant areas on the site will be protected and monitored.

The Badlands topography on the site will be protected and monitored. Monitoring will continue in partnership with researchers at the

University of Toronto to conduct research on geomorphological concerns regarding the feature such as erosion. Similarly, a partnership exists with the researchers at the University of Waterloo to determine the rate and extent of ecological succession over the Badlands feature.

Ecological succession studies, a summary on invasive species colonization, and biophysical inventories of flora will be undertaken by the University of Waterloo through a partnership with the Ontario Heritage Trust. Monitoring and assessment of erosion to the badlands feature and its conditions will be undertaken by the University of Toronto through a partnership with the Ontario Heritage Trust. The property manager will undertake regular monitoring visits and will document notable ecological changes on the property on a regular basis, in keeping with its regular monitoring and site management practices.

Development will be limited to signage and existing trail maintenance or improvements and otherwise avoided in the Natural reserve zone.

#### 10.1.2 Natural Environment Zone

Protection for Habitat for Species at Risk, Significant Wildlife Habitat,

Rare Communities and Sensitive Features will be the highest order priority in the Natural Environment Zone.

Any future development that is not related to trails, signage or maintenance, and is not outlined in the Master Plan will not occur in the Natural Environment Zone.

### 10.1.3 Access Zone

Future development and infrastructure improvements will primarily occur in the Access or Development Zones. The Access Zone will be the designated area for trail development and posting wayfinding and interpretive signage. Additional development will be prioritized in the Access Zone to enhance facilities to support adjacent Nature Reserve, Natural Environment and Cultural Heritage Zones. Any development not outlined in the Master Plan will occur in the Access or Development Zones. However, development requiring a master plan amendment will only occur after additional public consultation has occurred and after the Niagara Escarpment Commission and Ministry of Natural Resources and Forestry approve proposed development. Future Access Zone development may require a Master Plan amendment.

Some new trails and infrastructure may require further technical investigations at the time of detailed design to determine optimal locations in consideration of site-specific conditions. To minimize impacts caused from construction activities on the property, consideration will be given to final locations for trails, viewing decks, parking lots and other infrastructure that result with the least impact.

Mitigation actions will be developed and implemented so as to minimize any negative impacts anticipated on the natural environment due to the construction of built features.

Developments on the property will meet accessibility standards and requirements, as laid out in the Accessibility for Ontarians with Disabilities Act where feasible, and the Ontario Building Code's requirements for barrier-free design, where it is required.

Opportunities for interpretation will be located in the Development and Access Zones and will be part of the planned system of parking facilities, visitor amenities, trails and viewing areas that have been developed for the site, as described in section 14.0. Site interpretation and education may include a variety of signage, viewing areas and information kiosks best suited to the site and the particular feature of the property being highlighted.

Education and interpretation efforts will showcase natural, cultural and geological attributes of the site, as well as encourage stewardship and conservation of the property and improve knowledge regarding the impact of natural erosion processes on the Badlands shale feature.

An interpretive plan will be developed to implement these efforts on the site as part of the planning process.

### 10.1.4 Development Zone

Future development and infrastructure improvements will primarily occur in the Access or Development Zones. The Development Zone will be the designated area for main recreational development on the property. Development may focus on the creation of an additional parking lot, picnic areas, maintenance facilities, washroom facilities and commercial service facilities. Additional development will be prioritized in the Development Zone first. Any development not outlined in the Master Plan will only occur in the Access or Development Zones and may require an Niagara Escarpment Commission permit. However, development requiring a Master plan amendment will only occur after additional public consultation has occurred and after the Niagara Escarpment Commission and Ministry of Natural Resources and

Forestry approve proposed development. Future Access Zone development may require a Master Plan amendment.

Some new trails and infrastructure may require further technical investigations at the time of detailed design to determine optimal locations in consideration of site-specific conditions. To minimize impacts caused from construction activities on the property, consideration will be given to final locations for trails, viewing decks, parking lots and other infrastructure that result in the least impact.

Mitigation actions will be developed and implemented so as to minimize any negative impacts anticipated on the natural environment due to the construction of built features.

Developments on the property will meet accessibility standards and requirements, as laid out in the Accessibility for Ontarians with Disabilities Act where feasible, and the Ontario Building Code's requirements for barrier-free design, where it is required.

Opportunities for interpretation will be located in the Development and Access Zones and will be part of the planned system of parking facilities, visitor amenities, trails and viewing areas that have been developed for the site, as described in section 14.0. Site interpretation and education may include a variety of signage, viewing

areas and information kiosks best suited to the site and the particular feature of the property being highlighted.

Education and interpretation efforts will showcase natural, cultural and geological attributes of the site, as well as encourage stewardship and conservation of the property and improve knowledge regarding the impact of natural erosion processes on the Badlands shale feature.

An interpretive plan will be developed to implement these efforts on the site as part of the planning process.

### **10.1.5 Cultural Heritage Zone**

Areas that have been identified as having archaeological potential under the Stage 1 archaeological assessment on the property will be monitored and protected, as is necessary, from proposed developments on the property and natural hazards such as extreme erosion.

Any development that is not related to trails, signage, maintenance, feature protection, restoration or reconstruction and is not outlined in the Master Plan will not occur in the Cultural Heritage Zone.

## **10.2 Natural Environment Protection and Restoration**

- Closed trails will be re-naturalized and/or rehabilitated as required.
- In each phase of site development implementation, additional site-specific information on plant communities, wildlife habitat, natural stream functions and aquatic habitat may be needed as part of planned trail and infrastructure planning and design. This information will be gathered through regular, proactive monitoring of natural features and habitats by the site's operating partner as part of their regular monitoring and maintenance work. Additional data collection will be coordinated by the Trust and the site's operating partner, if necessary.
- Where removal of healthy, native trees is necessary for development, compensation may be provided through restoration planting or seeding with suitable native species to promote native vegetation cover on the site.
- The regeneration and maintenance of native vegetative cover will be supported in areas outside of the development footprint



- Setbacks and protective buffer zones will be used where they are appropriate to reduce impacts from visitation on sensitive natural heritage and geological features. Buffers and setbacks mechanisms can reduce the impacts of land use on adjacent natural features and can contribute substantially to the protection of natural features (The utility of buffers is described in detail in the Ministry of Natural Resources and Forestry's *Natural Heritage Reference Manual* section 13.5.4.2).
- Invasive species will be identified and monitored and control methods will be implemented where needed and where feasible.
- All water course crossings, whether intermittent or permanent, will be managed to support the natural hydrologic and ecologic functions of the watercourse.
- A monitoring program and visitor surveys will inform an adaptive management approach to direct site management decisions such as seasonal closure of developed trails, or limiting of site visitation during sensitive time periods to ensure natural and cultural heritage features are not compromised. This monitoring program will include

visitor impacts on environmental assets on the property including, but not limited to, geomorphological features, wetlands, waterways, and wildlife on the property.

### 10.3 Additional Development on the Property

- Proposed development not outlined in this Master Plan may require a development permit or a Master Plan amendment.
- Development permits will be sought for minor development (e.g., building a boardwalk not in the master plan) from the Niagara Escarpment Commission.
- A Master Plan amendment will be required for any larger development (e.g., new parking lot). Any development on the property that requires a Master Plan amendment will necessitate public consultation and will require Niagara Escarpment Commission support and Ministry of Natural Resources and Forestry approval for the proposed development.
- Any future trail development will utilize existing trail routes, where feasible, before considering options for new trails or development into new areas. Any existing trails or sections thereof that are deemed to be unnecessary or in need of

rerouting given existing field conditions shall be closed.

- Development footprints will reflect the anticipated volume and intensity of use at key areas on the property, as outlined by the three phases of implementation. Each phase will be supported by data about visitor use.
- Low impact design standards and other mitigation techniques will be incorporated wherever feasible, to reduce and mitigate the environmental impact from the construction and development impacts of new infrastructure.
- The impacts from initial construction will be considered and minimized to the greatest extent possible when determining final locations for trails, viewing decks, parking lots and other infrastructure.

### 10.4 Permitted / Non-Permitted Uses

- In order to minimize the impacts from visitors to the property, the Cheltenham Badlands site has the following permitted uses:
  - Hiking on authorized trails and boardwalks only;
  - Snowshoeing, cross country skiing on main Bruce Trail only;

- Birding and Wildlife viewing;
- Commercial photography and/or filming (Trust or property manager permit required)
- Special events will be limited to the parking lot and/or the main viewing deck. These sanctioned events may include bike/running race stopovers in the parking lot, Art in the park, events tailored to kids learning about nature, yoga and other wellness events (Trust or property manager permit required).
- Research activities (Trust or property manager permit required).
- Other activities not specified in the Master Plan but deemed to be in alignment with NEPOSS policies and the site's operational policies, as determined by the property manager and the Trust (Trust or property manager permit required).
- Typical users will not be permitted on the badlands feature and similarly environmentally

sensitive areas of the property.

- In order to prevent the Badlands' feature degradation, very limited access to the feature will be permitted or allowed and restricted to these permitted uses undertaken by agreement with the Trust or property manager :
  - Research activities
  - Property management (such as garbage removal, maintenance, or hazard removal).
  - Natural Heritage Inventories
- All other uses are prohibited.
- Given the adaptive management approach taken on the property, new potential uses for the property may be proposed in the future. These uses may be based on improvements proposed for the property and the steward's capacity to manage the property. New proposed uses of the property will be considered, unless detrimental to the site and its use, as determined by Ontario Heritage Trust and the property manager and consistent with NEPOSS policies. Acceptable proposals will include uses deemed appropriate to the property's needs and conditions as determined by monitoring and

property zoning. The Ontario Heritage Trust in partnership with the property manager may evaluate these new uses using a number of criteria, including:

- The requirement for a NEC development permit;
- Environmental impacts (real and potential);
- Social impacts (real and potential);
- Infrastructure Needs;
- Ability to manage (current and future);
- Activity demand (based on market analysis);
- Cost-benefit analysis (including forgoing action on other priorities);
- Liabilities and hazards; and
- Appropriateness (does the activity fit within the property's classification and zoning scheme).

## **10.5 Visitor and Trail Management**

### **10.5.1 Signage**

- Signage may be added as each new phase is implemented, as reflected in the signage plan and policies.
- Ontario Heritage Trust will work with the property manager, the Bruce Trail Conservancy and other partner groups to update and/or

determine the need to enhance necessary signage for existing sections of the Bruce Trail in the site.

### 10.5.2 Visitor Management

- Visitor monitoring and surveys will be undertaken periodically to estimate visitor volume, duration, frequency and patterns. The parking lot will be monitored and trail counters will be installed at trail entrances to provide additional insight on visitor numbers. This monitoring will provide feedback and inform ongoing decision making and adaptive management efforts on the property, which will contribute to the implementation of future projects and property management activities at each phase.
- Enforcement activities related to unauthorized uses, encroachment and security will be monitored in cooperation with the property manager and Bruce Trail Conservancy and will be addressed on an ongoing basis in cooperation with local law enforcement agencies.

### 10.5.3 Monitoring

- A monitoring program will be developed to provide current

information on the property on an ongoing basis. This monitoring program will be informed by the current property monitoring practices of the Ontario Heritage Trust and its property management partners. Various research work undertaken by universities with established partnerships with the Trust will be reviewed and have the results integrated into the management for the property. Ecological succession studies, a summary on invasive species colonization, and biophysical inventories of flora will be undertaken by the University of Waterloo through a partnership with the Ontario Heritage Trust. Monitoring and assessment of erosion to the badlands feature and its conditions will be undertaken by the University of Toronto through a partnership with the Ontario Heritage Trust. The property manager may undertake regular monitoring visits to document ecological changes on the property on a regular basis, in keeping with its regular monitoring and site management practices.

### 10.5.4 Trail System

- Trails will be periodically monitored and maintained by volunteers from the Bruce Trail



Conservancy and staff from the property manager.

- Immediate steps will be taken to close unsanctioned trails that present safety and conservation risks (i.e. fencing, signage, enforcement).

### 10.5.5 Traffic Management

There were serious safety concerns with the intense public use and associated vehicular traffic at the property. Thousands of visitors visited the site annually creating a vehicle safety risk when parking illegally on the road. In order to understand this issue the Trust conducted visitor monitoring to gauge site usage during peak times. During this period the Trust also initiated a research partnership with the University of Toronto to monitor erosion over time. From this initial information and advice, the Trust decided to close the property to the public to both protect the badlands feature and provide the opportunity to improve safety for visitors to the property.

Initially, a controlled pedestrian and vehicular traffic strategy guided the creation of a parking lot, a new pedestrian viewing platform, walkways and trails in order to address the traffic issues and protect the site. Significant improvements have been made in collaboration with local organizations to improve traffic and public safety. However, with the property re-opening to the public once again, similar safety concerns

might emerge during the busy seasons because Olde Baseline is still a one lane road in each direction. The Ontario Heritage Trust has collaborated with the Credit Valley Conservation Authority to develop a visitor safety plan to manage visitor management on site.

In addition, the Ontario Heritage Trust is part of the Fall Colours Planning Committee which includes members from the Town of Caledon, the Region of Peel, Credit Valley Conservation, and the Ontario Provincial Police. This committee collaborates to discuss visitor management in the broader regional context for the peak visitor period of September and October. The Trust will continue to participate in this committee or similar iterations of the committee to collaborate with partners about traffic safety. However, the Region and Town have specific jurisdiction over traffic management and control over roads.

The Trust will ensure that it and its partners take the necessary steps given budgetary constraints to alleviate visitor congestion and ensure everyone has a safe visit. This may include:

- Live updates may be provided by property manager on social media to inform the public about traffic volumes and congestion on the roads leading to the property. Websites may provide

information or links to the social media accounts and detailed information about hours of operation, fees, and permits. This approach will be piloted and its continuance is dependent on level of effort and costs required as well as its effectiveness in reducing visitor congestion.

- A shuttle bus service may be piloted by the property manager in the first season of operation. It is intended to bring visitors from nearby destinations to the Badlands at a cost. If implemented, these shuttle buses will run scheduled trips on the weekends to the Badlands property from a local public parking lot or business. The continuance of this service is

dependent on its effectiveness as determined by the number of users, fee recovery and local support.

- Parking fee enforcement in the parking lot on Olde Baseline Road will be integrated into park operations to discourage illegal parking, fee avoidance, and encourage carpooling or shuttle bus usage, and increase visitor turnover. The property manager may hire staff or subcontract the parking fee duties to a parking enforcement company to ensure compliance. Fees will be set by the property manager and may be adjusted, in response to ongoing monitoring and parking payment compliance.



Bruce Trail



Natural regeneration is being used to restore informal footpaths

- Municipal and Regional Road traffic management will continue to be addressed by local law and traffic enforcement partners. The Trust and its Badlands property manager will be part of and collaborate with members of the Fall Colours Traffic Safety Committee (or similar iteration) to ensure effective control measures during peak season.

## 11.0 OPERATIONAL POLICIES

### 11.1 Site Partners

Operation of the Cheltenham Badlands site will be guided by the tripartite management agreement between the Trust, Credit Valley Conservation, and the Bruce Trail Conservancy. In the pilot year the property will be managed by the Credit Valley Conservation which will be responsible for daily operations and maintenance. The Bruce Trail Conservancy will conduct trail monitoring and maintenance support on its trails on the property. The Trust will own the property and be responsible for capital projects. In the event the partner agreement is nullified then a new third party partner will be selected to operate as the property manager.

The following is a summary of proposed site operation policies under consideration.

### 11.2 Hours and Season of Operation

- The Cheltenham Badlands site will be open during daylight hours from April to the end of October annually. This is subject to change based on monitoring results.
- Year-round access will be limited to permitted uses along the main Bruce Trail only (hiking, cross country skiing,

snow shoeing) pending ongoing monitoring results.

- Access may be restricted during periods of inclement weather (rain, freezing rain, ice etc.) as erosion from the badlands may adversely affect trail and property conditions.

### 11.3 Parking Lot(s)

- Parking lot hours of operation will follow 'Hours and Season of Operation' and be subject to change based on data collected through monitoring activities.
- Fees, to offset annual operating costs, may be charged for the use of the parking lot(s) on the site. However, fee amounts will be based on cost recoupment and Ontario Heritage Trust and the property manager will review fee amounts charged annually.
- Old Base Line parking lot use data and analysis, along with other means of access to the site such as visitor totals related to buses or Bruce Trail access etc., will be required to inform the need and/or the timing of any additional parking facilities.



- Parking and traffic enforcement on the road is outside the scope of this Master Plan. The local municipality, local and provincial police, and enforcement agencies continue to be responsible for enforcement of traffic regulations on local roadways.
- During the Fall Colours season (weekends in September and October), the Ontario Heritage Trust (and the property manager) will collaborate with the Fall Colours Traffic Management Committee (or similar iteration) to facilitate traffic management initiatives for the Badlands. All public messaging and actions taken will ensure that there is a coordinated approach to managing the Fall Colours visitor demand. Actions taken may include:
  - Monitoring of parking lot and traffic flow;
  - Ontario Provincial Police-led enforcement with assistance from the Town's Enforcement Officers along Olde Base Line and surrounding roadways; and
  - Public messaging.

### 11.4 Facilities and Infrastructure

Additional infrastructure and facilities will be considered within the Access and Development zones based on

changing site conditions and visitor feedback from ongoing monitoring activities. An NEC development permit or Master Plan amendment may be required for additional facilities not outlined and approved in this Master Plan

### 11.5 Waste Disposal

- Adaptive management will be used to determine the need for and future options for waste receptacles on the site.

### 11.6 Buses

- Drop-off zones in the main parking lot on Olde Base Line Road are for school buses only.
- The use of shuttle buses to the site is a potential economic development and tourism opportunity for the long-term, but requires further investigation by external stakeholders and other interested parties and is out of the scope of this Master Plan.
- Monitoring of the parking lot will be undertaken to collect data on the types of vehicles used to access the site and to inform discussion of options for future accommodation of additional buses or the use of shuttles.
- Informed by the collected visitor monitoring data, additional shuttle, coach, and other touring bus drop-off

zones will be considered for inclusion in the parking lot on Creditview Road.

### 11.7 Permitting

- Trust or property manager permits will be required for the following activities on the property:
  - Commercial photography and/or filming
  - Special events will be limited to the parking lot and/or the main viewing deck. These sanctioned events may include bike/running race stopovers in the parking lot, Art in the park, events tailored to kids learning about nature, yoga and other wellness events.
  - Research activities
  - Other activities not specified in the Master Plan but deemed to be in alignment with the site's operational policies, as determined by the property manager and the Trust. Users will not be permitted on the badlands feature and similarly environmentally sensitive areas of the property.
- A permitting system will be administered by the property manager in collaboration with the Trust, to address special events, filming and commercial

photography. This permitting system will be informed by and in keeping with current practices the Trust has established for permitting at other properties and sites. These may include issuance of permits, supervised shoots,

and identification of defined shooting locations. Permit fees



The Badlands are a popular spot for photography and filming

may be applied. Filming and commercial photography will not be permitted on the badlands feature and similarly environmentally sensitive areas of the property.

- A Trust or property manager permit may be provided for special uses that are consistent with NEPOSS policies.
  - A Niagara Escarpment Commission development permit or Master Plan amendment will be necessary for any activities that require construction on the property not outlined in this Master Plan.
- Research activities associated with abiotic and biotic inventories and assessments are within the context of the Plan's principles and objectives. Such research will continue to be a permitted use on the site, subject to permission by the Trust.
- Other activities determined to align with the Master Plan's principles and objectives may be approved by the Trust or The property manager so long as consistent with NEPOSS policies and user will not be permitted on the badlands feature and similarly

environmentally sensitive areas of the property.

## 12.0 SITE CONCEPT OPTIONS CONSIDERED

### 12.1 Preliminary Site Concepts

A range of site development alternatives were prepared for this property to address management issues (Section 8.0) and were discussed through the public and stakeholder consultation process and in consultation with the Mississaugas of the New Credit First Nation. Details of the four (4) site concept plans considered for the property are described in **Appendix C**.

The concepts integrate the following four principles established for the Cheltenham Badlands.

- 1 Conservation of the property's cultural and natural heritage values.
- 2 Safety for all individuals who visit the site.
- 3 Improved accessibility for those who wish to access the site.
- 4 Enhanced opportunities for interpretation and public education.

Initially three (3) site concepts were prepared for the site, reflecting a range of opportunities. The concepts were refined and a fourth concept was added following review with the Cheltenham Badlands Management Planning Team (CBMPT). The approach to developing these concepts, and maps and detailed descriptions of the four (4) concepts are included in **Appendix C**. They included several common elements:

- A parking lot on Olde Base Line Road (33 car space, 2 school bus spaces), and 1 accessible parking space at the main badlands;
- Connecting walkway on Olde Base Line Road between the parking lot and the main badlands;
- The main Bruce Trail in its current alignment (approx.. 1200 metres)
- A viewing platform and interpretive area at the main badlands, with fencing to prevent access;
- A system of wayfinding signs and trail markers.

### 12.2 Preferred Site Concept

The four (4) concepts were presented at Public Meeting #3 and a Community Forum. An overview of feedback received from these consultation sessions is provided in Section 13.0 with a summary and details of the meeting proceedings in **Appendix D**.

There were mixed opinions received on the concepts, with some participants preferring very minimal visitor infrastructure, while others supported a more fully developed site. There was a range of support expressed for various site elements contained in the four concepts by stakeholders, members of the public and members of the CBMPT.



Addressing the comments and interests generated through this process resulted in further dialogue with the CBMPT, partner agencies and the Accessibility Advisory Committees. As a result, technical investigations and field work were undertaken to examine:

- The feasibility of a trail connection across the secondary badlands (wetland to plateau trail). This exercise resulted in the identification of an optimum route, which is reflected in the final site concept.
- An optimal accessible trail route linking the parking lot to the badlands viewing area. This trail is a balanced route

reducing the environmental impact of necessary infrastructure.

The technical reviews resulted in the generation of additional site concept options, which were reviewed with the CBMPT in consideration of environmental protection and management objectives and operational considerations.

The final concept plan for the Cheltenham Badlands provides for protection of natural and cultural features, and offers an enhanced level of facilities and amenities to support recreational day-uses and a high-quality visitor experience.

Refer to Section 14.0 for the final Site Concept Plan.



View from the proposed Main Badlands Viewing Area

providing sustainable access to the badlands feature while

## 13.0 PUBLIC CONSULTATION

### 13.1 Overview

The Master Plan for the Badlands has sought to strike a balance between protecting the sensitive natural and cultural heritage features of the property, and enhancing and maintaining visitor infrastructure to provide the public with a high-quality experience. The Trust undertook public consultations in order to seek feedback on these plans. The following sections provide an overview of the proceedings and key findings from the public and stakeholder consultation sessions held throughout the study. These were:

- Public Feedback Survey;
- Four (4) Public Meetings;
- Three (3) Community Forums (Residents, Business and Community);
- Meetings with representatives from: the Town of Caledon Accessibility Advisory Committee; the Region of Peel Accessibility Advisory Committee;
- Meetings with the Mississaugas of the New Credit First Nation.

The following sections summarize the consultation events and high level feedback. Details of the proceedings are contained in **Appendix D**.

### 13.2 Public Feedback Survey

An online survey was launched in September 2015. It included 16 survey questions related to where visitors lived, how frequently they visited the Cheltenham Badlands, activities undertaken at the site while visiting, and suggestions for new amenities. The survey was advertised through a media release, in six newspapers and on partner agency web-sites and ran for approximately six weeks. There were 590 respondents to the survey, although not everyone answered all questions.

### 13.3 Public Meetings

Four public consultation meetings were held during the planning process, between October 2015 and April 2018. These meetings provided residents with opportunities to provide feedback at various points in the process. Meeting attendees voiced concerns about access to the site, traffic safety, parking, and preserving natural heritage features on the property.

#### 13.3.1 Input from Public Meeting #1

October 13, 2015, 7 p.m., Caledon Community Complex

The purpose of the meeting was to review the study process, outline the goals for the Cheltenham Badlands, provide preliminary results from the online public feedback survey, and to

receive thoughts and ideas about the site. The meeting included a presentation and question and answer period followed by a workshop component with break-out table discussions. The meeting was attended by approximately 30 members of the public and representatives from the Trust, the Cheltenham Badlands Management Planning Team, and the consultant team.

### Public Consultation Meeting #2

January 25, 2016, 7 p.m., Caledon Community Complex

Public Meeting #2 was the second in a series of public consultation events on the Master Plan for the Cheltenham Badlands. The meeting was conducted as an open house with display boards, followed by a presentation and question and answer period.

The purpose of the meeting was to provide a summary of the public consultation to date, including the online survey results and Public Meeting #1 input. The meeting was also an opportunity to present the findings of the Stage One Inventory & Analysis, Priority Protection Areas mapping and rationale, and key management strategies.

The meeting was attended by approximately 35 members of the public and representatives from the Trust, the CBMPT, and the consultant team.

### Public Consultation Meeting #3

June 1, 2016, 7 p.m., Inglewood Community Centre

Public meeting #3 was the third in a series of public consultation events on the Master Plan for the Cheltenham Badlands property.

The purpose of the meeting was to: provide an update on the planning process to date, and present and seek feedback on four (4) preliminary site concepts.



View from the 'plateau' north to Olde Base Line Road and the Main Badlands Viewing Area

Approximately 40 members of the community attended this third public meeting. A range of support was expressed for various elements in the four site concepts and no clear preference was expressed for any one concept.

### Public Consultation Meeting #4

April 5, 2018, 7 p.m., Caledon Community Complex

Public meeting #4 was the fourth in a series of public consultation events on the Master Plan for the Cheltenham Badlands property. This meeting was organized as a typical open house, with an introductory presentation.

The purpose of the meeting was to recap the study process and findings, present and discuss the final site concept plan, management and operational strategies and other aspects of the Master Plan, and outline major themes and comments heard during the development process and how they were addressed. The meeting also provided an opportunity to provide an update on site development activities to date.

The meeting was attended by approximately 28 members of the community.

### **13.4 Community Forums (Resident, Business and Community)**

In response to feedback requesting additional consultation with the local community, the Trust, in collaboration with the Region of Peel, hosted three supplementary discussion forums to receive targeted input from local stakeholders. Notes and comments from each of these meetings were provided to participants and the planning team. High-level summaries were shared with the general public at Public Meeting #3.

These consultations included: a Residents Forum held on March 30, 2016, at 7 p.m., at Inglewood Community Centre; a Business Forum held on April 12, 2016, at 7 p.m., at Spirit Tree Estate Cidery; and a Community Forum held on June 22, 2016, at 7 p.m., at Inglewood Community Centre. The forums purpose of these was to relay background information and to provide a forum to listen to comments, ideas and concerns from local residents and businesses. Many of the participants at the Community Forum also attended the Residents or Business Forum, or the public meetings. Consequently there were a number of repeated ideas and comments.

Attendees were also asked for their feedback on the four site concepts through a Group Evaluation Exercise (5 Table Groups). A slight preference was expressed from the break-out groups for Concept #4.

Meetings were held with the partner



Existing informal footpath across wetland in the vicinity of the proposed boardwalk trail

agencies that make up the



Cheltenham Badlands Management Planning Team at key junctions in the study process as the plan evolved. The purpose of these meetings was to seek insight and feedback on management approaches and site development opportunities in order to integrate these ideas into the Master Plan. Key findings were also reviewed and discussed prior to proceeding to public meetings.

Additional partners and stakeholders consulted through the study process included:

- The Mississaugas of the New Credit First Nation;
- The Town of Caledon Accessibility Advisory Committee;
- The Region of Peel Accessibility Advisory Committee.

Additionally, the Trust provided broader public engagement and transparency throughout the Master Plan process by utilizing its website to provide information and access to people across Ontario and elsewhere.

### 13.5 Indigenous Engagement

Consultation with the Mississaugas of the New Credit First Nation was conducted throughout the study. The Trust met with representatives of the Mississaugas of the New Credit First Nation's Department of Consultation

and Accommodation. Consultation followed the Mississauga of the New Credit policies and procedures and identified cultural and natural interests, consultation on development of the Master Plan, collaboration on creation of educational and interpretive materials, appropriate recognition of traditional territory and treaty lands, and ensured Indigenous archaeological monitoring of the site.

From this consultation the Trust also heard from the Mississaugas of the New Credit First Nation about their interest in ensuring protection for the natural heritage of the site, and concern over whether sediments from the erosion of the badlands was affecting the wetland on-site and the downstream Credit River system.

### 13.6 Accessibility Advisory Committee Meetings (Region of Peel, Town of Caledon)

In response to questions and comments received from the Town of Caledon Accessibility Advisory Committee in September 2016, the Trust took the following actions related to improving accessibility on the site

- Obtained input from an accessibility consultant;
- Developed options for enhancing accessibility;
- Consulted directly with the ToC and Region of Peel Accessibility Advisory

Committee to receive additional feedback.

In January 2017, the Trust coordinated a joint meeting with the Town of Caledon and Region of Peel Accessibility Advisory Committee.

The meeting focused on the following:

- Master Planning process and current status;
- Overview of site improvements;
- Feedback on proposed accessibility enhancements.

The outcome from these discussions has informed the planning for an accessible trail between the parking lot and the main badlands viewing area.

Additional meetings were held in January and then mid-February 2018 for the Trust to address Caledon and then Peel's Accessibility Advisory Committees. In those meetings, the Trust outlined changes made to accessibility on the site, as a direct response to the committees' initial suggestions.

### 13.7 Other Comments Received

Throughout the study comments, suggestions and concerns were also received by email and phone from local residents and interested participants. Comments related to the Master Plan are reflected in the

summary of comments and responses in the following section and/or included in meeting notes, as outlined in **Appendix D**.

### 13.8 Key Comments and Responses

The ideas and comments that emerged from the public meetings, forums, and stakeholder consultations were wide ranging and included recommendations for closing off the entire Badlands site as well as developing the site more fully.

All comments received were considered and evaluated against



Informal trail and viewing spot along the proposed plateau trail

the principles established for the site.

Many of the concerns from local residents centred around the parking lot and walkway on Olde Base Line Road which was pre-determined and approved through a separate process. The community forum held on the Master Plan included a presentation and discussion led by the Region of Peel on the parking lot project.

A summary of comments received is included in **Appendix D**, noting if/how they have been addressed in the Master Plan. Detailed responses are provided, where applicable.

## 14.0 THE CHELTENHAM BADLANDS SITE CONCEPT PLAN

### 14.1 Concept Plan Description

The Cheltenham Badlands Master Plan, including the final concept plan (see **Figure 7** on **page 48**), provides for a careful balance between the protection of the environment, an enhanced level of amenities to support recreational day-uses, interpretation and a high-quality visitor experience.

All new trails and infrastructure, except the accessibility trail, will require further technical investigations at the time of detailed design to determine optimal locations in consideration of ecological, soil and slope conditions. The accessibility trail investigation was completed in December 2017.

Key elements of the Site Concept Plan to direct improvements and enhancements at the property include:

#### Parking/Arrival Areas

**Main Parking Lot:** Existing parking lot (33 cars, 2 school buses), roadside walkway and accessible parking space on Olde Base Line Road (constructed in 2017).

Enhancements to this area are proposed through the Master Plan to support its function as the main site entrance (e.g., accessible parking

spots, trailhead, gatehouse, staff house, washrooms, wayfinding/interpretive signage).

**Southwest Parking Lot:** Future parking lot and arrival area with driveway entrance from Creditview Road (50 car spaces and space for tour buses with the potential to modify the number of spaces after stakeholder consultation). Future amenities to support day-use may be developed at this parking lot (e.g., trailhead, picnic area, washrooms, bike racks, wayfinding/interpretive signage, staff house, and gatehouse).

The southwest parking lot is subject to visitation monitoring and detailed site assessments to determine the necessity and the optimal location and layout. The public and local residents would be consulted prior to this parking lot construction and any deviation from the Master Plan will be reflected in a Master Plan amendment.

#### Viewing Areas

**Main Badlands Viewing Platform:** An accessible viewing deck and interpretive area at the main badlands viewing area.

**Lookouts:** A system of viewing pods at key vantage points overlooking the



badlands feature linked by boardwalk and connected to the trail system.

### Trails

All trails are intended to be recreational trails, while the majority will be relatively flat with stairs and boardwalks provided where needed.

**Accessible Trail** (Trail Type 1): An accessible trail linking the Main Parking Lot to the main badlands viewing area, with boardwalk structures over emerging Badlands, gullies and water courses. This trail type incorporates limestone screenings, boardwalks, fenced edges and rest areas.

**Plateau Trail** (Trail Type 2): A walking trail extending from the main badlands viewing area along the plateau/ridge overlooking the main and secondary badlands features. This is a reasonably level, easy walking trail with the potential to be an accessible trail. This trail type will utilize limestone screening and fenced edges along the feature side and connect the viewing platforms and the crescent shaped viewing deck located at the saddle area.

**Bruce Trail** (Trail Type 3): Existing Main Bruce Trail and the side trail and connections with re-alignments where indicated on the plan, and improvements to surfacing, stairs and creek-crossing structures where needed to support increased visitation.

**Wetland to Plateau Trail** (Trail Type 3 and 4): A sustainably designed system of trail(s) linking the Olde Base Line Trail to the Plateau Trail, with lookouts, boardwalk structures at the wetland and over exposed shale, and staircase structures where needed. This potential route is anticipated to spread visitors out along the main and secondary viewing areas. This route is likely to be developed if site usage suggests it is needed.

**Maintenance Route:** The northerly section of the Bruce Trail side trail extending north from the wetland crossing is proposed to be temporarily closed to the public to avoid a dead-end at Olde Base Line Road. The existing trail will be gated and the portion closest to the road will be retained as a maintenance/access road to support site operations.

**Wayfinding/Interpretive Elements:** A system of wayfinding signs and interpretive signs/elements to be located at the Parking/Arrival Areas, Main Viewing Area, Lookouts and key junctions along the trail system. Interpretive components will be developed through an interpretive plan for the site.

### Shelters

**Pavilion:** A pavilion is proposed to be constructed at the main viewing area. If this structure is provided, the approximate size would be 45 square

meters. This exemption is approved pending submittal of detailed design.

**Staff Kiosk:** A staff kiosk is proposed for the parking lot to provide shelter and security to on site staff. If this structure is provided, the approximate size will be 15 square meters.

### **14.2 Trail Infrastructure and Amenities**

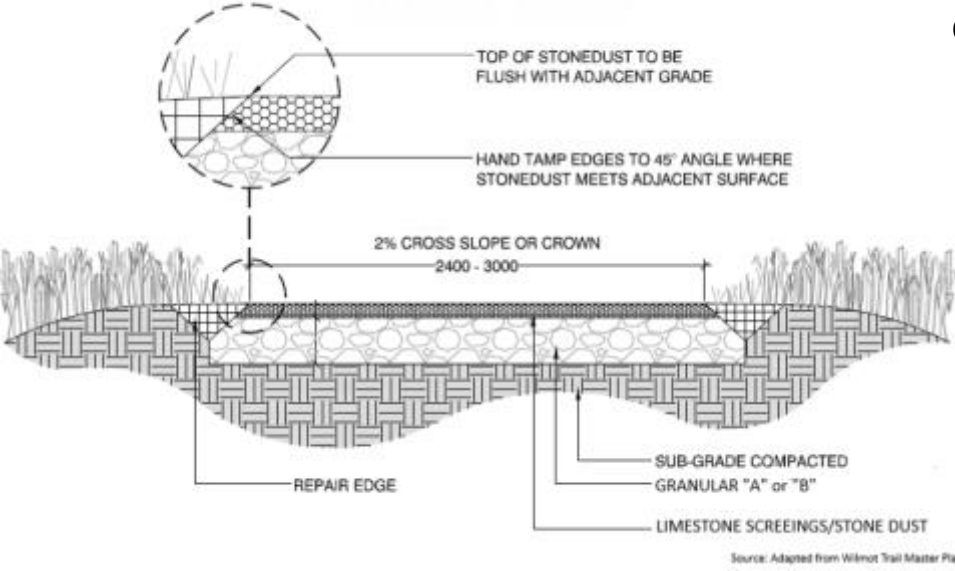

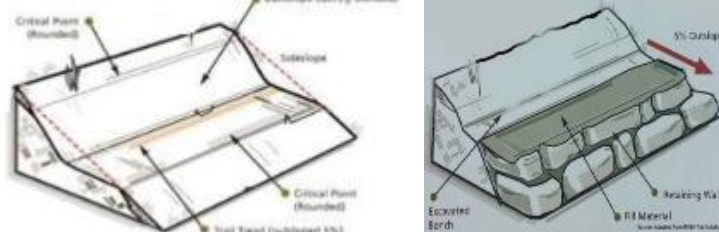


Additional descriptions, noting the general design parameters for proposed trail infrastructure are included on Table 3 on the following page.

Table 3 – Trail Infrastructure

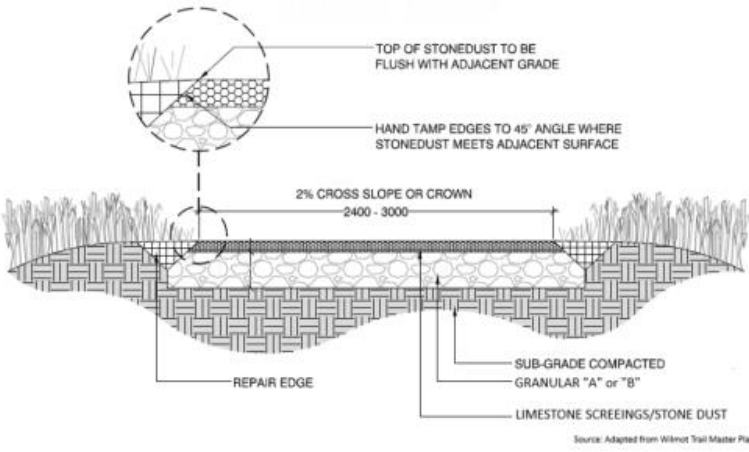



Feature	Description of Infrastructure	Approx. Size / Length of Infrastructure	Design/Material Options
Main Badlands - Viewing and Interpretive Area			
Main Viewing Platform	<ul style="list-style-type: none"><li>1 large platform with distinct viewing/interpretive areas (potentially multi-level); or</li><li>2-3 small viewing platform or ‘pods’ linked by a boardwalk.</li><li>Accessible boardwalks connect north to OBL accessible parking space/sidewalk and south to Type 1 accessible trail (see Trail Type 4).</li><li>1 pavilion on the viewing deck for steward staff and site patrons to view interpretive panels and stay out of inclement weather.</li></ul>	<ul style="list-style-type: none"><li>Viewing deck area of approximately 400 sq. m (based on footprint identified in the 2014 SPL Geotechnical Study).</li><li>Total linear distance of viewing deck approx. 50 lin. M</li><li>Viewing platform pavilion (45 sq. m).</li></ul>	<ul style="list-style-type: none"><li>Natural wood (pressure-treat or cedar) decking and substructure; or</li><li>Engineered plastic wood decking and wood substructure; or</li><li>Fabricated wood/weathered steel/glass structure.</li></ul>


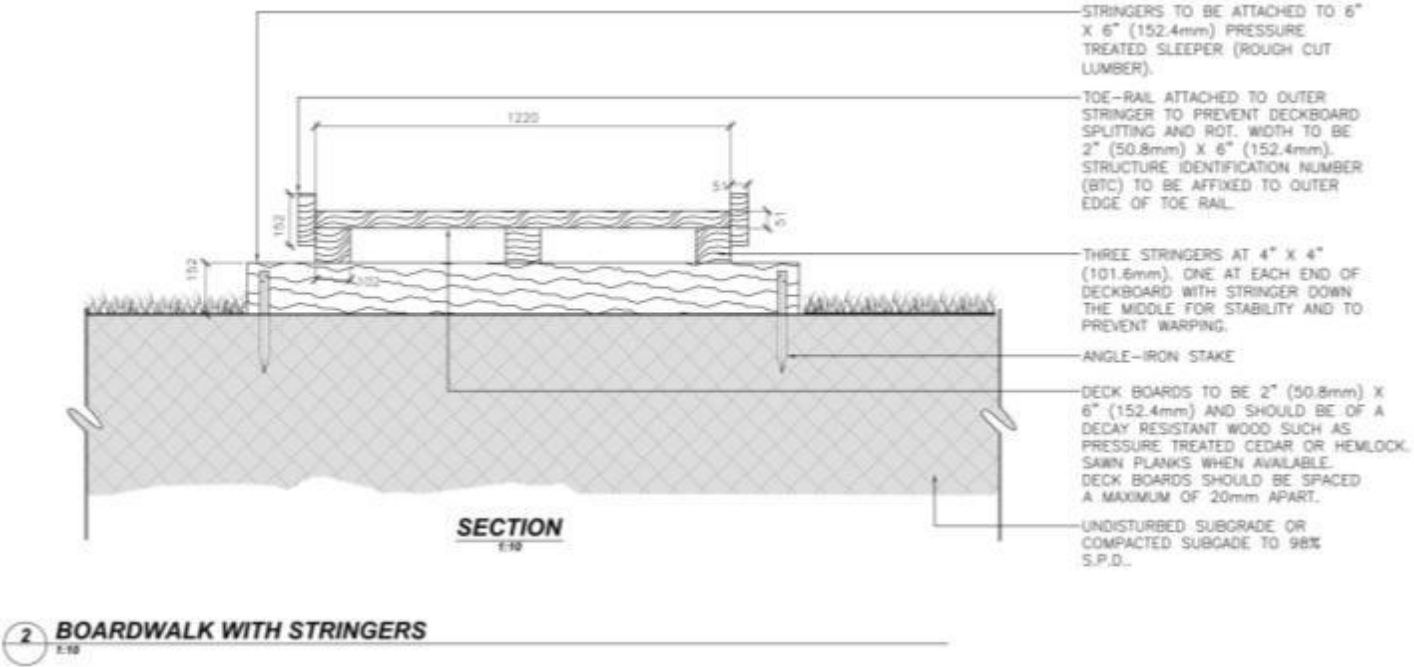




Feature	Description of Infrastructure	Approx. Size / Length of Infrastructure	Design/Material Options
Accessible Trail – Parking Lot to Main Badlands Viewing Area			
Trail Type 1 (accessible, compacted limestone screenings)	<ul style="list-style-type: none"><li>The accessible trail design achieves an average grade of less than 5% to link the Olde Base Line parking lot to the Main Viewing Area. The design meets the “Accessibility Design Guidelines for York Regional Forest Trails” and includes features like fenced edge protection, rest areas (where grades exceed 5%), and benches.</li><li>Infrastructure to include:<ul style="list-style-type: none"><li>Several boardwalk sections over emerging Badlands, gullies and water courses.</li><li>Viewing deck/lookout/interpretive area overlooking the tertiary badlands formation.</li><li>At Olde Baseline Parking Lot, staff kiosk for steward staff to store personal belongings, equipment, stay out of inclement weather.</li></ul></li></ul>	<ul style="list-style-type: none"><li>Approximately 250m of 2 m-3m wide granular surfaced trail (2.5m - 4m clearing width), compacted limestone screenings over compacted crusher run with bonding agent.</li><li>Approximately 93m of boardwalk sections.</li><li>Olde Baseline parking lot staff kiosk (15 sq. m).</li></ul>	<ul style="list-style-type: none"><li>Trail - Includes raised tread, bench cutting, partial bench cutting, switchback turns to achieve an average grade of less than 5%.</li><li>Boardwalks – natural wood (pressure-treat or cedar); or engineered plastic wood; or Fabricated wood/weathered steel/glass structure; or cement.</li><li>Viewing decks/lookout structures –to complement main viewing deck (e.g. natural or engineered plastic wood, or wood/weathered steel combination) (see type 2 trail for example images).</li></ul>
<div><div></div><div><p>Island Lake Staff Kiosk, Orangeville, ON</p></div><div><p>Example of Switchback Turn, Full Bench Cut and Partial Bench Cut</p></div><div><p>Source: Treadscape</p><p>Source: Treadscape</p><p>Example of Boardwalk and Fenced Edge Protection</p></div></div>			



Feature	Description of Infrastructure	Approx. Size / Length of Infrastructure	Design/Material Options
Plateau Trail			
Trail Type 2 (compacted limestone screenings)	<ul style="list-style-type: none"><li>• Compacted limestone screenings surfaced trail on the plateau overlooking the badlands and secondary badlands.</li><li>• Boardwalk sections over wet areas (as needed).</li><li>• Viewing decks/lookouts/interpretive areas overlooking Main Badlands and Secondary Badlands.</li><li>• Interpretation Areas at stone foundation.</li><li>• Areas of this trail type have potential to be an accessible trail, subject to assessment of grades.</li><li>• Protective fence/railing on the feature side of the trail to prevent unwanted access.</li></ul>	<ul style="list-style-type: none"><li>• Approximately 1000m of trail.</li><li>• 7 small viewing decks, approx. 12sq. m each.</li><li>• 1 larger ‘crescent’ shaped viewing deck*, approx. 25 sq. m at the ‘saddle’ area (junction of Main Badlands with Secondary Badlands).</li><li>• Approximately 375m to 400m of protective fence/railing.</li></ul>	<ul style="list-style-type: none"><li>• Trail – New 1m-2m wide trail (2.5m-3m clearing width), compacted limestone screenings over compacted crusher run with bonding agent.</li><li>• Boardwalks – natural wood (pressure-treat or cedar); or engineered plastic wood.</li><li>• Viewing decks/lookout structures –to complement main viewing deck (e.g. natural or engineered plastic wood, or wood/weathered steel combination).</li><li>• Protective fence/railing – may use metal, plastic or wood depending on cost, longevity and desired aesthetics.</li></ul>
<div><div><p>Source: Adapted from Wilnot Trail Master Plan</p></div><div></div><div></div><div></div></div>			

Feature	Description of Infrastructure	Approx. Size / Length of Infrastructure	Design/Material Options
Main Bruce Trail (including parking lot bypass), Plateau Connection Side Trail and Olde Base Line Side Trail			
Trail Type 3 (natural surface – improved boardwalks and creek crossings)	<ul style="list-style-type: none"><li>Upgraded sections of existing Bruce Trail and Olde Base Line Trail.</li><li>Extension of Bruce Trail to connect Olde Base Line Road to main Bruce Trail to bypass the parking lot.</li><li>Newly constructed trail along alignment of former Russell Cooper Side Trail from Bruce Trail to Plateau Trail (Plateau Connection).</li></ul>	<ul style="list-style-type: none"><li>Approximately 1960m of trail.</li></ul>	<ul style="list-style-type: none"><li>Natural surfaced footpaths; minor regrading and/or maintenance to maintain even surface and consistent width.</li><li>Trail re-routes in vicinity of the existing trail corridor will be considered in targeted areas.</li><li>Existing boardwalks and log steps to be replaced or improved as needed (based on a conditions assessment).</li><li>New stairs and creek-crossing structures needed to support increased visitation.</li></ul>
<div><div></div><div></div></div>			



Feature	Description of Infrastructure	Approx. Size / Length of Infrastructure	Design/Material Options
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Main Viewing Area to Plateau Trail & Wetland to Plateau Trail

<p><b>Trail Type 4 (boardwalk or combination trail/ boardwalk with staircase structures)</b></p>	<ul style="list-style-type: none"><li>• Main Badlands Viewing Area to Secondary Plateau Trail – Boardwalk.</li><li>• Wetland to Plateau connections<ul style="list-style-type: none"><li>- Wetland Crossing Boardwalk.</li><li>- Northerly 'Wetland to Plateau' Route – On-grade trail / boardwalk with staircases to access steep portions.</li><li>- Southerly 'Wetland to Plateau' Route - On-grade trail / boardwalk with staircases to access steep portions.</li></ul></li></ul>	<ul style="list-style-type: none"><li>• Main Badlands Viewing Area to Plateau Trail (Trail Type 2) connection - 130 m.</li><li>• Wetland to Plateau connections<ul style="list-style-type: none"><li>- Wetland Crossing - 61m (boardwalk).</li><li>- Northerly 'Wetland to Plateau' Route - 180m.</li><li>- Southerly 'Wetland to Plateau' Route - 90m.</li></ul></li></ul>	<ul style="list-style-type: none"><li>• On-grade trail portions (Trail Type 3).</li><li>• Boardwalks – natural wood (pressure-treat or cedar); or engineered plastic wood decking with wood substructure.</li><li>• Staircase structures – to match viewing structures; subject to geotechnical analysis and engineering design.</li></ul>
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**SECTION - TYPICAL BOARDWALK**  
A4.0 SCALE: 1 : 50

**SECTION - TYPICAL STAIR (GUARD TYPE-1)**  
B A4.0 SCALE: 1 : 50

**Staircases at Hoodoos, Alberta**

**Trollstigen Tourist Route, Norway (two photos)**

## 15.0 PLAN IMPLEMENTATION

### 15.1 Site Development Phasing

The Master Plan for the Cheltenham Badlands will be implemented in phases. The following approach is proposed to implement the final concept, assuming the Master Plan will be approved as submitted. Each phase has certain infrastructure elements grouped together and prioritized to take advantage of economies of scale and to ensure minimal impact with the goal of slowly expanding the infrastructure, if needed, to enhance and support the visitor experience, based on empirical data about the property's visitor numbers and use. The implementation of each phase is directly dependent on the analysis of visitor monitoring results and obtaining necessary funding for these projects. Currently there is no funding earmarked or available for the infrastructure proposed. It is not yet known whether the parking fees will be adequate to fund infrastructure costs after operating and maintenance costs are covered. Any on-site development or site alteration will be made in conformity with all applicable provincial, regional, and local municipal planning policy.

The overall Phasing Plan is illustrated on **Figure 8 (page 84)**.

### Phase 1: Basic Infrastructure Phase (Years 0-2)

(Refer to Figure 9 on page 85)

This phase is governed by the principle of health and safety and increased accessibility. The Badlands will become a good location for healthy recreation for many individuals and to help realize that goal, some infrastructure and trail upgrades are needed to increase safety and improve accessibility in some areas. Although a priority, the implementation of this phase is directly dependent obtaining funding.

This phase of implementing the Master Plan further addresses the principles of health and safety. The elements in this phase need to be grouped in order to achieve the goal of providing basic services that promote health and secure public safety on the site.

- A. Enhanced Accessible Boardwalk: expand on or replace the current boardwalk at the main feature to facilitate visitation and viewing of the main feature.
- B. Enhanced interpretation at main viewing area near boardwalk.
- C. Accessible Trail from parking lot to main badlands feature/boardwalk, including required



infrastructure (boardwalk) to cross creek/ valleys.

- D. Staff shelter and washrooms at main parking lot on Old Base Line Road. These facilities will be barrier-free, as per the Ontario Building Code

### **Phase 2: Expanding Visitorship (Years 2-5)**

**(Refer to Figure 10 on page 86)**

This phase is governed by the principle of improved visitor experience. The improvements A-F proposed for this phase below build on phase 1 and further expand the capacity of the site to include more visitors and improve their experience at the site.

This phase focuses on expanding trails and infrastructure such as the main badlands viewing area, boardwalks and signage to accommodate additional visitors based on visitor monitoring from three seasons. This phase will require additional fundraising and extensive analysis of visitor flow and popularity of the site to justify the additional opening and establishing of new trails.

- A. Extension of accessible boardwalk to plateau trail.
- B. Interior plateau trail and viewing portals.
- C. Wetland to plateau trail and boardwalks, stairs and bridges.

- D. Improvements to maintenance road area; widen part of trail for all-terrain-vehicle access to complete trail maintenance, install signs, install proper lockable gate (to address health and safety).

- E. Trail segment to, and interpretation of, stone ruins.

- F. Expansion/ enhancement of main badlands viewing area by adding a pavilion/shelter and interpretive elements.

### **Phase 3: Maximizing Visitor Experience (Years 5-10)**

**(Refer to Figure 11 on page 87)**

This phase is governed by the principle of improved visitor experience. The improvements A-B proposed for this phase below build on phase 2 and further expand the capacity of the site to facilitate large numbers of visitors while improving their experience at the site.

The implementation of this phase is dependent on long-term visitation monitoring results and obtaining funding for these projects. If deemed necessary, this phase will focus on providing additional parking and visitor staging areas to accommodate the growing visitation at the site.

- A. Build Creditview parking lot with commercial-sized bus bays and bicycle parking.
- B. Install wayfinding/interpretive signage at trailhead. Include opportunity for new trail map

kiosk to accommodate brochures/ trail information materials.

C. Staff shelter and washrooms at main parking lot on Creditview Road. These facilities will be barrier-free, as per the Ontario Building Code.

D. Create picnic and recreational area adjacent to parking lot on Creditview Road.

## 15.2 Development Permit Process

Section 41 of Ontario Regulation 828/90 states that development permits in Parks and Open Space Systems are exempted if:

*“The construction of buildings, structures, facilities and related undertakings identified in a Parks and Open Space Plan as defined in the Niagara Escarpment Plan for a park or open space area listed in Appendix 1 of the Niagara Escarpment Plan if:*

- (i) *The plan has been approved by the Niagara Escarpment Commission and Ministry of Natural Resources under Part 3 of the Niagara Escarpment Plan after coming into force of Regulation 423/13 (after January 1, 2013);*
- (ii) *The plan has specifically identified and detailed the buildings, structures, facilities and related*

*undertakings that are to be exempted under this section.*

- (iii) *The construction and installation of buildings, structures and facilities and related undertakings occurs within 5 years of the approval of the master plan under subparagraph i.”*

The Ontario Heritage Trust will consult with the NEC to determine permitting requirements, if any, resulting from the Master Plan.

Depending on the location and component of the Master Plan, a permit for activities with conditions to achieve overall benefit to species at risk may be needed from the MNRF. Under Ontario Regulation 230/08 of the Endangered Species Act, 2007 (ESA), habitat protection is granted under subsection 10(1)(a) for Threatened and Endangered species.

Any works proposed in areas regulated by the property manager will be reviewed by appropriate staff through their internal review process and approved by Ontario Heritage Trust staff.

During the Master Plan creation, a development permit was coordinated for all work conducted in 2017 and 2018. These works are discussed in Section 8.2. Additionally, certain approvals will still need to be

obtained from the appropriate agencies as shown in **Table B-1** in **Appendix B**. (X indicating approval required). The table also sets out the master plan components that are exempted from the development permit process based on discussions with NEC.

### 15.3 Monitoring, Review and Evaluation

#### 15.3.1 Environmental Monitoring

Monitoring of species being protected will be a necessary component of the master plan. Monitoring will follow an adaptive management approach.

The possible establishment/ expansion of rare species populations within the property, following relevant recovery plans, shall be considered, where habitat conditions are appropriate. Efforts will be made to ensure that rare vegetation, especially herbaceous plants, is protected from visitor impacts. These areas will be monitored using an adaptive management strategy to ensure they continue in good health.

#### 15.3.2 Plan Review

Ongoing planning and design to support implementation and periodic collection of data is recommended to inform adaptive management at the site. For example:

#### Annual Review

- Impact monitoring (e.g., visitor impacts, erosion processes, any work conducted on invasive species management) and adjustment of monitoring practices;
- Identification of trail maintenance/upkeep needs;
- Collection of visitation numbers, and monitoring of parking lot usage;
- Review/ adjustment of capital/ operational budget (in association with Ontario Heritage Trust / The property manager annual budget process);
- Planning/ design for upcoming phases/ projects to inform capital budget.

#### 5-Year Review

- Internal plan review/ update;
- Identification/ evaluation of new issues, changing priorities;
- Identification of infrastructure maintenance/ improvements;
- Assessment of visitation impacts, and corresponding response (e.g., seasonal trail closures, caps on visitor numbers, etc.).
- reducing the environmental impact of necessary infrastructure.



Figure 8: Phasing Plan (Overall)

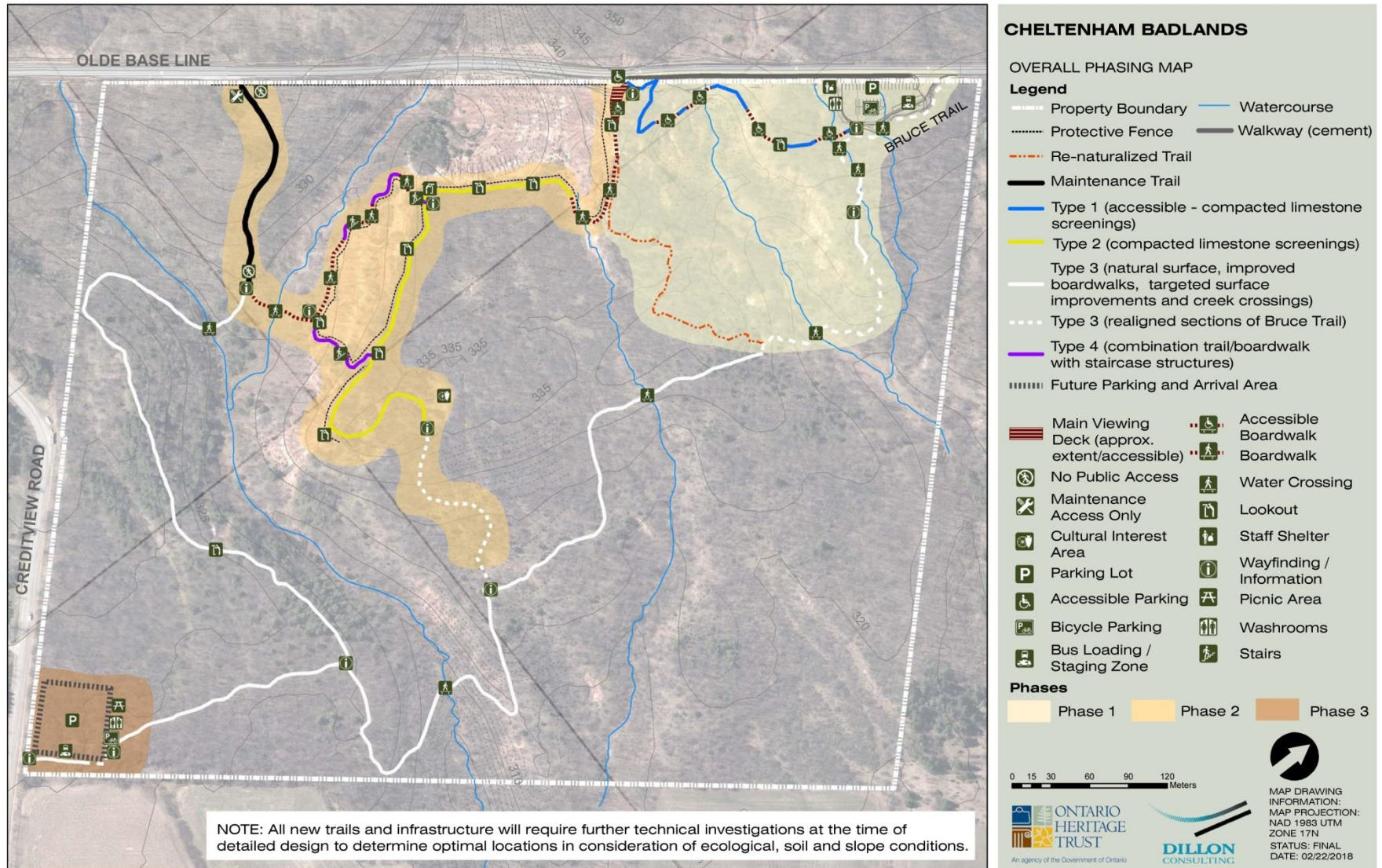




Figure 9: Phase 1

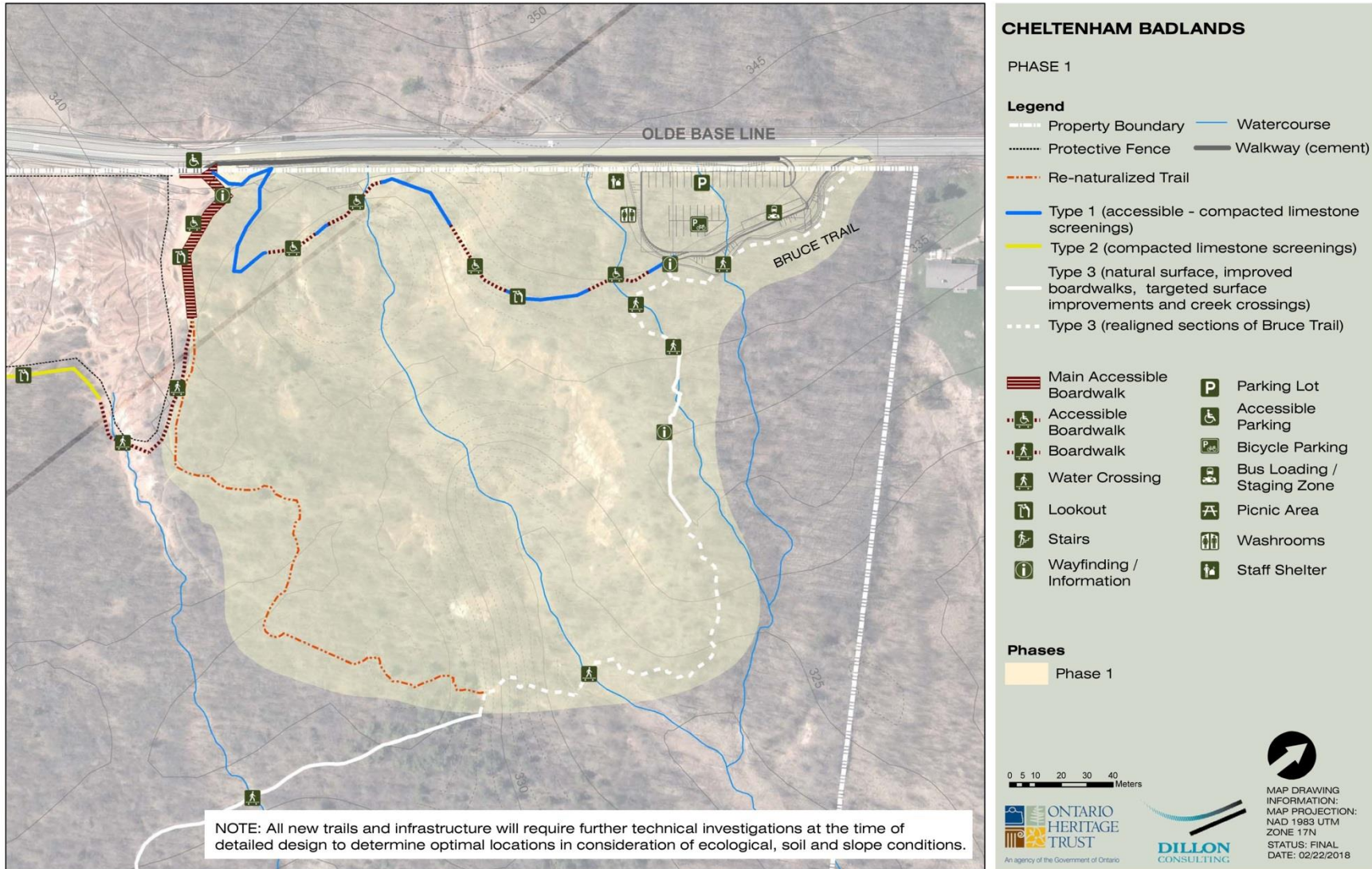




Figure 10: Phase 2

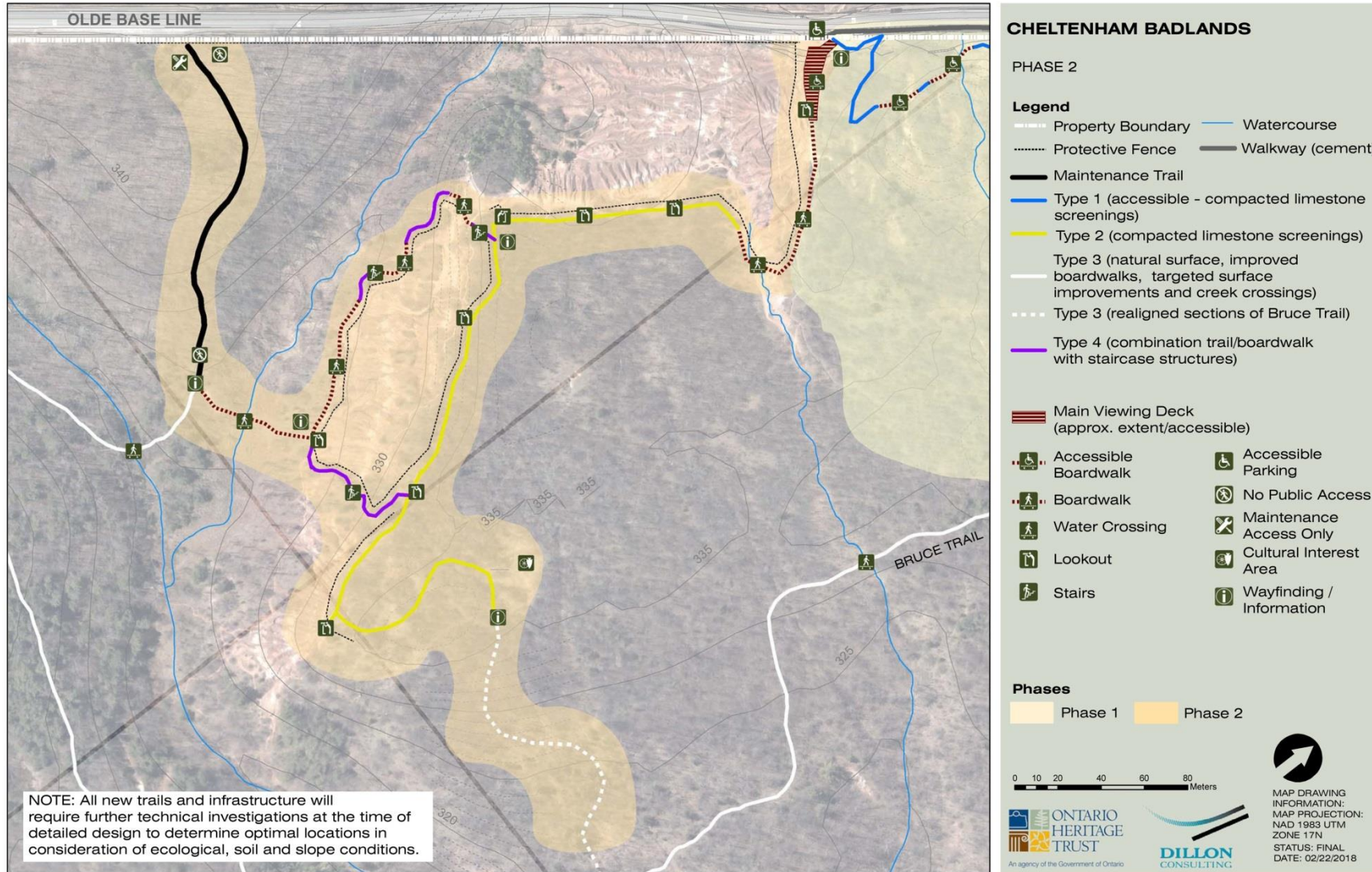
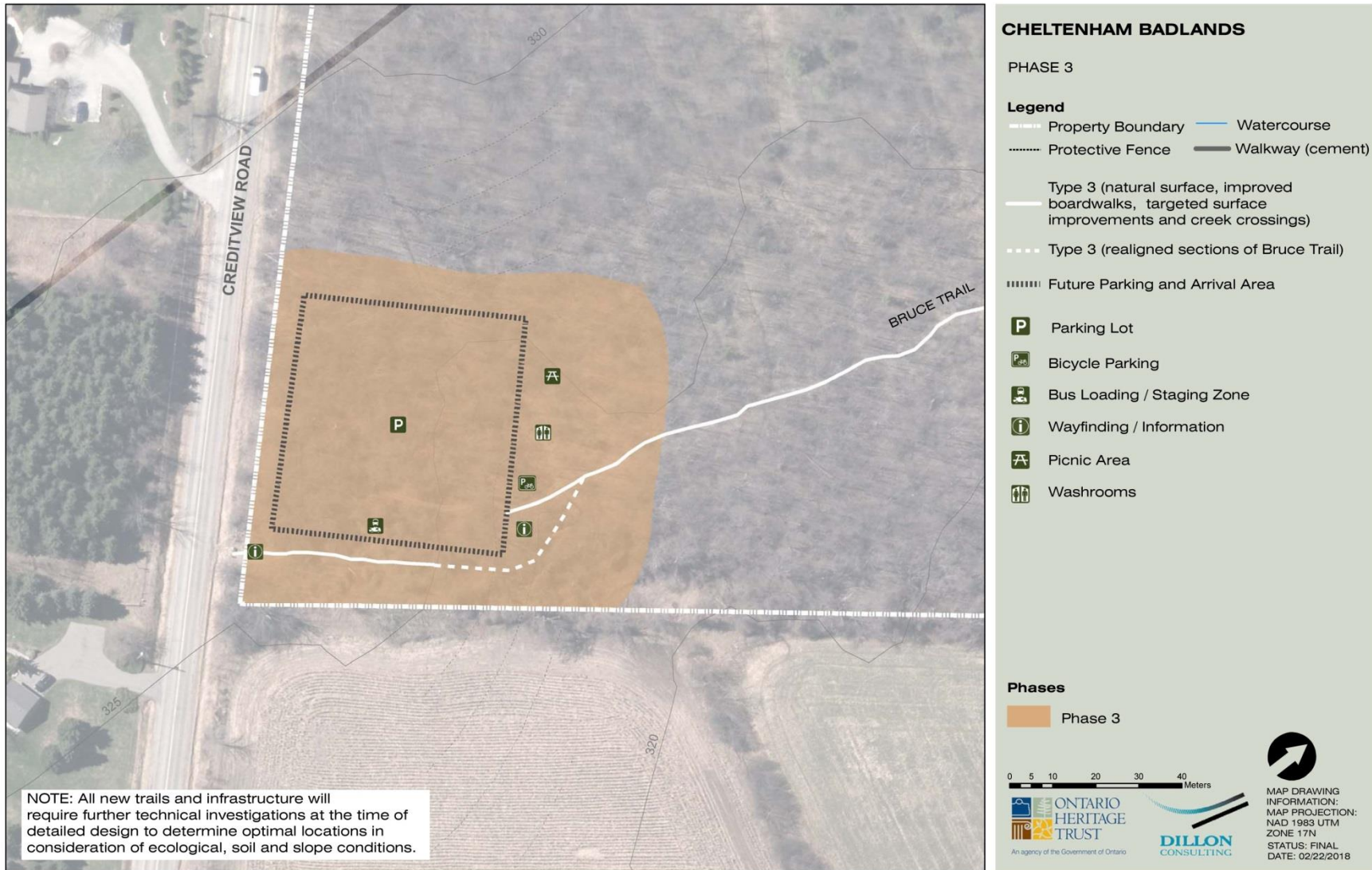


Figure 11: Phase 3





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## APPENDICES

### Appendix A: Background Analysis and Mapping

**Table A-1 Species list contains all known species on property, from the Cheltenham Badlands Management Planning Background Information, Bruce Trail Conservancy, October 2012.**

Scientific name	Common Name	COSEWIC	S-Rank	Family
<i>Acer saccharinum</i>	Silver Maple		S5	Aceraceae
<i>Acer saccharum</i> var. <i>saccharum</i>	Sugar Maple		S5	Aceraceae
<i>Achillea millefolium</i>	Yarrow		S5	Asteraceae
<i>Ageratina altissima</i>	White Snakeroot		S5	Asteraceae
<i>Agrimonia gryposepala</i>	Tall Hairy Groovebur		S5	Rosaceae
<i>Agrostis gigantea</i>	Redtop		SNA	Poaceae
<i>Agrostis stolonifera</i>	Creeping Bentgrass		S5	Poaceae
<i>Alliaria petiolata</i>	Garlic Mustard		SNA	Brassicaceae
<i>Ambrosia artemisiifolia</i>	Annual Ragweed		S5	Asteraceae
<i>Amelanchier arborea</i>	Downy Serviceberry		S5	Rosaceae
<i>Amelanchier laevis</i>	Smooth Serviceberry		S5	Rosaceae
<i>Anemone virginiana</i> var. <i>virginiana</i>	Virginia Anemone		S5	Ranunculaceae
<i>Antennaria neglecta</i>	Field Pussytoes		S5	Asteraceae
<i>Apocynum cannabinum</i>	Indian Hemp		S5	Apocynaceae
<i>Aquilegia canadensis</i>	Wild Columbine		S5	Ranunculaceae
<i>Arctium lappa</i>	Greater Burdock		SNA	Asteraceae
<i>Arctium minus</i>	Lesser Burdock		SNA	Asteraceae
<i>Arisaema triphyllum</i>	Jack-in-the-pulpit		S5	Araceae
<i>Asclepias syriaca</i>	Common Milkweed		S5	Asclepiadaceae
<i>Asparagus officinalis</i>	Garden Asparagus-fern		SNA	Liliaceae
<i>Athyrium filix-femina</i> var. <i>angustum</i>	Lady Fern		S5	Dryopteridaceae
<i>Barbarea vulgaris</i>	Yellow Rocket		SNA	Brassicaceae
<i>Betula papyrifera</i>	Paper Birch		S5	Betulaceae
<i>Bidens frondosa</i>	Devil's Beggar-ticks		S5	Asteraceae
<i>Bromus inermis</i>	Awnless Brome		SNA	Poaceae
<i>Caltha palustris</i>	Marsh Marigold		S5	Ranunculaceae
<i>Cardamine diphylla</i>	Two-leaf Toothwort		S5	Brassicaceae
<i>Cardamine pensylvanica</i>	Pennsylvania Bitter- cress		S5	Brassicaceae
<i>Carex aurea</i>	Golden-fruited Sedge		S5	Cyperaceae
<i>Carex bebbii</i>	Bebb's Sedge		S5	Cyperaceae
<i>Carex blanda</i>	Woodland Sedge		S5	Cyperaceae
<i>Carex communis</i>	Fibrous-root Sedge		S5	Cyperaceae
<i>Carex cristatella</i>	Crested Sedge		S5	Cyperaceae
<b>Carex flava</b>	<b>Yellow Sedge</b>		<b>S5</b>	<b>Cyperaceae</b>



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<i>Carex gracillima</i>	Graceful Sedge		S5	Cyperaceae
Scientific name	Common Name	COSEWIC	S-Rank	Family
<i>Carex granularis</i>	Meadow Sedge		S5	Cyperaceae
<i>Carex hitchcockiana</i>	Hitchcock's Sedge		<b>S5</b>	<b>Cyperaceae</b>
<i>Carex hystericina</i>	Porcupine Sedge		S5	Cyperaceae
<i>Carex laxiflora</i>	Loose-flowered Sedge		<b>S5</b>	<b>Cyperaceae</b>
<i>Carex pensylvanica</i>	Pennsylvania Sedge		S5	Cyperaceae
<i>Carex radiata</i>	Stellate Sedge		S4	Cyperaceae
<i>Carex retrorsa</i>	Retorse Sedge		S5	Cyperaceae
<i>Carex rosea</i>	Rosy Sedge		S5	Cyperaceae
<i>Carex spicata</i>	A Sedge		SNA	Cyperaceae
<i>Carex stipata</i>	Stalk-grain Sedge		S5	Cyperaceae
<i>Carex vulpinoidea</i>	Fox Sedge		S5	Cyperaceae
<i>Carya cordiformis</i>	Bitter-nut Hickory		S5	Juglandaceae
<i>Carya ovata</i>	Shag-bark Hickory		S5	Juglandaceae
<i>Caulophyllum giganteum</i>	Giant Blue Cohosh		<b>S4?</b>	<b>Berberidaceae</b>
<i>Caulophyllum thalictroides</i>	Blue Cohosh		S5	Berberidaceae
<i>Cerastium fontanum</i>	Common Mouse-ear Chickweed		SNA	Caryophyllaceae
<i>Cichorium intybus</i>	Chicory		SNA	Asteraceae
<i>Circaea canadensis</i>	Broad-leaved Enchanter's Nightshade		S5	Onagraceae
<i>Cirsium arvense</i>	Canada Thistle		SNA	Asteraceae
<i>Cirsium vulgare</i>	Bull Thistle		SNA	Asteraceae
<i>Clinopodium vulgare</i>	Field Basil		S5	Lamiaceae
<i>Convallaria majalis</i>	European Lily-of-the-valley		SNA	Liliaceae
<i>Conyza canadensis</i>	Fleabane		S5	Asteraceae
<i>Cornus alternifolia</i>	Alternate-leaf Dogwood		S5	Cornaceae
<i>Cornus amomum</i>	Silky Dogwood		<b>S5</b>	<b>Cornaceae</b>
<i>Cornus sericea</i>	Red-osier Dogwood		S5	Cornaceae
<i>Crataegus mollis</i>	Downy Hawthorn		S5	Rosaceae
<i>Crataegus monogyna</i>	English Hawthorn		SNA	Rosaceae
<i>Cynanchum rossicum</i>	European Swallow-wort		SNA	Asclepiadaceae
<i>Dactylis glomerata</i>	Orchard Grass		SNA	Poaceae
<i>Danthonia spicata</i>	Poverty Oatgrass		S5	Poaceae
<i>Daucus carota</i>	Wild Carrot		SNA	Apiaceae
<i>Dianthus armeria</i>	Deptford-pink		SNA	Caryophyllaceae
<i>Digitalis grandiflora</i>	Yellow Foxglove		SNA	Scrophulariaceae
<i>Dipsacus sylvestris</i>	Common Teasal		SNA	Asteraceae
<i>Dryopteris carthusiana</i>	Spinulose Shield Fern		S5	Dryopteridaceae
<i>Dryopteris marginalis</i>	Marginal Wood-fern		S5	Dryopteridaceae
<i>Eleocharis erythropoda</i>	Bald Spikerush		S5	Cyperaceae

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<i>Elymus virginicus</i> var. <i>virginicus</i>	Virginia Wild Rye		S5	Poaceae
Scientific name	Common Name	COSEWIC	S-Rank	Family
<i>Epifagus virginiana</i>	Beechdrops		S5	Orobanchaceae
<i>Epilobium hirsutum</i>	Great-hairy Willow-herb		SNA	Onagraceae
<i>Epilobium parviflorum</i>	Small-flower Willow- herb		SNA	Onagraceae
<i>Epipactis helleborine</i>	Eastern Helleborine		SNA	Orchidaceae
<i>Equisetum pratense</i>	Meadow Horsetail		S5	Equisetaceae
<i>Erigeron annuus</i>	White-top Fleabane		S5	Asteraceae
<i>Erigeron philadelphicus</i>	Philadelphia Fleabane		S5	Asteraceae
<i>Erigeron strigosus</i>	Daisy Fleabane		S5	Asteraceae
<i>Erysimum cheiranthoides</i>	Worm-seed Mustard		SNA	Brassicaceae
<i>Erythronium americanum</i>	Yellow Trout-lily		S5	Liliaceae
<i>Eupatorium perfoliatum</i>	Common Boneset		S5	Asteraceae
<i>Eurybia macrophylla</i>	Large-leaf Wood-aster		S5	Asteraceae
<i>Euthamia graminifolia</i>	Flat-top Fragrant- golden-rod		S5	Asteraceae
<i>Eutrochium maculatum</i> var. <i>maculatum</i>	Spotted Joe-pye Weed		S5	Asteraceae
<i>Fagus grandifolia</i>	American Beech		S4	Fagaceae
<i>Festuca arundinacea</i>	Tall fescue		SNA	Poaceae
<i>Festuca pratensis</i>	Meadow Fescue		SNA	Poaceae
<i>Fragaria vesca</i>	Woodland Strawberry		S5	Rosaceae
<i>Fragaria virginiana</i>	Virginia Strawberry		S5	Rosaceae
<i>Fraxinus americana</i>	White Ash		S4?	Oleaceae
<i>Fraxinus pennsylvanica</i>	Green Ash		S5	Oleaceae
<b>Galium aparine</b>	<b>Catchweed Bedstraw</b>		<b>S5</b>	<b>Rubiaceae</b>
<i>Galium triflorum</i>	Sweet-scent Bedstraw		S5	Rubiaceae
<i>Geranium robertianum</i>	Herb-robert		SNA	Geraniaceae
<i>Geum aleppicum</i>	Yellow Avens		S5	Rosaceae
<i>Geum canadense</i>	White Avens		S5	Rosaceae
<i>Geum fragarioides</i>	Barren Strawberry		S5	Rosaceae
<i>Geum laciniatum</i>	Rough Avens		S4	Rosaceae
<i>Glyceria grandis</i>	American Mannagrass		S4S5	Poaceae
<i>Glyceria striata</i>	Fowl Manna-grass		S5	Poaceae
<i>Grindelia squarrosa</i>	Broadleaf Gumweed		SNA	Asteraceae
<i>Hamamelis virginiana</i>	American Witch-hazel		S5	Hamamelidaceae
<i>Hesperis matronalis</i>	Dame's Rocket		SNA	Brassicaceae
<i>Hieracium lachenalii</i>	Common Hawkweed		SNA	Asteraceae
<i>Hydrophyllum virginianum</i>	John's Cabbage		S5	Hydrophyllaceae
<i>Hypericum perforatum</i>	Common St. John's- wort		SNA	Clusiaceae
<i>Impatiens capensis</i>	Spotted Jewel-weed		S5	Balsaminaceae
<i>Inula helenium</i>	Elecampane Flower		SNA	Asteraceae

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<i>Juglans cinerea</i>	Butternut	END	S3?	Juglandaceae
<i>Juglans nigra</i>	Black Walnut		S4	Juglandaceae
Scientific name	Common Name	COSEWIC	S-Rank	Family
<i>Juncus articulatus</i>	Jointed Rush		S5	Juncaceae
<i>Juncus canadensis</i>	Canada Rush		S5	Juncaceae
<i>Juncus dudleyi</i>	Dudley's Rush		S5	Juncaceae
<i>Juncus effusus</i>	Soft Rush		S5	Juncaceae
<i>Juncus nodosus</i>	Knotted Rush		S5	Juncaceae
<i>Juncus tenuis</i>	Path Rush		S5	Juncaceae
<i>Juniperus virginiana</i>	Eastern Red Cedar		S5	Cupressaceae
<i>Lactuca canadensis</i>	Canada Lettuce		S5	Asteraceae
<i>Lactuca serriola</i>	Prickly Lettuce		SNA	Asteraceae
<i>Lapsana communis</i>	Common Nipplewort		SNA	Asteraceae
<i>Leersia oryzoides</i>	Rice Cutgrass		S5	Poaceae
<i>Leonurus cardiaca</i>	Common Mother-wort		SNA	Lamiaceae
<i>Leucanthemum vulgare</i>	Oxeye Daisy		SNA	Asteraceae
<i>Lithospermum officinale</i>	European Gromwell		SNA	Boraginaceae
<i>Lonicera tatarica</i>	Tartarian Honeysuckle		SNA	Caprifoliaceae
<i>Lotus corniculatus</i>	Birds-foot Trefoil		SNA	Fabaceae
<i>Lycopus americanus</i>	American Bugleweed		S5	Lamiaceae
<i>Lycopus uniflorus</i>	Northern Bugleweed		S5	Lamiaceae
<i>Lysimachia ciliata</i>	Fringed Loosestrife		S5	Primulaceae
<i>Lysimachia quadrifolia</i>	Whorled Loosestrife		S4	Primulaceae
<i>Lysimachia thyrsiflora</i>	Water Loosestrife		S5	Primulaceae
<i>Lythrum salicaria</i>	Purple Loosestrife		SNA	Lythraceae
<i>Maianthemum canadense</i>	Wild-lily-of-the-valley		S5	Liliaceae
<i>Maianthemum racemosum</i>	False Solomon's-seal		S5	Liliaceae
<i>Malus pumila</i>	Common Apple		SNA	Rosaceae
<i>Matteuccia struthiopteris</i>	Ostrich Fern		S5	Dryopteridaceae
<i>Medicago lupulina</i>	Black Medic		SNA	Fabaceae
<i>Melilotus albus</i>	White Sweet Clover		SNA	Fabaceae
<i>Melilotus altissimus</i>	Tall Yellow Sweetclover		SNA	Fabaceae
<i>Mentha arvensis</i>	Corn Mint		S5	Lamiaceae
<i>Myosotis laxa</i>	Small Forget-me-not		S5	Boraginaceae
<i>Myosotis scorpioides</i>	True Forget-me-not		SNA	Boraginaceae
<i>Nasturtium microphyllum</i>	One-row Water-cress		SNA	Brassicaceae
<i>Nasturtium officinale</i>	True Watercress		SNA	Brassicaceae
<i>Oenothera biennis</i>	Common Evening-primrose		S5	Onagraceae
<i>Oenothera pilosella</i>	Prairie Sundrops		S2	Onagraceae
<i>Onoclea sensibilis</i>	Sensitive Fern		S5	Dryopteridaceae

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<i>Oryzopsis asperifolia</i>	White-grained Mountain-ricegrass		S5	Poaceae
<i>Ostrya virginiana</i>	Eastern Hop-hornbeam		S5	Betulaceae
Scientific name	Common Name	COSEWIC	S-Rank	Family
<i>Parthenocissus inserta</i>	Virginia Creeper		S5	Vitaceae
<i>Persicaria amphibia</i>	Water Smartweed		S5	Polygonaceae
<i>Persicaria hydropiperoides</i>	Mild Water-pepper		S5	Polygonaceae
<i>Persicaria maculosa</i>	Lady's Thumb		SNA	Polygonaceae
<i>Phalaris arundinacea</i>	Reed Canary Grass		S5	Poaceae
<i>Phleum pratense</i>	Meadow Timothy		SNA	Poaceae
<i>Phragmites australis ssp. australis</i>	European Reed		SNA	Poaceae
<i>Picea glauca</i>	White Spruce		S5	Pinaceae
<i>Pilosella aurantiaca</i>	Orange Hawkweed		SNA	Asteraceae
<i>Pilosella officinarum</i>	Mouseear		SNA	Asteraceae
<i>Pinus resinosa</i>	Red Pine		S5	Pinaceae
<i>Pinus strobus</i>	Eastern White Pine		S5	Pinaceae
<i>Pinus sylvestris</i>	Scotch Pine		SNA	Pinaceae
<i>Plantago lanceolata</i>	English Plantain		SNA	Plantaginaceae
<i>Plantago major</i>	Nipple-seed Plantain		S5	Plantaginaceae
<i>Platanthera aquilonis</i>	Leafy Northern Green Orchid		S5	Orchidaceae
<i>Poa compressa</i>	Canada Bluegrass		SNA	Poaceae
<i>Poa nemoralis</i>	Woods Bluegrass		SNA	Poaceae
<i>Poa pratensis ssp. pratensis</i>	Kentucky Bluegrass		S5	Poaceae
<i>Populus balsamifera</i>	Balsam Poplar		S5	Salicaceae
<i>Populus grandidentata</i>	Large-tooth Aspen		S5	Salicaceae
<i>Populus tremuloides</i>	Trembling Aspen		S5	Salicaceae
<i>Potentilla recta</i>	Sulphur Cinquefoil		SNA	Rosaceae
<i>Prunella vulgaris ssp. lanceolata</i>	Self-heal		S5	Lamiaceae
<i>Prunus avium</i>	Sweet Cherry		SNA	Rosaceae
<i>Prunus serotina</i>	Wild Black Cherry		S5	Rosaceae
<i>Prunus virginiana</i>	Choke Cherry		S5	Rosaceae
<i>Pyrus communis</i>	Common Pear		SNA	Rosaceae
<i>Quercus alba</i>	White Oak		S5	Fagaceae
<i>Quercus rubra</i>	Northern Red Oak		S5	Fagaceae
<i>Ranunculus abortivus</i>	Kidney-leaved Buttercup		S5	Ranunculaceae
<i>Ranunculus acris</i>	Tall Butter-cup		SNA	Ranunculaceae
<i>Ranunculus recurvatus</i>	Hooked Crowfoot		S5	Ranunculaceae
<i>Rhamnus cathartica</i>	Buckthorn		SNA	Rhamnaceae
<i>Rhus typhina</i>	Staghorn Sumac		S5	Anacardiaceae
<i>Ribes cynosbati</i>	Prickly Gooseberry		S5	Grossulariaceae



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<i>Ribes americanum</i>	Wild Black Currant		S5	Grossulariaceae
<i>Ribes triste</i>	Swamp Red Currant		S5	Grossulariaceae
<i>Robinia pseudoacacia</i>	Black Locust		SNA	Fabaceae
Scientific name	Common Name	COSEWIC	S-Rank	Family
<i>Rosa blanda</i>	Smooth Rose		S5	Rosaceae
<i>Rosa rubiginosa</i>	Sweet Briar		SNA	Rosaceae
<i>Rubus allegheniensis</i>	Allegheny Blackberry		S5	Rosaceae
<i>Rubus idaeus ssp. strigosus</i>	Wild Red Raspberry		S5	Rosaceae
<i>Rubus occidentalis</i>	Black Raspberry		S5	Rosaceae
<i>Rubus odoratus</i>	Purple Flowering Raspberry		S5	Rosaceae
<i>Rumex crispus</i>	Curly Dock		SNA	Polygonaceae
<i>Salix alba</i>	White Willow		SNA	Salicaceae
<i>Salix amygdaloides</i>	Peach-leaved Willow		S5	Salicaceae
<i>Salix bebbiana</i>	Bebb's Willow		S5	Salicaceae
<i>Salix discolor</i>	Pussy Willow		S5	Salicaceae
<i>Salix eriocephala</i>	Heart-leaved Willow		S5	Salicaceae
<i>Salix fragilis</i>	Crack Willow		S5	Salicaceae
<i>Salix nigra</i>	Black Willow		S4?	Salicaceae
<i>Schoenoplectus tabernaemontani</i>	Soft-stem Club-rush		S5	Cyperaceae
<i>Scirpus atrovirens</i>	Dark-green Bulrush		S5	Cyperaceae
<i>Scirpus microcarpus</i>	Red-tinge Bulrush		S5	Cyperaceae
<i>Sisyrinchium montanum</i>	Strict Blue-eyed-grass		S5	Iridaceae
<i>Solanum dulcamara</i>	Climbing Nightshade		SNA	Solanaceae
<i>Solidago altissima ssp. Altissima</i>	Tall Goldenrod		S5	Asteraceae
<i>Solidago caesia</i>	Blue-stemmed Goldenrod		S5	Asteraceae
<i>Solidago canadensis var. canadensis</i>	Canada Goldenrod		S5	Asteraceae
<i>Solidago flexicaulis</i>	Broad-leaved Goldenrod		S5	Asteraceae
<i>Solidago nemoralis var. nemoralis</i>	Gray Goldenrod		S5	Asteraceae
<i>Sonchus asper</i>	Spiny-leaf Sowthistle		SNA	Asteraceae
<i>Sonchus oleraceus</i>	Common Sowthistle		SNA	Asteraceae
<i>Sorbus aucuparia</i>	European Mountain- ash		SNA	Rosaceae
<i>Stellaria graminea</i>	Little Starwort		SNA	Caryophyllaceae
<i>Symphyotrichum cordifolium</i>	Heart-leaf Aster		S5	Asteraceae
<i>Symphyotrichum ericoides var. ericoides</i>	White Heath Aster		S5	Asteraceae
<i>Symphyotrichum lanceolatum ssp. lanceolatum</i>	Panicked Aster		S5	Asteraceae
<i>Symphyotrichum lateriflorum</i>	Calico Aster		S5	Asteraceae
<i>Symphyotrichum novae- angliae</i>	New England Aster		S5	Asteraceae
<i>Symphyotrichum pilosum var. pilosum</i>	White Heath Aster		S5	Asteraceae
<i>Symphyotrichum puniceum</i>	Swamp Aster		S5	Asteraceae
<i>Taraxacum officinale</i>	Brown-seed Dandelion		SNA	Asteraceae

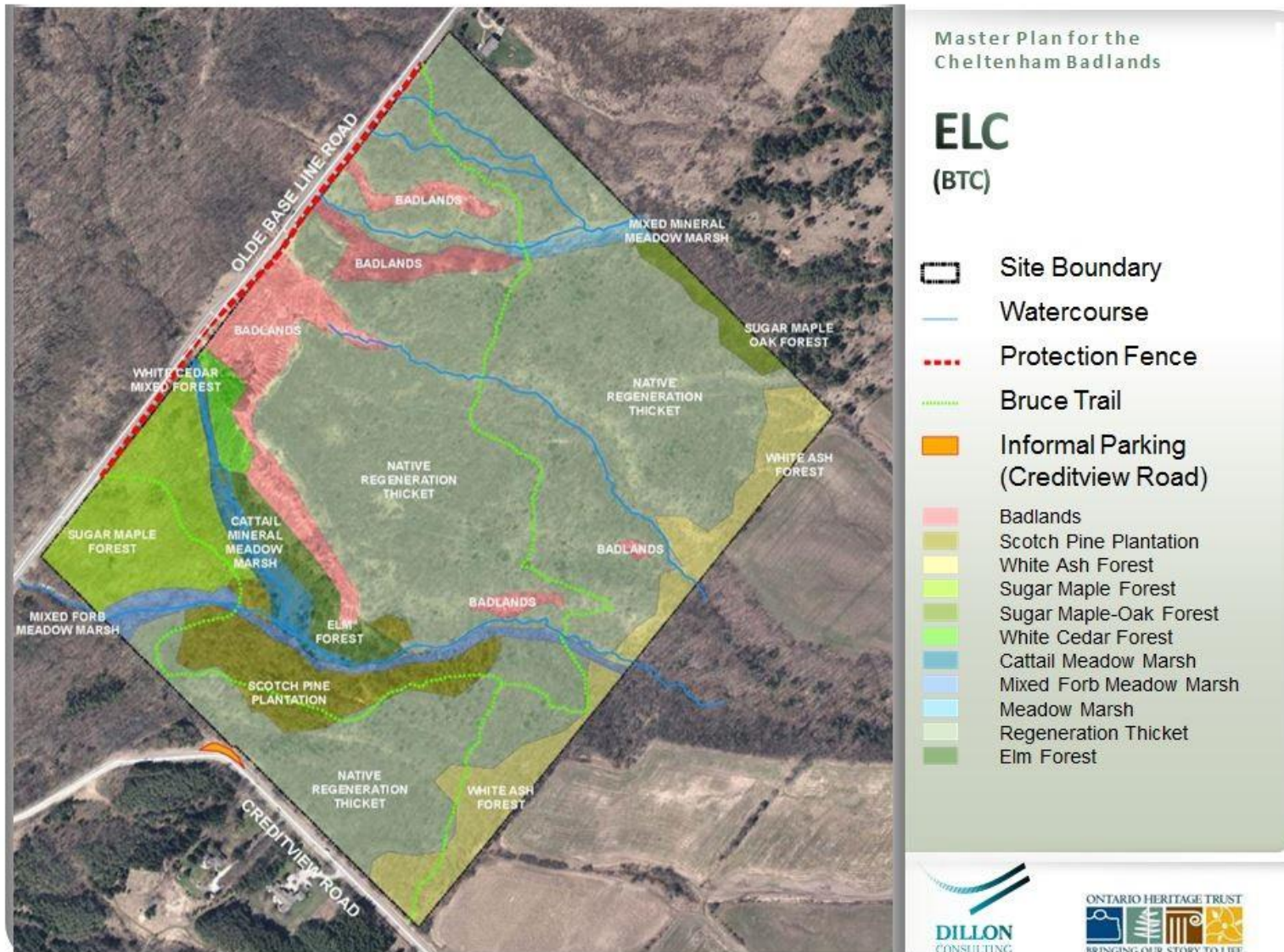
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<i>Teucrium canadense</i>	American Germander		S5	Lamiaceae
<i>Thalictrum dioicum</i>	Early Meadowrue		S5	Ranunculaceae
<i>Thuja occidentalis</i>	Eastern White Cedar		S5	Cupressaceae
Scientific name	Common Name	COSEWIC	S-Rank	Family
<i>Tilia americana</i>	American Basswood		S5	Tiliaceae
<i>Toxicodendron rydbergii</i>	Rydberg's Poison Ivy		S5	Anacardiaceae
<i>Tragopogon dubius</i>	Meadow Goat's-beard		SNA	Asteraceae
<i>Tragopogon pratensis</i>	Meadow Goat's-beard		SNA	Asteraceae
<i>Trifolium aureum</i>	Yellow Clover		SNA	Fabaceae
<i>Trifolium pratense</i>	Red Clover		SNA	Fabaceae
<i>Trifolium repens</i>	White Clover		SNA	Fabaceae
<i>Trillium grandiflorum</i>	White Trillium		S5	Liliaceae
<i>Tsuga canadensis</i>	Eastern Hemlock		S5	Pinaceae
<i>Tussilago farfara</i>	Colt's Foot		SNA	Asteraceae
<i>Typha angustifolia</i>	Narrow-leaved Cattail		SNA	Typhaceae
<i>Typha latifolia</i>	Broad-leaf Cattail		S5	Typhaceae
<i>Ulmus americana</i>	American Elm		S5	Ulmaceae
<i>Ulmus thomasii</i>	Rock Elm		S4?	Ulmaceae
<i>Urtica dioica</i> ssp. <i>dioica</i>	Stinging Nettle		SNA	Urticaceae
<i>Veronica americana</i>	American Speedwell		S5	Scrophulariaceae
<i>Veronica officinalis</i>	Gypsy-weed		SNA	Scrophulariaceae
<i>Veronica peregrina</i> ssp. <i>peregrina</i>	Purslane Speedwell		S5	Scrophulariaceae
<i>Veronica serpyllifolia</i>	Thyme-leaved Speedwell		SNA	Scrophulariaceae
<i>Viburnum opulus</i>	European Highbush Cranberry		SE4	Caprifoliaceae
<i>Viburnum lentago</i>	Nannyberry		S5	Caprifoliaceae
<i>Vicia cracca</i>	Tufted Vetch		SNA	Fabaceae
<i>Vicia tetrasperma</i>	Lentil Vetch		SNA	Fabaceae
<i>Vitis riparia</i>	Riverbank Grape		S5	Vitaceae

Species Highlighted **Red** are considered Species at Risk (provincially and nationally rare)

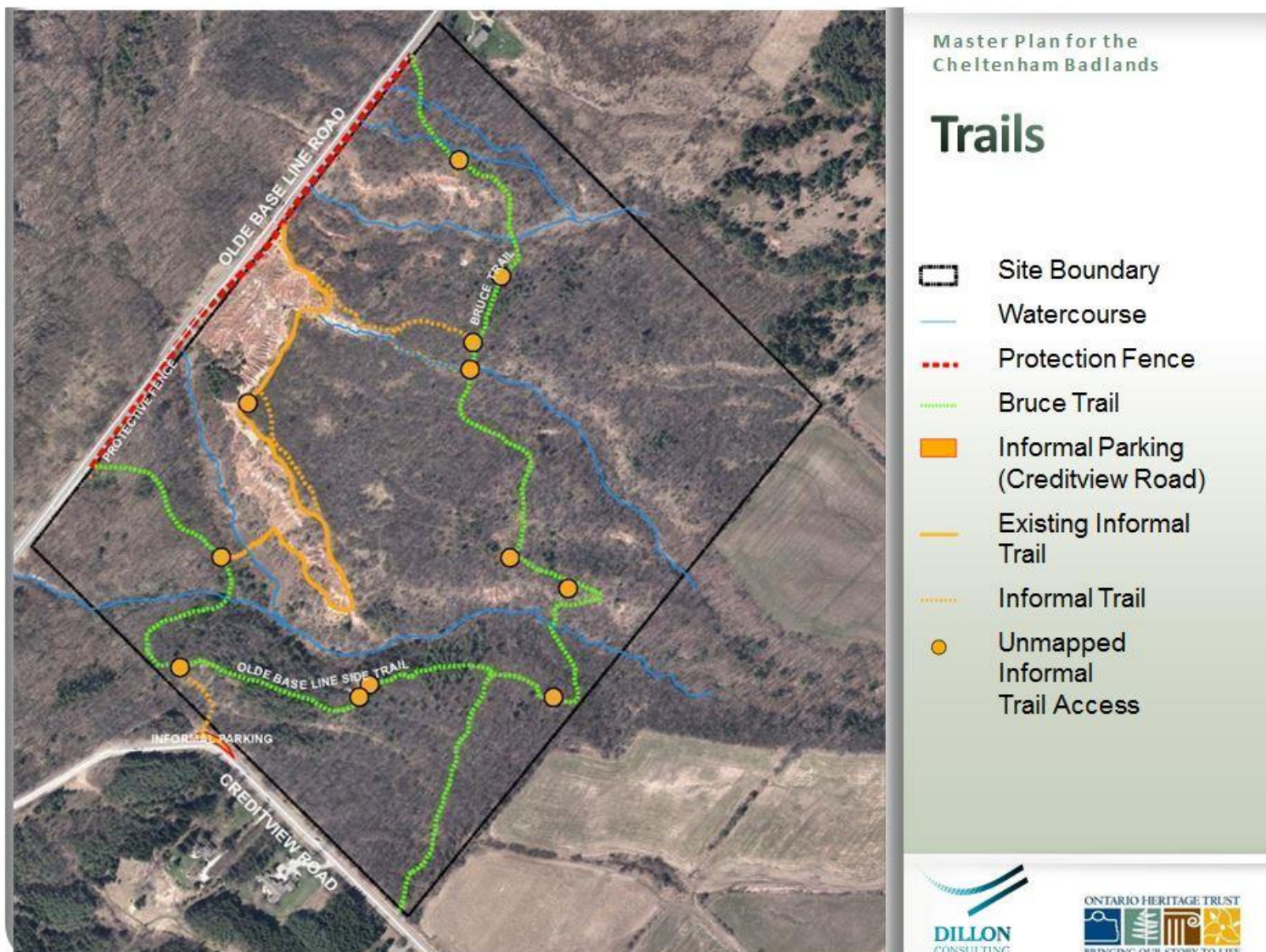
Species highlighted in **Green** are considered rare within the CVC watershed

## Ecological Land Classification Vegetation Communities



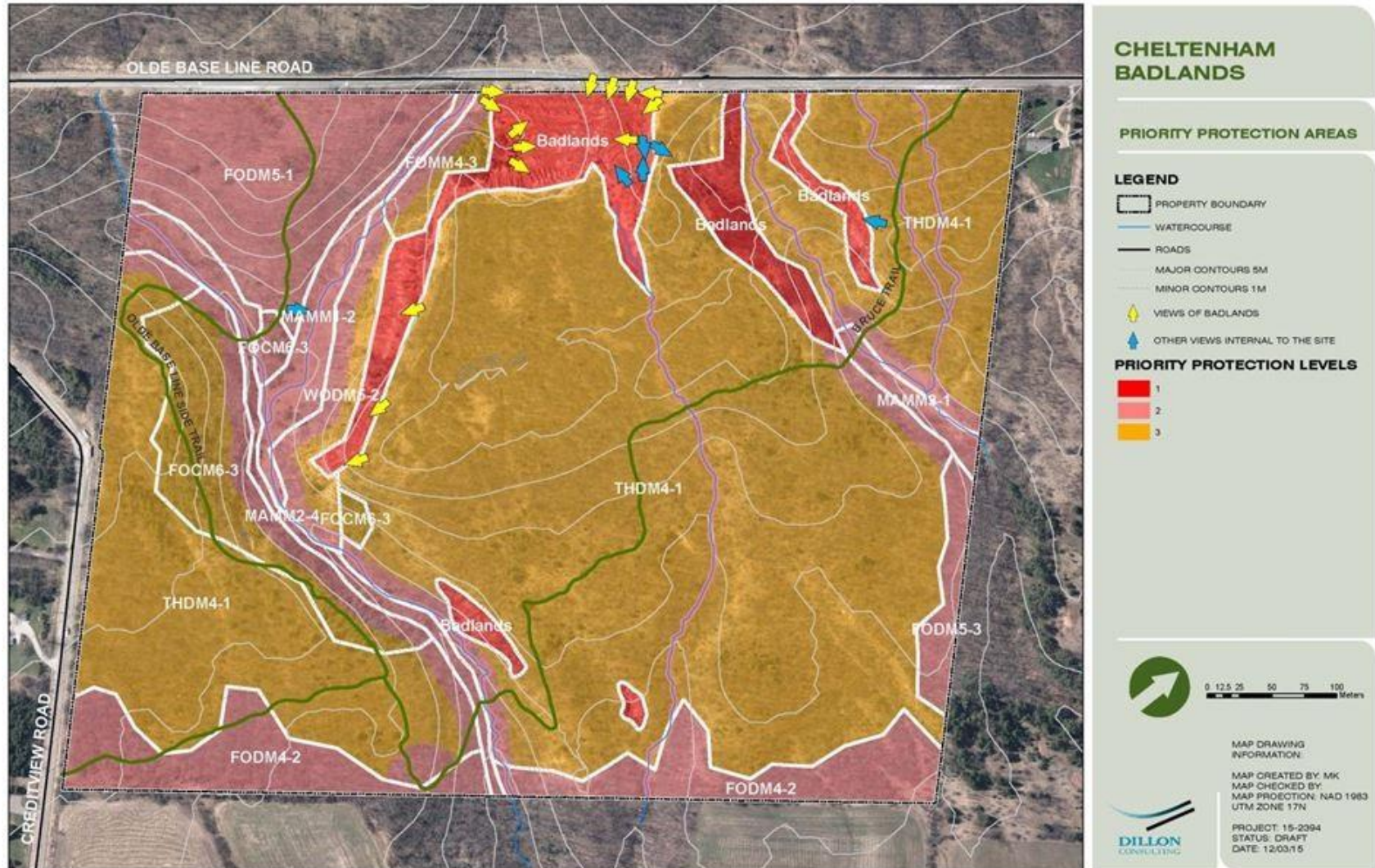


## Cheltenham Badlands 2015 Trail Map





## Cheltenham Badlands Priority Protection Areas



## Appendix B: NEPOSS Management Zones and Development Criteria

This following table is from the 2012 Niagara Escarpment Parks and Open Space System Planning Manual (2012). It should be noted that the Plan references in this table cite the 2005 NEP and not the current 2017 NEP.

NEPOSS Management Zones and Development Criteria			
Zone	Description	Management Direction	Permitted Uses (subject to management planning)
Nature Reserve	<p>Nature Reserve Zones include significant natural heritage features or areas that require careful management to ensure the long-term protection of their natural features.</p> <p>This type of zone should ensure ecological diversity and provide long-term protection for significant natural heritage features such as the following:</p> <ul style="list-style-type: none"> <li>• Habitat of endangered, threatened and rare species or species of special concern</li> <li>• Wildlife and fish habitat</li> <li>• Hydrological systems (e.g., streams, wetlands, ponds)</li> <li>• Woodlands</li> <li>• ANSIs</li> </ul> <p>Escarpment features (e.g., brow, slope, face, toe, and related landforms)</p>	<p>Nature Reserve Zones are predominately natural and should contain naturally functioning ecosystems.</p> <p>Such zones should protect natural heritage features in the long term.</p>	<p>To protect, preserve and rehabilitate identified natural heritage features, visitor uses are limited or restricted. Development is generally restricted to trails, necessary signs, interpretative facilities (where warranted), temporary research facilities and conservation practices.</p>
Natural	<p>Natural Zones include aesthetic landscapes in which a minimum of development is permitted to support low- to moderate-intensity recreational activities.</p> <p>This type of zone includes natural landscapes and high-quality natural settings.</p>	<p>The Natural Zone can function as a buffer between Development Zones and Historical or Nature Reserve zones.</p> <p>Natural Zones are not permitted in Nature Reserve class parks.</p>	<p>Low- to moderate-intensity recreational activities are permitted.</p> <p>A minimal level of development (e.g., trails, backcountry campsites, necessary signs and minimal interpretive facilities) is permitted to support low-intensity recreational activities.</p>

Access	Access Zones serve as staging areas (e.g., trailheads, parking lots) where minimal facilities support the use of Nature Reserve Zones and relatively undeveloped Natural and Historical zones.	Access Zones are intended to support the use of and access to adjacent zones.	Development may include minimal facilities to support Nature Reserve, Natural and Historical Zones. Examples include roads, signs, trailheads and parking lots.
Historical	Historical Zones include significant archaeological or cultural heritage features or areas that require management that will ensure the long-term protection of the significant features.	Management planning for archaeological or cultural heritage features may range from maintaining their present condition to restoring and/or reconstructing the site.	Development will include protection and interpretation of archaeological or cultural heritage features. Examples include interpretive, educational, research and management facilities, trails, signs, and historical restorations or reconstructions.
Development	Development Zones provide the main access to the park or open space, and facilities and services to support the recreational activities available. This type of zone may allow for the development of visitor and park facilities.	<p>A Development Zone is usually oriented to the provision of recreational opportunities that are suited to the natural character of the particular park or open space and are conducted in an environmentally sustainable manner.</p> <p>This zone should have minimal negative impact on natural heritage features and cultural heritage features, the natural landscape or watersheds.</p> <p>Development Zones are not permitted in Nature Reserve class parks.</p>	Development may include roads, parking lots and gates, beaches, picnic areas, campgrounds and commercial service facilities, and orientation, interpretive, educational, research and maintenance facilities. Development of facilities must be designed and undertaken in a way that will minimize their environmental and visual impact.

Resource Management	<p>Resource Management Zones include certain public lands that are managed primarily to provide resource-related benefits such as forest products, fish and wildlife, or flood control. Previously disturbed sites (e.g., abandoned quarries, old fields) where active measures are being taken to re-establish natural vegetation should also be considered for this type of zoning.</p> <p>This type of zone may include land that has traditionally been managed under long-term resource agreements (e.g. forest management agreements or agricultural leases).</p>	<p>Resource Management Zones are sustainably managed for many diverse values, such as wildlife, fisheries, forestry and outdoor recreation. Such zones may be places for experimenting with alternative resource management practices and developing a better understanding of ecosystem structures and functions in a scientifically sound manner. This zone should demonstrate exemplary conservation and stewardship.</p> <p>Resource Management Zones should not be established in Nature Reserve parks, provincial parks or in life science ANSIs, except as noted in section 3.1.5 of the NEP.</p>	<p>Resource Management Zones may be used to demonstrate ecologically sustainable resource management practices.</p> <p>Establishing permanent research plots for monitoring purposes (e.g. permanent sample plots for growth and yield studies) is encouraged in these zones.</p> <p>Water may be controlled for purposes related to flood protection, watershed management or municipal water supply.</p> <p>The recreation uses of Resource Management Zones are subject to park management planning.</p>
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**Table B-1 Policy Exempts from NEP p.2 Development Criteria**

Master Plan Component	NEC Master Plan Approval*	Master Plan Amendment	Town of Caledon Permit/Approval	CVC Review
<b>PHASE ONE</b>				
Entrance sign	X			
Staff shelter at main parking lot max. 15 sq, m.	X		X	
Vault toilets at main parking lot on Olde Base Line Road	X		X	
Wayfinding and interpretive signage	X			
Accessible trail (Type 1, compacted limestone screenings)	X			
Elevated boardwalk on accessible trail	X		X	
Water crossings – on-grade boardwalks	X			X
<b>PHASE TWO</b>				
Viewing deck at Main Badlands	X		X	
Boardwalk connection Main Badlands viewing area to plateau trail	X			
Plateau trail (Type 2 – compacted limestone screenings)	X			
Lookout viewing platforms on plateau trail	X			
Wetland to Plateau Trail (Type 4, combination trail/boardwalk with staircase structures)	X		X	
Wetland boardwalk	X			X
Improvements to Main Bruce Trail, Side Trail	X			

Master Plan Component	NEC Master Plan Approval*	Master Plan Amendment	Town of Caledon Permit/Approval	CVC Review
and connecting trails (Type 3, natural surface)				
Water crossings – on-grade boardwalks	X			X
Improvements to maintenance trail – widening, signage, gate	X			
Additional wayfinding and interpretive signage	X			
Pavilion/shelter added to main viewing area max. 45 sq. m.	X		X	X
<b>PHASE THREE**</b>				
Southwest parking lot at Creditview Road		X	X	X
Vault toilets at southwest parking lot		X	X	
Entrance, wayfinding and interpretive signage at southwest parking lot		X		
Staff shelter at southwest parking lot max. 15 sq. m.		X	X	

\* Master plan approvals should be confirmed with NEC staff prior to proceeding with construction.

\*\*Phase 3 proposals will be assessed through a Master Plan amendment.

### Appendix C: Site Concepts

The following common approach was used in the development of all concepts.

#### **Protection of Natural / Cultural Heritage Resources:**

- Establishment of protection areas based on the site's environmental characteristics/sensitivities (Priority Protection Areas);
- Elimination of uncontrolled access to the badlands feature to reduce human impacts (while still periodically permitting limited access for scientific and research purposes);
- Limiting major support infrastructure (parking / arrival areas) to more resilient areas;
- Controlled access through natural areas via a managed system of trails /footpaths, using existing routes to the extent possible;
- Focusing trail development on existing sustainable routes (formal trails and informal footpaths, where feasible);
- Closing unsustainable unauthorized trails.

#### **Visitor Support Infrastructure:**

- Provision of on-site parking (the Olde Base Line parking lot was a common element, provision of a second parking lot at Creditview Road varied across the concepts);
- Maintenance of the main Bruce Trail (options for retaining or closing the Olde Base Line Side side Trail trail varied);
- Opportunities for accessible trail routes and viewing areas;
- Provision of other infrastructure to allow for safe, controlled and sustainable visitation (e.g., viewing decks, boardwalks, washrooms, picnic areas);
- Optimizing opportunities to view and experience the badlands (in varying degrees).

### **Enhancing the Visitor Experience:**

- Provision of a looped, connected system of trails of varying lengths, difficulties, and experiences;
- Provision of locations for education and interpretation of the site's natural and cultural features.

Each concept built on the next to potentially create a phased approach to full site development. However they were developed with the understanding that selected elements could be blended within a new hybrid plan.

### **Concept #1 Main Badlands Viewing:**

- Focused on visitation on the main badlands viewing area, the Bruce Trail, a single trail loop connecting to the parking lot at Olde Base Line Road, and closure of the Olde Base Line side trail.

### **Concept #2 Enhanced Badlands Viewing:**

- Included the same elements as Concept #1 and added a trail loop on the plateau to expand opportunities for viewing/interpretation of the badlands, and a second parking lot with access from Creditview Road.

### **Concept #3 Expanded Site Access:**

- Included the same elements as Concept #2, retained a portion of the Olde Base Line Side side Trail trail and added viewing/interpretive areas of the secondary badlands and the wetland.

### **Concept #4:**

- Retained the Olde Base Line side trail in its entirety and added a new trail along the property frontage on Olde Base Line Road to connect a larger south parking lot to the main badlands.



### Appendix D: Public Consultation

The following section outlines detailed comments and key findings from the public and stakeholder consultation sessions held throughout the study. These included:

- Public Feedback Survey;
- Four (4) Public Meetings;
- Three (3) Community Forums (Residents, Business and Community);
- Meetings with representatives from: the Town of Caledon Accessibility Advisory Committee; the Region of Peel Accessibility Advisory Committee; and the Mississaugas of the New Credit First Nation.

#### Public Feedback Survey

An online survey was launched in September 2015. It included 16 survey questions related to where visitors lived, how frequently they visited the Cheltenham Badlands, activities undertaken at the site while visiting, and suggestions for new amenities. The survey was advertised through a media release, in six newspapers and on partner agency web-sites and ran for approximately six weeks. There were 590 respondents to the survey, although not everyone answered all questions.

Through identification of postal codes, respondents reported living in the following municipalities.

#### Online Public Feedback Survey

*The Cheltenham Badlands property is a 36-hectare site located 3 km west of Highway 10 on Olde Base Line Road in Caledon. It contains woodlands, wetlands and the unique topographic feature known as the Cheltenham Badlands. The Ontario Heritage Trust (Trust) and the Cheltenham Badlands Management Planning Team (CBMPT) have been actively planning the future of the Cheltenham Badlands property since 2008. In an effort to direct long-range planning and to help address management issues at the site, the CBMPT has developed a set of four guiding principles:*

- *Conservation of the property's cultural and natural heritage values;*
- *Safety for all individuals who visit the site;*

- *Improved accessibility for those who wish to access the site; and*
- *Enhanced opportunities for interpretation and public education.*

*These principles align directly with the Trust's mandate and will guide all future work at the Badlands.*

*A Master Plan is underway which will provide for an appropriate balance of resource management, environmental protection and public access to the property. Dillon Consulting Limited and a team of specialists have been retained to lead the Master Plan. The site is temporarily closed to the public during the master planning process.*

*Community and user input is important to the process. We want to learn more about your experiences at the Cheltenham Badlands and hear your ideas and insights. Please take a few minutes to answer the following 16 questions. The survey will take approximately 5-10 minutes to complete and your responses will be kept confidential and anonymous.*

*Thank you for your support!*

*The following 9 questions are about your use of the Cheltenham Badlands property prior to the temporary closure of the site.*

- 1. Please provide the first three digits of your home postal code to assist us in determining where visitors are travelling from.**
- 2. How did you first hear of the Cheltenham Badlands?**
  - a. Personal experience (travelling past or through the site)
  - b. Friends/family
  - c. Social media
  - d. Media articles/spots (Print/Radio/Television/Internet)
  - e. Tourist/promotional materials
  - f. School trip
  - g. This is the first time I have heard of the Cheltenham Badlands
  - h. Other (please specify)
- 3. During an average year, how often did you visit the Cheltenham Badlands (prior to the temporary closure of the site)?**
  - a. Once

- b. Twice
- c. Three times
- d. Four times
- e. Five times
- f. Six times
- g. More than six times
- h. I do not typically visit the site

**4. During an average year, in which months did you typically visit the Cheltenham Badlands (prior to the temporary closure of the site)? Please select all that apply.**

- a. January
- b. February
- c. March
- d. April
- e. May
- f. June
- g. July
- h. August
- i. September
- j. October
- k. November
- l. December
- m. I do not typically visit the site

**5. During a typical visit, how long did you stay at the Cheltenham Badlands (prior to the temporary closure of the site)?**

- a. 15 minutes or less
- b. 16 to 30 minutes
- c. 31 to 45 minutes
- d. 46 to 60 minutes
- e. More than one hour but less than two hours
- f. More than two hours but less than three hours
- g. More than three hours
- h. I do not typically visit the site

**6. What mode of transportation was used to travel to the Cheltenham Badlands during your most recent visit (prior to the temporary closure of the site)?**

- a. Private vehicle (as driver)
- b. Private vehicle (as passenger)
- c. Bus
- d. Walking/running
- e. Bicycle
- f. I have not visited the site
- g. Other (please specify)

**7. Who accompanied you on your most recent visit to the Cheltenham Badlands (prior to the temporary closure of the site)? Please select all that apply.**

- a. I travelled to the site alone
- b. Family members
- c. Friends
- d. Classmates
- e. Work colleagues
- f. Team/club/organization colleagues
- g. I have not visited the site
- h. Other (please specify)

**8. What activities have you engaged in during past visits to the Cheltenham Badlands (prior to the temporary closure of the site)? Please select all that apply.**

- a. Viewing/appreciation of the landscape
- b. Hiking on the Bruce Trail
- c. Bird-watching or wildlife observation
- d. Photography/videography
- e. Sketching/painting
- f. Star-gazing
- g. Picnicking
- h. Educational activities/conduct research
- i. I have not visited the site
- j. Other (please specify)



**9. What other off-site activities did you engage in during your most recent visit to the Cheltenham Badlands (prior to the temporary closure of the site)? Please select all that apply.**

- a. Visited other conservation/nature areas
- b. Visited local restaurants/food vendors
- c. Visited local shops and stores
- d. Visited sports/recreational sites (golf course, ski hill, etc.)
- e. Visited friends/family
- f. Pursued business/employment interests/activities
- g. I visited only the Cheltenham Badlands
- h. I have not visited the site
- i. Other (please specify)

The following 7 questions relate to future planning for the Cheltenham Badlands property.

**10. The Cheltenham Badlands property has been a very popular destination in the past with visitors travelling to the site by car and then parking along Olde Base Line Road. The resulting conditions have been deemed unsafe for both motorists and pedestrians. Prior to the temporary closure of the site, how concerned were you about public safety issues?**

- a. Not concerned
- b. Slightly concerned
- c. Concerned
- d. Very concerned

**11. While travelling past or visiting the Cheltenham Badlands prior to the temporary closure of the site, have you ever felt that your safety or the safety of others was at risk?**

- a. Yes
- b. No
- c. I have not travelled past or visited the site prior to the site closure

**12. Past studies on the Cheltenham Badlands have demonstrated that the red shale that forms the feature is constantly eroding. Although much of the erosion is caused**

**by natural factors, human foot traffic has been demonstrated to have a significant and measurable impact on the rate at which erosion occurs. Prior to the temporary closure of the site, how concerned were you about human-caused erosion at the site?**

- a. Not concerned
- b. Slightly concerned
- c. Concerned
- d. Very concerned

**13. In order to ensure long-term public safety and conservation at the Cheltenham Badlands, access onto the feature will need to be carefully managed. While visitors would be able to view the feature, it may not be prudent to permit them to walk on it. Would you visit the site if access was limited to viewing only?**

- a. Yes
- b. No
- c. Unsure

**14. To support visitation to the Cheltenham Badlands in the future while mitigating safety and conservation issues, some human intervention on the property will be required. Please rate the importance of the amenities below in regard to inclusion in the final plan.**

- a. Not important
- b. Somewhat important
- c. Important
- d. Very important
- i. Observation decks/towers
- ii. Reconfigured/improved trails/pathways
- iii. Interpretive/educational installations (on-site)
- iv. Interpretive/educational materials (web-based)
- v. Interactive zones (areas to physically experience the topography)
- vi. Guided tours
- vii. Shuttle services from local sites
- viii. Washrooms
- ix. Park furniture (benches, garbage cans, bike racks, etc.)

**15. The level of amenities available at the site is contingent upon securing funds to cover associated expenses. Increased revenues from visitor admission fees or voluntary donation would provide an opportunity to increase the level of amenities provided on site. How much would you be willing to pay/donate to access the site?**

- a. I would not be willing to pay a fee or provide a donation
- b. \$1 to \$1.99
- c. \$2 to \$4.99
- d. \$5 to \$9.99
- e. Greater than \$10

**16. The Cheltenham Badlands Management Planning Team has developed four guiding principles to direct all future work on the site. Please rate the importance of each principle.**

- a. Not important
- b. Somewhat important
- c. Important
- d. Very important
- i. Conservation of the property's cultural and natural heritage values
- ii. Safety for all individuals who visit the site
- iii. Improved accessibility for those who wish to access the site
- iv. Enhanced opportunities for interpretation and public education

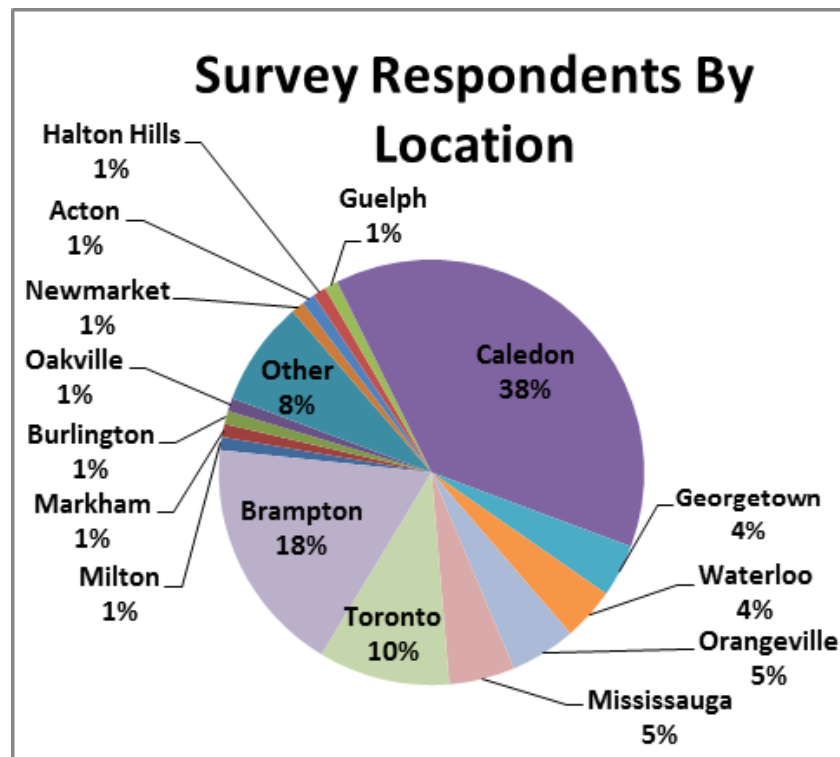
*This completes the survey. Thank you for your participation!*

*Information about the Cheltenham Badlands, site management issues and upcoming public meetings can be found on the Ontario Heritage Trust's website at:  
<http://www.heritagetrust.on.ca/Conservation/Naturalheritage/>*

*The-Cheltenham-Badlands.aspx*

*If you have any questions/comments or would like to be added to our consultation list, please contact the Trust at [programs@heritagetrust.on.ca](mailto:programs@heritagetrust.on.ca).*

## Public Feedback Survey Results



The following questions and survey responses were most relevant to the development of site concepts.

*Q5: During a typical visit, how long did you stay at the Cheltenham Badlands (prior to the temporary closure of the site)?*

*Response:*

- 15 minutes or less (14%)
- 16 to 30 minutes (23%)
- 31 to 45 minutes (15%)
- 46 to 60 minutes (13%)
- More than one hour but less than two hours (12%)
- More than two hours but less than three hours (3%)
- More than three hours (<1%)

*Q11: While travelling past or visiting the Cheltenham Badlands prior to the temporary closure of the site, have you ever felt that your safety or the safety of others was at risk?*



*Response: 57% of respondents responded affirmatively.*

*Q13: “Would you visit the site if access was limited to viewing only?”*

*Response: 63% of respondents responded affirmatively.*

*Q14: To support visitation to the Cheltenham Badlands in the future while mitigating safety and conservation issues, some human intervention on the property will be required. Please rate the importance of the amenities below in regard to inclusion in the final plan.*

The following list of amenities was included with the question. They are ranked in order of preference (per cent responding *Important* or *Very Important* is noted in brackets)

1. Reconfigured/improved trails and pathways (73%)
2. Observation decks/tower (70%)
3. Interpretive /educational installations (on-site) (57%),
4. Interactive zones (53%)
5. Park furniture (benches, garbage cans, bike racks) (52%)
6. Interpretive/educational installations (web-based) (45%)
7. Washrooms (30%)
8. Shuttles from local sites (18%)
9. Guided Tours (13%)

### **Public Meetings**

Four public consultation meetings were held during the planning process, in between October 2015 and April 2018. These meetings provided residents with opportunities to provide feedback at various points in the process.

#### **Input from Public Meeting #1**

**October 13, 2015, 7 p.m., Caledon Community Complex**

The purpose of the meeting was to review the study process, outline the goals for the Cheltenham Badlands, provide preliminary results from the online public feedback survey, and to receive thoughts and ideas about the site. The meeting included a presentation and question and answer period followed by a workshop component with break-out table discussions.

The break-out discussion at Public Meeting #1 included a question on the same list of potential improvements as the Public Feedback Survey. Seventeen

attendees participated in the ranking exercise. The improvements are listed from highest support to lowest (percent responding *Support* is noted in brackets)

1. Natural environment protection/enhancement areas (existing or expanded) (94%)
2. Observation deck(s) (94%)
3. Reconfigured/improve trails/pathways (88%)
4. Interpretive/educational installations (on-site) (75%)
5. Observation tower (35%)
6. Interpretive/educational materials (web-based) (71%)
7. Park furniture (benches, garbage cans, bike racks, etc.) (59%)
8. Guided tours (53%)
9. Washrooms (53%)
10. Interactive zones (areas to physically experience the topography) (42%)
11. Shuttles from local sites (42%)

Additional comments provided during the breakout sessions included:

- Maintenance of the natural environment should be paramount and be a priority over tourism;
- Need for the fencing of the badlands to stay, and be extended;
- Parking should be off-site;
- There should be a parking/admission fee with the option of a shuttle bus to bring people to and from the site;
- The portion of the badlands that is south of the main area could be open for public interaction. Explore the idea of closing the road down from dawn until dusk;
- There should be a fine for parking violations;
- Any revenue generated could fund the Bruce Trail Conservancy or other local charities.

## Public Consultation Meeting #2

January 25, 2016, 7 p.m., Caledon Community Complex

Public Meeting #2 was the second in a series of public consultation events on the Master Plan for the Cheltenham Badlands. The meeting was conducted as an open house with display boards, followed by a presentation and question and answer period.

The purpose of the meeting was to provide a summary of the public consultation to date, including: the online survey results and Public Meeting #1 input. The meeting was also an opportunity to present the findings of the Stage One Inventory & Analysis, Priority Protection Areas mapping and rationale, and key management strategies.

Key feedback from Meeting #2 included:

- Concern over the plan for and location of the Olde Base Line parking lot;
- Need for planting buffer to screen parking lot;
- Support for and against a parking lot on Creditview Road (as both an alternate and additional lot);
- Need for overall traffic management plan for the area;
- Support for and against allowing access on the badlands, and potential need for additional fencing;
- Interest in additional opportunities for public involvement and representation on the CBMPT.

### Public Consultation Meeting #3

January 25, 2016, 7 p.m., Inglewood Community Centre

Public meeting #3 was the third in a series of public consultation events on the Master Plan for the Cheltenham Badlands property. Approximately 35 members of the community participated in the public consultation meeting.

The purpose of the meeting was to: provide an update on the planning process to date, and present and seek feedback on four (4) preliminary site concepts.

A range of support was expressed for various elements in the four site concepts and no clear preference was expressed for any one concept.

Key comments raised around the four concepts included:

- Provide for protection of natural and cultural features as a priority;
- Allow viewing of the badlands only, and from multiple locations;
- Concern over traffic and pedestrian safety related to the parking lot, walkway and main viewing area at Olde Base Line Road;
- Support for an accessible trail between the Olde Base Line Trail parking lot and the main badlands;
- Support for connected, looped trails to discourage the development of rogue trails;
- Potential opportunities for boardwalks and bridges;
- Concern over impacts to the regenerating forest from Trail Loop 2;

- A desire to keep the Bruce Trail side trail open, in whole or in part, and to create an interior link to the main badlands;
- Provide adequate facilities (trails, viewing decks, parking, washrooms, waste receptacles) to support anticipated visitation;
- Ensure facilities on site, such as washrooms, are accessible;
- Include opportunities for interpretation, education and arts-related pursuits (painting, photography, etc.).
- Define operational parameters for the site (hours/season of operation, waste management, parking fees).

### Public Consultation Meeting #4

April 5, 2018, 7 p.m., Caledon Community Complex

Public meeting #4 was the fourth in a series of public consultation events on the Master Plan for the Cheltenham Badlands property. Approximately 28 members of the community participated in the public consultation meeting. This meeting was organized as a typical open house, with an introductory presentation.

### Community Forums (Resident, Business and Community)

In response to feedback requesting additional consultation with the local community, the Trust, in collaboration with the Region of Peel, hosted three supplementary discussion forums to receive targeted input from local stakeholders. Notes and comments from each of these meetings were provided to participants and the planning team. High-level summaries were shared with the general public at Public Meeting #3.

#### **Residents Forum** - March 30, 2016, 7 p.m., Inglewood Community Centre

The purpose of the meeting was to relay background information and to provide a forum to listen to comments, ideas and concerns from local residents. It was attended by approximately 60 members of the community, and representatives from the Trust and the CBMPT.

Key messages from this meeting were:

- Interest in additional opportunities for public involvement and representation on the CBMPT;
- Support for and against parking on-site;
- Support for shuttle buses;
- Need for traffic enforcement;



- Support for cross marketing, i.e. market Badlands as regional tourism opportunity and “turn traffic into tourism”;
- Support for environmental education experience;
- Need to explore entry/parking fees;
- Support for expansion of trails and looped trails;
- Need to explore timing of site re-opening;
- Need to identify optimal property manager (e.g., CA, Ontario Parks etc.).

### **Business Forum** - April 12, 2016, 7 p.m., Spirit Tree Estate Cidery

The purpose of the meeting was to relay background information and to provide a forum to listen to comments, ideas and concerns from local businesses. It was attended by representatives from the Trust and the CBMPT and approximately 20 members of the business community, with representation from many sectors including agriculture, arts and hospitality.

- Strong support for quick re-opening of the site.
- Support for on-site parking.
- Support for shuttle bus system.
- Need for broader tourism and marketing strategy.
- Need to identify optimal property manager (e.g., CA, Ontario Parks etc.).
- Interest in an additional local community forum.
- Concerns that business interests and residents’ interests will not align with each other.
- Interest in commercial photography opportunities.

### **Community Forum** - June 22, 2016, 7 p.m., Inglewood Community Centre

This meeting included both residents and local business representatives and was attended by approximately 25 community members and representatives from the Trust and the CBMPT.

The meeting focused on the following:

- Updates on the Master Planning process;
- Updates on the parking lot and right of way improvements on Olde Base Line Road;
- Opportunities for questions and answers;
- Feedback on the four site concepts through a Group Evaluation Exercise (5 Table Groups).

Many of the participants at the Community Forum also attended the Residents or Business Forum, or the public meetings. Consequently there were a number of repeated ideas and comments. A slight preference was expressed from the break-out groups for Concept #4.

Key messages from the meeting included:

- Interest in public involvement on the CBMPT;
- Need to examine timing of site re-opening; consider monitoring erosion for 5 years;
- Support for and against parking on-site, both at Olde Base Line Road and at Creditview Road;
- Concern over traffic and pedestrian safety related to the parking lot, walkway viewing area at Olde Base Line Road;
- Support for shuttle buses;
- Desire for environmental protection focus;
- Support for entry/parking fees;
- Support for and against expansion of trails,
- Desire for looped trails, boardwalks and bridges;
- Need to identify optimal property manager.
- Need for proper waste management.

### **First Nations Consultation**

Consultation with the Mississaugas of the New Credit First Nation was conducted throughout the study. Consultation identified cultural and natural interests, consultation on development of the Master Plan, collaboration on creation of educational and interpretive materials, appropriate recognition of traditional territory and treaty lands, and to ensure Indigenous archaeological monitoring of site

### **Accessibility Advisory Committee Meetings (Region of Peel, Town of Caledon)**

In response to questions and comments received from the Town of Caledon Accessibility Advisory Committee in September 2016, the Trust took the following actions related to improving accessibility on the site.

- Obtained input from an accessibility consultant;
- Developed options for enhancing accessibility;

- Consulted directly with the ToC and Region of Peel Accessibility Advisory Committee to receive additional feedback.

In January 2017, the Trust coordinated a joint meeting with the Town of Caledon and Region of Peel Accessibility Advisory Committee.

The meeting focused on the following:

- Master Planning process and current status;
- Overview of site improvements;
- Feedback on proposed accessibility enhancements.

The outcome from these discussions has informed the planning for an accessible trail between the parking lot and the main badlands viewing area.

A follow-up meeting was held in January and mid-February 2018 for each Accessibility Advisory Committee to outline the changes made to accessibility on the site, as a direct response to the committees' suggestions.

Area of Concern	Addressed in the Master Plan			Detailed Response
	Yes	No	TBD	
Public Consultation				
Themes: <ul style="list-style-type: none"><li>Additional public involvement in the Master Plan process;</li><li>Ensure meetings are held in locations that are convenient for people who live near the site;</li><li>Hold additional targeted consultation opportunities for businesses, residents, and additional interested stakeholders;</li><li>Interest in ongoing and effective community engagement. Consider ongoing community engagement opportunities.</li></ul>	✓			<p>A Cheltenham Badlands Management Planning Team (CBMPT) was established to guide decision making for the planning and management of the site. The CBMPT is comprised of representatives from: the Ontario Heritage Trust (the Trust); the Bruce Trail Conservancy and its local chapter the Caledon Hills Club; Credit Valley Conservation (CVC); the Niagara Escarpment Commission (NEC); the Region of Peel (ROP); the Town of Caledon; the Mississauga’s of the New Credit First Nation; and the Caledon Countryside Alliance. The Ontario Ministry of Natural Resources and Forestry (OMNRF) is also a key partner.</p> <p>Numerous opportunities for broader public consultation have been offered throughout the development of the Master Plan. Opportunities included: An online Public Feedback Survey; Four (4) Public Meetings; Three (3) Community Forums (Residents, Business and Community); Meetings with representatives from: the Town of Caledon Accessibility Advisory Committee; the Region of Peel Accessibility Advisory Committee; and the Mississauga’s of the New Credit First Nation. There is</p>



Area of Concern	Addressed in the Master Plan			Detailed Response
	Yes	No	TBD	
Public Consultation <i>continued...</i>				
	√			<p>intent to continue consulting with the public regarding the site and its operation after the Master Plan has been approved. Opportunities for future public consultation including e-mails and direct contact, information made available on the website, and contact through our operational partner.</p> <p>A monitoring program and visitor surveys will inform an adaptive management approach based on evidence-based decision making to direct site management activities such as parking, and additional infrastructure to ensure natural and cultural heritage features are protected. The visitor monitoring program will include infrared trail counters, vehicle counters, and periodic visitor surveys.</p>
Natural Environment Protections				
Themes: <ul style="list-style-type: none"><li>The scale of site development needs to balance visitor interests with environmental protection;</li></ul>	√			The Master Plan identifies defines Management Zones and outlines policies to foster natural and cultural heritage conservation, as per Niagara Escarpment Plan requirements.

Area of Concern	Addressed in theMaster Plan			Detailed Response
	Yes	No	TBD	
Natural Environment Protections <i>continued...</i>				
<ul style="list-style-type: none"><li>The site objectives should prioritize avoiding, or minimizing and mitigating adverse impacts to the environment and/ or heritage features.</li></ul>	✓			<p>The management policies for the site protect a number of heritage features on the property. Protection for Habitat for Species at Risk, Significant Wildlife Habitat, Rare Communities and Sensitive Features will be the highest order priority in the Nature Reserve Zone. Development will be limited in the Natural Environment Zone and avoided in the Natural reserve zone. Mitigation actions will be developed and implemented so as to minimize any negative impacts anticipated on the natural environment due to the construction of built features. As site development plans are implemented, additional site-specific information on plant communities, wildlife habitat, natural stream functions and aquatic habitat will be collected as it is needed for planned trail and infrastructure planning and design.</p> <p>An adaptive management approach has been implemented in the Master Plan in recognition of the constantly evolving conditions of natural resources and the demands placed on them. Adaptive management allows the development of a plan when some degree of uncertainty exists. It allows for reevaluation of goals and approaches, and the redirection of management activities based on an increasing information base and changing</p>

Area of Concern	Addressed in the Master Plan			Detailed Response
	Yes	No	TBD	
Natural Environment Protections <i>continued...</i>				
	√			public expectations (Baskerville 1985 as referenced in National Park Service 2007).  This approach will also allow the Ontario Heritage Trust to study and assess threats and impacts to the heritage resources on the Cheltenham Badlands site. Evidence-based decision making will be used to inform the need for change, including further protections on sensitive environmental features and the construction of additional facilities.
Parking and Traffic				
Themes: <ul style="list-style-type: none"><li>• Support and opposition to parking facilities on Olde Base Line and Creditview Roads;</li><li>• Interest in traffic safety and improving congestion;</li><li>• Limit and/ or reduce the use of road parking and the pedestrian walkway on Old Base Line Road;</li></ul>	√			Following a rigorous assessment and approval process (separate from the Master Plan), a parking lot (33 cars, 2 school buses) and accessible parking space has been constructed on Olde Base Line Road in response to safety concerns and vehicular congestion. Provision for bus drop-off/parking has been made in the main parking lot on Olde Base Line Road. Bicycle racks will be provided in the parking lot to facilitate visitors arriving by bicycle. This parking lot is landscaped to minimize impacts and blend it into the existing natural landscape.

Area of Concern	Addressed in the Master Plan			Detailed Response
	Yes	No	TBD	
Parking and Traffic <i>continued...</i>				
<ul style="list-style-type: none"><li>• Ensure parking capacity meets visitor demand;</li><li>• Ensure there are safe locations for bus drop-off and parking;</li><li>• Consider charging fees for parking.</li></ul>	✓			<p>A future site for a potential parking lot has been identified for the southwest corner of the property with access from Creditview Road. Monitoring of visitation, additional technical investigations and financial considerations will inform the timing and configuration of development of this parking lot and related infrastructure in the future. Incorporating bicycle racks, washrooms, and additional bus parking and drop-off areas are all considerations for the design/development of the parking lot on Creditview Road.</p> <p>Traffic enforcement on the municipal roads is outside the scope of this Master Plan. The Town of Caledon, Region of Peel and other enforcement agencies continue to be responsible for enforcing traffic regulations. The pedestrian walkway on Olde Base Line Road has been constructed to municipal safety standards, and other traffic calming measures have been implemented on Olde Base Line Road following rigorous assessment by the Region of Peel.</p>
Site Management and Operations				
Themes: <ul style="list-style-type: none"><li>• Secure an operating</li></ul>			✓	Overall operation of the Cheltenham Badlands site will be managed by an external third party. This third party will



Area of Concern	Addressed in the Master Plan			Detailed Response
	Yes	No	TBD	
Site Management and Operations <i>continued...</i>				
<ul style="list-style-type: none"><li>partner for the site with the capacity to manage the site and protect the heritage resources;</li><li>Hire a full-time staff member to administer the site;</li><li>Consider the phasing for the site opening.</li></ul>			√	<p>be selected based on their skills, experience and capacity to manage the property.</p> <p>Conversations with potential partners are ongoing. Fees, to offset annual operating costs, will be charged for the use of the parking lot on the site, on a trial basis. The permanence of this plan will be determined through visitor monitoring and surveys. Similarly, the need for on-site staff will be determined based on visitor monitoring, surveys, and site usage.</p>
Accessibility				
<p>Themes:</p> <ul style="list-style-type: none"><li>Improve site accessibility;</li><li>Include officially marked AODA-compliant parking spaces in Olde Base Line Road parking lot.</li><li>Add an internal accessible trail or walkway on the property.</li><li>Trail designers refer to the technical requirements of the Integrated Accessibility</li></ul>	√			<p>Accessibility is enshrined in the guiding principles of the Master Plan. One of the guiding principles is “Improved accessibility for those who wish to access the site.” The Master Plan and the site plan incorporated accessibility features that were based on feedback from the public and the Town of Caledon and Region of Peel Accessibility Advisory Committee.</p> <p>An accessible trail was added to link the parking lot to the Badlands viewing area. It was designed based on the York Region Accessibility Design Guidelines for Trails. These guidelines are considered the highest standards for trail</p>

Area of Concern	Addressed in the Master Plan			Detailed Response
	Yes	No	TBD	
Accessibility <i>continued...</i>				
Standards from Ontario Regulation 191/11.	√			<p>construction in Ontario and exceed the requirements of the technical requirements of the Integrated Accessibility Standards from Ontario Regulation 191/11. The trail is 246m long and 2.4m wide trail to allow for 2 way traffic. Most of the trail has less than a 5% average grade with resting intervals in areas with grades above 5%. The accessible trail includes boardwalks, edge protection, and benches. Boardwalks will be installed in sections with a steep elevation. Crushed gravel screenings will be used to ensure a firm and level trail surface.</p> <p>Two designated accessible parking spaces with accessible aisles are included in the main parking lot in the final site concept. Accessibility features have been prioritized and are in phase 1. It is anticipated that phase 1 work will be completed in the next five years. These parking spaces will be AODA-compliant.</p>
Visitor Experience, Marketing and Tourism				
Themes: <ul style="list-style-type: none"><li>Consider opportunities for cross-promotion with community events;</li></ul>	√			The Badlands is a notable landmark within Caledon and the province. The 2018 season will focus on protecting the site’s significant features and allow visitors to safely access the property.

Area of Concern	Addressed in the Master Plan			Detailed Response
	Yes	No	TBD	
Visitor Experience, Marketing and Tourism <i>continued...</i>				
<ul style="list-style-type: none"><li>Develop facilities on the site to enhance visitor experience such as benches, rest areas, washrooms, picnic areas, and educational opportunities;</li><li>Tourists visiting the property;</li><li>Improving signage and marketing materials.</li></ul>	√			<p>In the summer of 2018, the site will reopen and include an accessible boardwalk, a designated accessible on-street parking spot, trail maintenance work, and improved wayfinding and interpretive signage for the property. The boardwalk and on-street parking area work is completed. Trail maintenance works and signage will be implemented in 2018, once the weather allows trail work to begin.</p> <p>Uncontrolled access to the Badlands shale feature will no longer be permitted. Access for scientific/research purposes will be permitted subject to permission/permits.</p> <p>Wayfinding signage has been included on the property and its trails. A broader signage plan is being developed alongside the Master Plan.</p> <p>An adaptive management approach has been implemented in the Master Plan in recognition of the constantly evolving conditions of natural resources and the demands placed on them. Adaptive management is a process that allows the development of a plan when some degree of biological and socioeconomic uncertainty exists.</p>

Area of Concern	Addressed in the Master Plan			Detailed Response
	Yes	No	TBD	
Visitor Experience, Marketing and Tourism <i>continued...</i>				
	✓			<p>It allows for a continual learning process, a reiterative evaluation of goals and approaches, and redirection of management activities based on an increasing information base and changing public expectations (Baskerville 1985 as referenced in National Park Service 2007).</p> <p>An adaptive management approach will be used to assess visitor usage of current facilities and resources on the Cheltenham Badlands site and to evaluate the need for change, including the construction of additional facilities. Any future changes to uses/limitations at the site will be directed by adaptive management, and site and visitor monitoring.</p> <p>Visitor surveys and on-site monitoring will be undertaken periodically to estimate visitor volume, duration, frequency, geo-demographic profiles, and to receive feedback and inform ongoing adaptive management efforts and implementation of projects at each phase.</p> <p>Opportunities will be considered for marketing of the site. These opportunities may include opportunities for cross-</p>



Area of Concern	Addressed in the Master Plan			Detailed Response
	Yes	No	TBD	
Visitor Experience, Marketing and Tourism <i>continued...</i>				
	√			marketing which can be considered and explored in partnership with the Town of Caledon and local businesses. Developing a marketing plan and business partnerships are outside the scope of the Master Plan.
Trails				
Themes: <ul style="list-style-type: none"><li>Consider a loop trail to reduce congestion;</li><li>Consider new infrastructure on the property, such as a viewing platform, bridges, and boardwalks.</li></ul>	√			<p>The trail system is has been designed to provide visitors with access to the property while balancing its impacts on environmentally sensitive areas of the site. It has been designed in collaboration with environmental regulatory agencies. New trail infrastructure will be implemented in phases, and these phases will be based on visitor and environmental monitoring and evidence-based observations on usage of the site.</p> <p>All new trails and infrastructure developed on the property will undergo technical investigations before they are implemented, including ecological, soil and slope conditions. For example, low-impact boardwalks are proposed for all watercourse and wetland crossings.</p> <p>In 2017, an accessible boardwalk was constructed to allow all visitors to access and view the badlands feature. It will also provide scenic views of the property and the</p>

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	Yes	No	TBD	
Trails <i>continued...</i>				
	√			City of Toronto. A more robust viewing platform is included in Phase 2.
Education/ Interpretation				
Themes: <ul style="list-style-type: none"><li>• Improve educational material and highlight the importance of protecting the environmental values of the property;</li><li>• Consider innovative interpretive information such as interactive displays and online content;</li><li>• Ensure indigenous history in the area is reflected throughout educational and interpretive content.</li></ul>			√	<p>Opportunities for site interpretation and education include signage and website content which will present the property’s natural heritage, cultural heritage and geology as well as stewardship and conservation being conducted there.</p> <p>A detailed interpretation plan is to be developed as a separate process to the Master Plan. The specifics of this plan are outside the scope of the Master Plan but variety of modes of interpretation will be considered for conveying information to the public, both on and off-site, including on-site interpretive signage, updated content on the website, and other materials which will be determined by monitoring visitor demand.</p> <p>The Cheltenham Badlands property is located in the traditional territory of the Mississaugas, Indigenous people have had a long history of living in the area and their history and traditional uses will be woven throughout the educational and interpretive materials</p>

Area of Concern	Addressed in the Master Plan			Detailed Response
	Yes	No	TBD	
Education/ Interpretation <i>continued...</i>				
			√	developed for the site.
Research				
Themes: <ul style="list-style-type: none"><li>• Facilitate research to understand the badlands erosion process;</li><li>• Facilitate research to understand natural heritage features on the property;</li><li>• Ensure archaeological assets on the property are protected during development;</li><li>• Facilitate research to understand the health of wetlands and waterways</li></ul>	√			<p>Research activities are an important part of planning for the property.</p> <p>Geomorphological monitoring was undertaken on the Cheltenham Badlands site in 2009, 2012, 2014 and 2017 by the University of Toronto. This work is part of a long-term research partnership with the University of Toronto. Knowledge obtained through this research was incorporated into the Master Plan and continues to inform management considerations for the property. Studies undertaken of the Badlands topography indicate that they are a result of erosion of the soil cover and the resultant exposure and extensive weathering of the underlying shale formation. The removal of trees and early farming practices caused the shallow topsoil to erode away, and exposing the red shale to the elements. Rain, snowmelt and freeze-thaw conditions caused rapidly accelerating erosion of the Queenston Shale, resulting in the unique ridge and gully landscape known today as the Cheltenham Badlands. It is noted in recent studies that that the erosion is taking place at a rapid rate</p>

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	Yes	No	TBD	
Research <i>continued...</i>				
	✓			<p>and has increased as a result of human foot traffic on the Badlands as well as natural processes. Based on studies and analysis completed to date uncontrolled access to the badlands shale feature will no longer be permitted. Ongoing research will provide a better understanding of changes taking place to the badlands feature.</p> <p>Ongoing biophysical monitoring and research provide a good baseline understanding of Species at Risk, invasive species, and biological diversity on the property. These investigations will support ongoing stewardship projects at the site. The University of Waterloo will also be conducting research on ecological succession on the property on an ongoing basis.</p> <p>A Stage I Archaeological Assessment prepared for the property indicates that there are areas of archaeological potential on the site. The Stage I Archaeological Assessment contains a map delineating areas with archaeological potential which cannot be made public in accordance with provincial legislation.</p> <p>MTCS archaeological requirements will be fulfilled in</p>



Area of Concern	Addressed in the Master Plan			Detailed Response
	Yes	No	TBD	
Research <i>continued...</i>				
	√			<p>advance of any future development on the property. If any areas of archaeological potential may be impacted by proposed development or become endangered due to natural hazards such as extreme erosion, a Stage 2 archaeological assessment must be conducted. The foundation in the centre of the property will have to be assessed should any development of the area be considered in the future.</p> <p>Additional monitoring studies are planned as they are important to further understand erosion rates, to assess long-term changes to the Badlands feature, and to continue to inform management strategies for public access at the site.</p>
Shuttle Buses				
<p>Themes:</p> <ul style="list-style-type: none"><li>Interest in a shuttle bus system operating with the Town of Caledon</li></ul>			√	<p>Shuttle buses to the site have been suggested several times. Running shuttle busses from the pick-up points in the Caledon community provides a potential economic development and tourism opportunity for the long-term, but requires further investigation by external stakeholders and other interested parties and is outside the scope of the Master Plan. Facilities to accommodate bus drop-off and parking have been incorporated into</p>

Area of Concern	Addressed in the Master Plan			Detailed Response
	Yes	No	TBD	
Shuttle Buses <i>continued...</i>				
			√	site planning. A bus parking/drop-off location has been included in the constructed parking lot on Olde Base Line Road and is planned for the southwest parking lot on Creditview Road.