

CROWE BRIDGE CONSERVATION AREA TRAIL STUDY

Prepared for The Friends of Crowe Bridge Park

by

John Marsh and Allen MacPherson

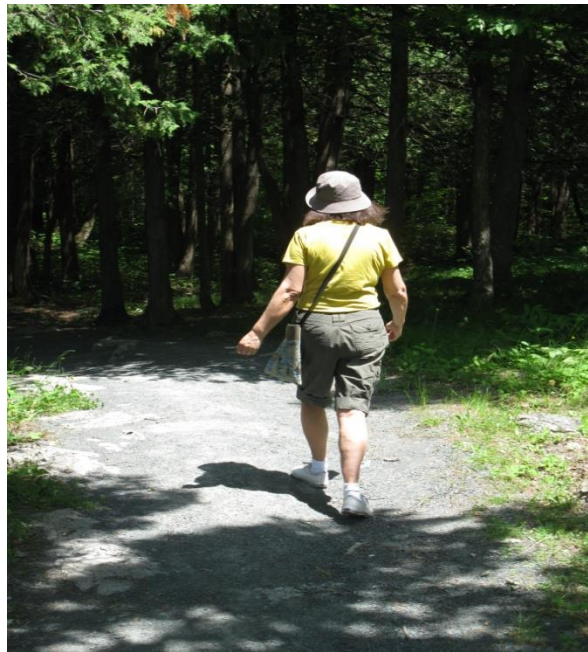
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August 2011

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**Prepared for The Friends of Crowe Bridge Park
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John Marsh and Allen MacPherson, Trail Studies Unit, Trent University**

SUMMARY

The Crowe Bridge Conservation Area has significant natural and recreational values but these have been compromised by closure of the area, inappropriate use and lack of management. Thanks to the Friends of Crowe Bridge Park, the area reopened but a study was needed to guide future trail management, and ensure natural and recreational values are protected

The Trail Studies Unit at Trent University was contracted to do the study, and students in the Geomatics Institute at Fleming College were then asked for technical assistance.

The aim of the study is to guide the improvement of the Crowe Bridge Conservation Area (CBCA), in particular its trails, environmental integrity and recreational quality.

The study was conducted from September 2010 to June 2011 using the following methods: GPS and GIS mapping, measurement of condition of the trails, interviews with stakeholders, observations of use, comparison with similar areas, and reference to the professional literature on trail planning, construction and management.

This has resulted in an accurate GIS map of the area, a draft trail brochure, including interpretive information, a website, guidelines for signage and for enabling wheelchair access, information on financial requirements, and suggestions for future trail management.

The main recommendations are:

- Maintain the area for year round passive recreation focusing on the trails and beach area.
- Revise the trail system, as shown, by closing a few short sections and adding a few others.
- Rehabilitate closed trails and prevent unauthorized motorized access, as described.
- Improve the trails to the recommended standards, thereby making them safer and more appealing, with most of the trails in the southern section becoming suitable for wheelchair access.
- Install a comprehensive system of signs, as outlined in the Sign Manual provided, indicating the entrances, trailheads, regulations, hazards and points of interest.
- Monitor and maintain the trails as outlined.
- Define and coordinate roles for those agencies, groups, individuals and volunteers involved in the management of the area and its trails.

- Recognise the financial implications of improving and maintaining the trail system, by preparing a business plan and undertaking fund raising for sustaining the conservation and recreational use of the area and its trails.
- Prepare and disseminate accurate and appealing information on the area and its trails using a brochure, as outlined, an interactive website, as described, a teachers educational kit, guided hikes, and other means.
- Consider expanding the area, especially to the south, building a permanent washroom by the beach, using or demolishing all existing buildings, and hiring a student in summer to look after the area.
- Review this study within five years, and revise as necessary to ensure the conservation and high quality recreational and educational use of the area.

The study includes information for updating the mapping and website, a list of useful websites and references, and a photographic record of the area in 2011. It is complemented by the separate report on CD of the students from the Geomatics Institute, Fleming College

August 2011

CONTENTS

1. Introduction.....	5
2. The State of the Trails.....	11
3. Proposed Trails, Uses and Design Guidelines.....	19
4. A Potential Wheel Chair Accessible Trail.....	22
5. Rehabilitating Closed Trails and Upgrading Existing Trails.....	24
6. Trail Monitoring and Maintenance.....	29
7. Restricting Motorized Access.....	30
8. Trail Signage.....	36
9. Potential Interpretation Trail and Information.....	37
10. Financial Aspects of Trail Improvement.....	40
11. Stakeholder Involvement in the Conservation Area and Trails.....	45
12. Conclusion and Summary of Recommendations.....	49
Maps:	
1. Existing trails.....	12
2. Proposed trails.....	20
Tables:	
1. Crowe Bridge Conservation Area Trail Characteristics.....	13
2. Comparison of Trail Rehabilitation Options.....	25
Appendices:	
1. References and Useful Information Sources.....	50
2. Draft Park-Trail Brochure.....	52
3. Park and Trail Website.....	55
4. Observations of the Use of the Conservation Area, 19 June 2011.....	56
5. Trail Monitoring Form.....	57
6. Example of Contents of a Business Plan for Trails.....	59
7. Trail Signage Guidelines.....	65
8. Photographs – on CD in envelope on back cover	
9. GIS maps and website files – on CD in envelope on back cover	

1. INTRODUCTION

1.1. The Crowe Bridge Conservation Area: Character, History and Administration

The Crowe Bridge Conservation Area is located in the municipality of Trent Hills, north-east of Campbellford, Ontario. It comprises 26 acres on the east side of the Crowe River divided into two sections north and south of Crowe River Road.

It was acquired by the Crowe Valley Conservation Authority from the Petherick family in 1965. A campground with 40 sites was developed in the northern section. A road was built in the southern section to provide access to a rocky beach by a weir on the Crowe River. Several trails were constructed between the beach and the entrance. There was also an entrance kiosk, washrooms, and a mini-put golf course near Crowe River Road. A wide range of non-motorised recreation activities have been permitted and it has become a popular area, especially for local residents in summer.

The Crowe Valley Conservation Authority closed the area in 2008. Subsequently there has been some vandalism of buildings, some motorized use of the trails, and littering.

Given the natural and recreational values of the area, its popularity, and problems, the Friends of Crowe Bridge Park organization was formed so that the area could be better protected and used again in a sustainable manner.

The southern section of the area has since been reopened for free public use.

In June 2010, The Friends of Crowe Bridge Park submitted a grant application to the Campbellford/Seymour Community Foundation for a project entitled: Crowe Bridge Conservation Area Swimming and Trail Upgrades: Safe, Enjoyable, Educational, Community Recreation. The application was successful and the funding provided was mainly used to contract the Trail Studies Unit at Trent University to undertake the trail study described in this report.

1.2. Aim of the Study

The aim of the study is to guide the improvement of the Crowe Bridge Conservation Area (CBCA), in particular its trails, environmental integrity and recreational quality.

The study was undertaken with:

- Recognition of environmental, financial and human resource constraints and opportunities;
- The advice of the Friends of Crowe Bridge Park and other stakeholders.
- The technical assistance of students in the Geomatics Institute, Fleming College

1.3. Work Undertaken

The study contract called for:

- Use of existing maps and field work to prepare a comprehensive maps of the trails and roads in the CBCA;
- Investigation of the possibility of a professional quality GIS map of the CBCA being produced at minimal cost by a team in the internationally recognized GIS program at Fleming College, Lindsay;
- Preparation of an inventory of trails classified according to condition, difficulty and suitability for inclusion in the future official trail system;
- Provision of technical advice on the rehabilitation of unacceptably degraded trails;
- Identification of means for restricting motorized access to parts of the CBCA;
- Preparation of a plan for the trail signage required;
- An outline of a potential interpretive trail;
- An outline of a potential wheel-chair accessible trail;
- Provision of a draft trail brochure that could be distributed to the public;
- A summary of the financial implications of implementing the recommendations, and the importance of the CBCA being financially sustainable;
- Suggestions regarding the roles of the various stakeholders, including the municipality, the Friends and others in managing the area sustainably;
- Provision of a folder of related information.

1.4. Methods

To achieve the aim of the study and undertake the work required, the following methods were used.

Consulting

Consultations regarding the area's trails, problems and management needs were conducted with a wide range of people between August 2010 and June 2011.

- | | |
|------------------|--|
| 10 August 2010 | - meeting and tour of conservation area with Alan Appleby |
| 23 November 2010 | - meeting |
| 26 November 2010 | - meeting with Alan Appleby and Board members of Friends of Crowe Bridge Park |
| November 2010 | - participated in General Public Meeting on the Future Operations of Crowe Bridge Park, arranged by the Municipality of Trent Hills in Campbellford. |
| November 2010 | - brief discussion with Graham Wilson re. geology of area and interpretation. |
| 1 December 2010 | - meeting with Scott Rose, Community Services Officer, Municipality of Trent Hills, Campbellford |
| 13 January, 2011 | - meeting |
| 27 January 2011 | - by telephone, Tim Pidduck, General Manager, Crowe River Conservation Authority. |

- 8 April, 2011 - meeting with Scott Rose, re. providing information and reviewing proposed GIS mapping.
- 15 April, 2011 - meeting with Tim Pidduck and Marnie Guindon, re. data for GIS mapping, and information on management issues.

Measuring existing trail conditions

The condition of the existing trails in the southern section of the area was recorded in November 2010.

The condition of each trail was measured at a 10m interval, with additional measurements in between where serious trail degradation was observed.

The following measurements were made at each location:

- Width of bare earth
- Depth of trail below adjacent levels
- Slope along the trail

In addition the surface material of the trail, drainage problems, and any evidence of motorized or trail bike use was recorded.

An oral record of observations of the trails was made in October 2010 and is available on a CD.



Photographing the trails

Numerous digital photos of the trails and other built and natural features in the conservation area were taken in the Fall, Winter and Summer seasons. A selection of these has been provided on a CD. The students from Fleming also took some excellent digital photographs which have been included with their submission on CD.



Trail mapping

Existing maps of the park and trails were obtained. These included:

- Untitled map of the Conservation Area, 8.5x11, black and white, showing roads, parking lots, trails, campsites and other facilities. No date.
- Map, Crowe Bridge Conservation Area, 8.5x11, black and white, shows roads, trails and other facilities. Produced by Crowe Valley Conservation Authority. No date.

Three students in the Fleming College Geographical Information Systems (GIS) program undertook to prepare a digital map of the park and trails. They summarized this work as follows. Data were acquired primarily by field surveying using two GPS units (Trimble: GeoExplorer® 3). Positions of point features and corners of area features were averaged over 40 position readings; trails the single stream, and park boundaries on the North side of the park were traversed while taking position readings every 3 seconds. These data were converted into shapefile format using GPS Pathfinder Office® v2.8. ESRI® ArcMap v9.3 was used for point

averaging and the digitizing of area features as well as defining projections (all data were projected to NAD83 UTM Zone 18N). Trail features were smoothed and simplified in Adobe® Illustrator CS4 using MAPublisher®, this eliminated the jerky, straight-lined appearance associated with raw GPS data. These working data layers were exported from Illustrator and archived along with the unaltered survey data.

Existing data was acquired from the CVCA. These data were used as a check of the accuracy of the surveyed data and to supplement missing data from the SSFC's surveying. The CVCA data also includes park boundaries for the south side of the park. These boundaries are difficult to determine at the site, due to a lack of physical indicators; therefore, the existing CVCA boundary data was used for the Southern boundaries of the park.

The National Topographic Database (NTDB) Zone 18N 31c05 data were used to for the road feature in the park map, and NTDB Zone 18N 30m, 30n, 31c, and 31d data were used for the road, lake, river, and city data used in the inset map. CanVec Zone18N 31c05 were used for the river polygon on the park map.

These data along with the CVCA data are provided with the rest of the park data on a CD with this report. It was agreed that the data would be archived at the Municipality of Trent Hills and the Trail Studies Unit at Trent University and will be accessible for any updating needed in future.

Observation of use of the area

On 19 June 2011, John Marsh made observations of the use of the area trails and around the beach. A summary of these observations is provided in Appendix 4.



Presentations

On 28 November 2010, John Marsh made a brief oral presentation on the trail study to the AGM of the Friends of Crowe Bridge Park, in Campbellford.

On 6 June 2011, the Fleming students made a presentation at Fleming College of their draft report to: Appleby, members of Friends of Crowe Bridge Park, and staff of Crowe Valley Conservation Authority.

On 21 June 2011, the Fleming students presented an exhibit about their work at an Open House held by the Geomatics Institute at Fleming College, Lindsay that was attended by several persons involved with the Crowe Bridge Conservation Area.

The authors of this report have indicated their willingness, if requested, to present a summary of their report and its recommendations at a public meeting in Campbellford later in 2011.

Submission of final report

An outline of the contents of this report was presented to Alan Appleby in June 2011. This report was submitted to Alan Appleby for the Friends of Crowe Bridge Park, August 2011.

Acknowledgements

We would like to acknowledge the special help with this study of the following:

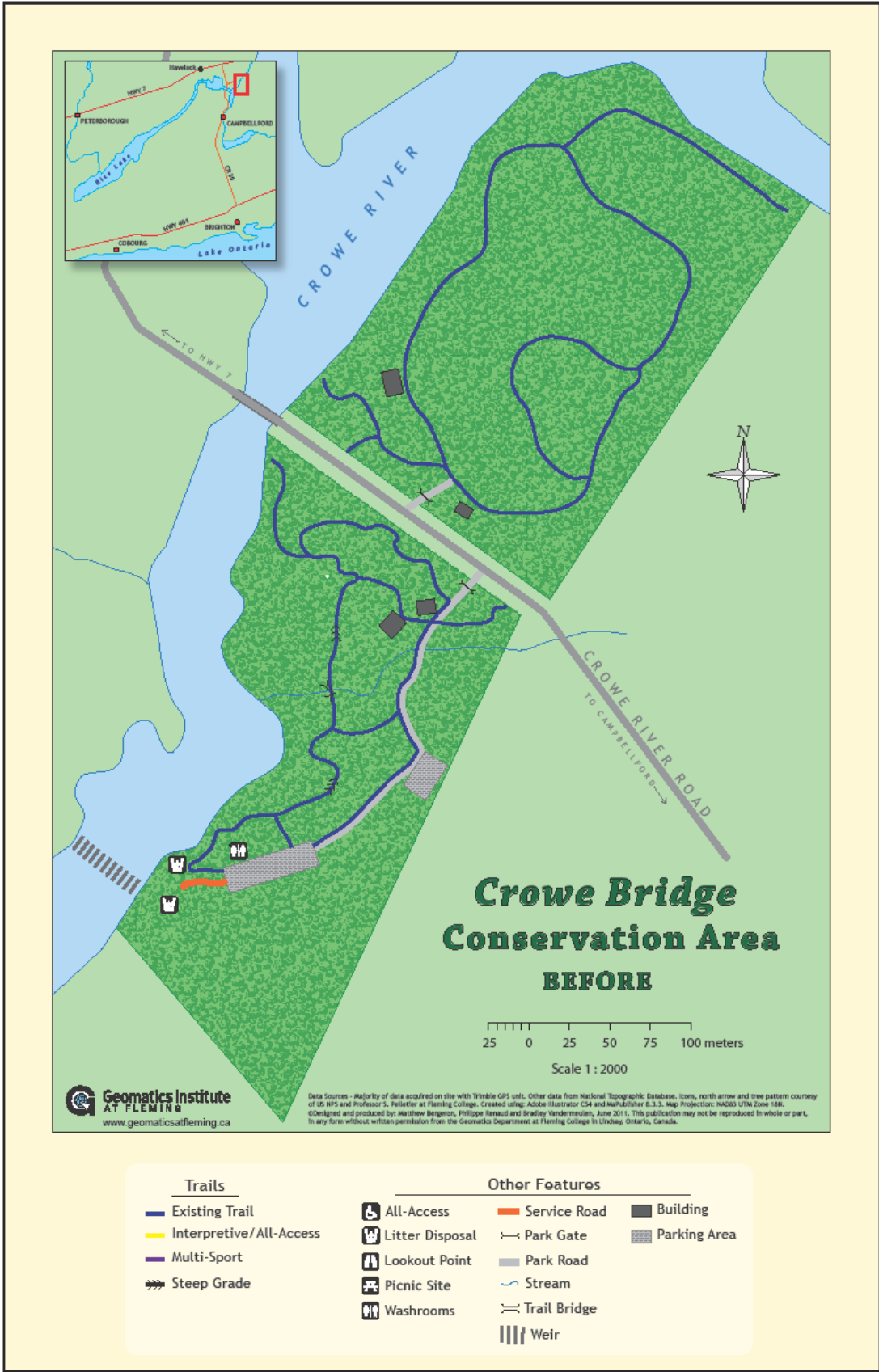
- Alan Appleby
- Friends of the Crowe Bridge Park
- Scott Rose, Community Services Officer, Municipality of Trent Hills, Campbellford
- Tim Pidduck, General Manager, Crowe Valley Conservation Authority
- Marnie Guindon, GIS Technician, Crowe Valley Conservation Authority

2. THE STATE OF THE TRAILS

2.1. The Present Trail System

The present trail system is shown in Map 1, next page, prepared by the Fleming College students.

It indicates the official, maintained trails but not unofficial trails.



2.1. Results from Measuring Existing Trail Conditions

Table 1. CROWE BRIDGE CONSERVATION AREA TRAIL CHARACTERISTICS, 2010

Trail from Beach to Entrance

<u>Distance</u> (metres)	<u>Bare Width</u> (metres)	<u>Slope</u> (deg.)	<u>Max.Depth</u> (cms)	<u>Surface</u>
0	1.85	0	8	screenings
10	2.47	5	4	exposed rocks
20	2.00	5	5	screenings, no clear edges
30	1.72	0	2	screenings
40	1.70	0	4	screenings
50	1.50	2	2	screenings, bare rock
60	2.37	4	6	screenings, ATV ruts
70	1.52	3	4	screenings
80	1.98	10	7	screenings, rock
90	1.62	2	2	screenings
100	2.27	8	1	screenings, rock
104	2.07	22	9	screenings, rock
110	2.98	7	7	screenings
120	2.92	1	6	screenings
130	2.27	1	5	screenings, wide corner
140	2.67	0	3	trail to river on west roots exposed
150	2.77	2	3	screenings, root, rock
152	trail divides, next measurements are for left, west branch			
160	1.42	1	5	between two trees
170	1.32	5	5	screenings
174	edge of creek, 3 m wide, 10 cm deep, with planks over			
180	1.60	8	4	screenings
190	2.02	5	2	screenings
200	2.07	9	5	screenings
210	2.12	5	8	screenings, ATV rut
220	1.90	6	see below	screenings
Trail crosses mini valley, trail edges slope down steeply, west edge of trail 25 cm below centre. East edge of trail 10 cm below centre, needs work				
230	2.42	1	5	screenings
232	corner where ATVs have caused ruts 10 cm deep			
240	1.82	4	3	screenings
248	side trail goes west to river			
250	2.77	4	11	soil, corner, ATV ruts
260	2.10	2	3	trail edges indistinct
Trail runs through mini-put golf course				
270	2.00	0	3	trail edges indistinct

280	1.87	5	3	screenings, rock on side
290	1.84	0	5	trail slopes down on both sides
300	trail meets road, very wide, screenings			

Side Trail East to Road

152	trail divides, next measurements are for right, east branch			
162	1.92	10	10	screenings, ATV, bike ruts
166	steepest slope			16
172	1.99	8	4	soil, wheel ruts
182	1.79	2	3	screenings
190	trail meets road, parking area			

Side Trail West to River

248	side trail leaves main trail			
258	1.75	4	0	through golf course
268	1.85	10	0	golf course bricks on north side
278	2.00	3	3	south edge indistinct
288	1.77	4	6	golf course to north, tree to south
290	side trail goes west to river			
292	wheel rut on corner, 13 cm deep			
298	1.55	6	8	screenings, wheel rut
308	2.05	3	2	bricks on south
318	1.80	11	2	wheel rut, wood deck on south
328	2.00	3	2	edge indistinct
338	1.88	4	1	screenings, pine needles
348	2.00	6	1	edge indistinct
358	2.00	4	0	golf platform on south
368	1.50	3	0	wheel ruts
378	2.00	3	4	edge indistinct
381	wood planks dumped on trail, need to be removed			
388	2.00	3	4	screenings, edge indistinct
398	2.00	3	2	screenings, edge indistinct
408	2.00	2	5	screenings, edge indistinct
416	trail meets road near entrance gate			

Trail Opposite Entrance Buildings, going east to highway

0	1.8	0	5	screenings
10	1.25	3	0	soil and weeds
	trail flooded, needs draining and raising			
20	trail flooded, needs draining and raising			
30	1.4	10	34	old ATV ruts
40	1.3	6	3	rocks, leaves, weeds
	all grass			
Trail merges with highway grass verge. Need fencing to close access to this trail.				

Unofficial Trail Down Limestone Gulley, from point 225 m along trail from beach to entrance. Leads to open space near river, from where rough trails follow edge of river to lookouts on cliffs.

Unofficial Trail West from Parking Lot by Beach

Passes capped vault, across main trail to rock overlooking the river. Some screenings.

2.2. Conclusion Regarding the State of the Trails

Most of the trails are in good condition. There is one creek crossing and steeper areas that need boardwalks or rerouting. Some erosion has occurred, particularly on a few bends, as a result of ATV or dirt bike use. While the official trails can be recognized by their surface of limestone screenings, there are many unofficial trails, especially to, and along the river in the southern section, that need to be improved or closed.

Specifically:

- At 174 metres from beach trailhead the trail crosses a creek which can be at least 3 m wide, 10 cm deep. Some planks have been put across (see photo). A bridge is needed here.
- At 80 and 104 metres from beach trailhead the trail is 10 degrees or steeper. Grade needs to be reduced here.
- At 225 metres from beach trailhead, where trail crosses small gully, the east edge of the trail is 10 cm below centre. Trail needs leveling here.
- At 232 metres from beach trailhead there is a sharp bend in the trail where ATVs have caused ruts 10 cm deep. Trail needs leveling here.
- The trails leading off the main trail from the beach trailhead to the entrance east to the road, and west to the river have several sections with grades steeper than 10 degrees, and ruts on corners.
- More limestone screenings need to be added where underlying soil is exposed.

Most of the trails, given their length, grades, altitude gain and surfacing, can be regarded as easy to travel on. However, this does not mean that they may not pose challenges for users who are unfit, disabled, inappropriately clothed, or in bad weather. A few improvements, maintenance to high standards, comprehensive signage and good information can make the trails even easier and appealing to more people.



2.3. Conclusion Regarding the State of Other Features Related to Trails

The park has good road access to parking lots and the beach area in the southern section, around the northern section, and to all trailheads.

There are several official parking areas, notably by the beach. These are unpaved, but flat and in good condition, though liable to be dusty.

There are various buildings, now disused, but boarded up and in relatively good condition, in both sections of the conservation area. These might have a use that complements the trails and conservation area generally. It may be desirable to keep a building at the entrance to the southern section and another at the entrance to the northern section. The outer walls of each could be used for exhibiting maps, regulations, emergency information and interpretation materials. They could also be used by any seasonal staff or volunteers that might in future be located in the conservation area. One might even be suitable as a small visitor/interpretation centre. However, retention and use of these buildings would require maintenance, security and vandalism to be addressed.



Portable toilets and garbage cans are provided at the beach parking area in summer. Consideration might be given to a new building near the beach and parking lot to provide better wheelchair accessible washrooms, change facilities, and information.

There are some picnic tables by the beach, but most of them are on rock and lack shade. More picnic tables in the shade by the beach would probably be appreciated. Some might be obtained from the pile of abandoned picnic tables in the northern section.

The mini-put golf course near the entrance to the southern section was well built and, with relatively little work, could be renovated for use. If this were to be done, all of the trails running around it would have to be retained and maintained.



This study does not deal with the beach area for which a separate study, risk assessment and management plan should be developed.

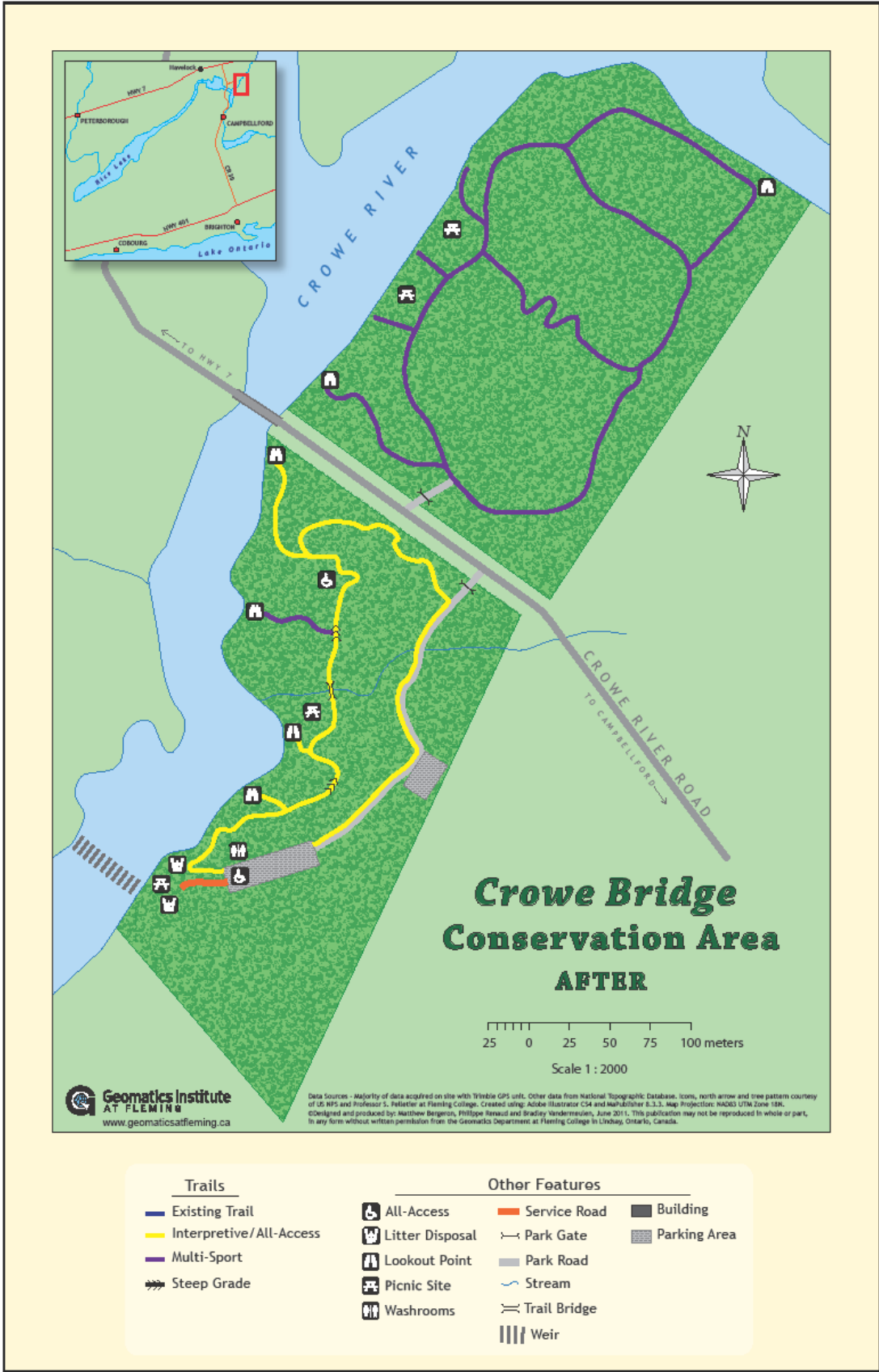
3. PROPOSED TRAILS, USES AND DESIGN GUIDELINES

3.1. The Proposed Trail System

The proposed trail system is designed to:

- Provide access to most of the property, especially the more interesting locations
- Enable a variety of non-motorised recreation activities
- Enable recreational use in all seasons
- Minimise the need for new trails, and eliminate redundant ones
- Avoid hazardous sites
- Avoid environmentally sensitive and significant areas
- Minimise environmental degradation, especially erosion
- Provide opportunities for environmental interpretation and education

The proposed trail system is shown in Map 2, next page. It would require the closing of a few side trails, and unofficial trails, the adding of a short section of trail to provide another loop in the northern section, and some minor rerouting to reduce grades and avoid wet areas.



In the southern section:

The main trail would run, as now, from the beach to the park entrance. There would be several spurs to give access to the river. Two trails would run from the main trail to the road. So, users would have the option of going and returning by the same trail, going or returning along the park access road, or completing a loop using one of the trails between the main trail and the road.

In the northern section:

The main trail would follow the existing roadway that circles within the property. The roadway looping from this over the highest point would be retained. A newly constructed link between that loop and the trail by the river would provide an additional loop. Several spur trails would provide access to the river. A short section of trail by the river that leads to private property where no trespassing signs have been posted should be closed.

3.2. Trail Design Guidelines

These guidelines are not intended to be a substitute for the site specific design and engineering that responds to the local conditions, development requirements and safety concerns.

South Section

Walking and wheel chair accessible- closed for winter use

Clearing Width:	4.0m
Clearing Height:	3.0m
Tread Width:	2.0m (two-way)
Tread Surface:	compacted stone fines
Desirable Grades:	5% with a maximum sustained grade of 8%.
Form:	Loop
Spur Trails:	Viewing/observation points/areas
Wheelchair:	2.0m (two-way)
Drainage:	Both edges of trail- tread slope 2-4%
Obstacles:	Avoid or get around objects
Bridge:	2.5 m wide with railings where needed, 8cm high edge if no railing

North Section

Walking/hiking, mountain biking, cross-country skiing and snowshoeing- not fully accessible.

Clearing Width:	4.0m
Clearing Height:	3.0m
Tread Width:	3.0m
Tread Surface:	Compacted stone fines
Desirable Grades:	Open
Form:	Series of Loops
Spur Trails:	Viewing/observation points/picnic areas

The wider tread width here reflects the width of the existing roads and would facilitate winter uses. The tread width in both the North and South sections should also be sufficient to allow staff to travel by ATV for maintenance or emergency purposes.

4. POTENTIAL WHEELCHAIR ACCESSIBLE TRAIL

4.1. Introduction

The potential for a wheelchair accessible trail was evaluated using the recognized criteria of Universal Trail Assessment (UTA). It was determined that with some minor alterations to an existing trail in the southern section (see Map 2) a wheelchair accessible trail conforming to the recognized criteria can be provided in the conservation area.

The trail will need to be monitored and maintained to ensure it continues to meet these criteria and the requirements of visitors using wheelchairs.

Consideration should be given to having an accessible portable toilet and designated parking area for disabled.

The guidelines suggested are based on the best practices indicated in the Ontario Best Trails manual and by the US Forest Service in an attempt to maximize trail accessibility

The construction standard that has been identified incorporated the universal design philosophy of developing facilities to serve all people, to the greatest extent possible. The goal of universal design is to ensure integration of all people, without separate or segregated access for people with disabilities.

Signs should be posted at the trailheads indicating trails that have been evaluated for accessibility, and providing information to all users concerning grade, width, and other characteristics that affect accessibility.



Use International symbol for accessibility

4.2. Construction Guidelines

The designated accessible trail should have a trail grade: up to 1:12 (8.33%). No more than 30% of the total trail length should exceed a trail grade of 1:12 (8.33%).

The cross slope of trail should not exceed 1:20 (5%). Cross slope, or the side-to-side slope of a trail, can be difficult to traverse. At the same time, trails need to be designed to provide sufficient drainage to prevent accumulation of water and water damage to a trail.

The surface of accessible trails should be both firm and stable; crushed stone, fines, packed soil, and other natural materials can provide a firm and stable surface. The purpose of ensuring the surface firmness and stability is to prevent mobility devices from sinking into the surface,

thereby making it difficult for a person using crutches, a cane, or a wheelchair to move through that area with reasonable effort.

The clear tread width should be at least 36 inches (91.4 cm). The clear tread is the width of the usable trail tread, measured perpendicular to the direction of travel and on or parallel to the surface of the usable trail tread. This trail is recommend to have a 2 m wide tread (72 inches)

Any tread obstacles should not exceed 2 inches (5 cm) in height.

The signs be posted at the trailhead and it has been evaluated for accessibility. At a minimum, in addition to the standard information including the name and length of the trail, these signs should include the typical and maximum trail grade, typical and maximum cross slope, typical and minimum tread width, surface type and firmness, and obstacles.

5. REHABILITATING CLOSED TRAILS AND UPGRADING EXISTING TRAILS

To improve the trails system some construction and maintenance work is required in a few places, and some existing unnecessary trails should be closed and revegetated.

5.1. Rehabilitating Closed Trails

There are many reasons the closure of a trail may be required. These include:

- Environmental impacts (i.e. damage to vegetation, disturbance to fauna/habitat etc)
- Low level of recreational use
- Duplicates existing/nearby road network, resulting in unnecessary maintenance costs
- Erosion/water quality impacts (i.e. sedimentation of streams, important water catchment area)
- Impacts on adjoining landholders/residents
- Public safety

The land in Crowe Bridge Conservation Area is reserved for watershed and recreational purposes. The trails in this area must be built and maintained to a high environmental standard, designed, constructed and maintained for public safety and have a rustic appearance.

The assessment of the existing trails indicated common problems such as excessive erosion, muddy stretches in areas of water-saturated soils and the development of “social” trails – shortcuts made by hikers that can cause future problems.

As managers/volunteers for the CBCA you need to select the most suitable rehabilitation technique from a continuum of three basic choices:

1. Do nothing except close disturbed areas; hope for natural revegetation.
2. Improve site soil conditions, close area; hope for improved natural revegetation.
3. Improve site soil conditions and intervene with revegetation; hope for successful plant establishment to provide rapid results.

All three approaches have some application to different sites, each with a different cost and result, as shown in Table 2.

Table 2: Comparison of Trail Rehabilitation Options

A: Rest the site	B: Improve conditions	C: Intervene on site
- close site, - wait for natural revegetation,	- close site, - scarify soil, - place logs and brush to improve chance for natural revegetation, - consider fertilizer, - consider mulch to improve chance of seed establishment	- close site, - scarify soil, - seed or transplant with native species - consider fertilizer, - water the site - consider mulch
- poor success rate - very slow natural revegetation	- good success rate, - will take time,	- good success rate, - immediate results, - may be risky on sub-alpine sites,
- no maintenance,	- low maintenance, - needs long closure from use,	- needs maintenance, - needs long closure from use,
- low cost,	- moderate cost,	- high cost,
- could be used on braided trails where there is no soil,	- suitable on some sub-alpine sites, - may be best option for cost effect,	- suitable where there is source of native plants nearby, or where vegetation will be cleared nearby, - water supply needed,

- Use the technique best suited to each site. Option B is often the most cost effective with the least risk. Use an opportunistic approach that would use Option C methods if suitable conditions exist, when money, labour and plant material is available during site upgrading.
- Plan the rehabilitation carefully, assessing suitable species (e.g. rooting habit, nutrient and soil needs, resistance to trampling), soil preparation, planting techniques, fertilizer or water needs, mulches, wildlife impacts, season and weather for revegetation, and maintenance.
- Educate the public about rehabilitation efforts to avoid trampling of closed areas.
- Make a commitment to maintain rehabilitated sites as needed, and monitor the success of each project.

5.2. Use Proven Rehabilitation Techniques

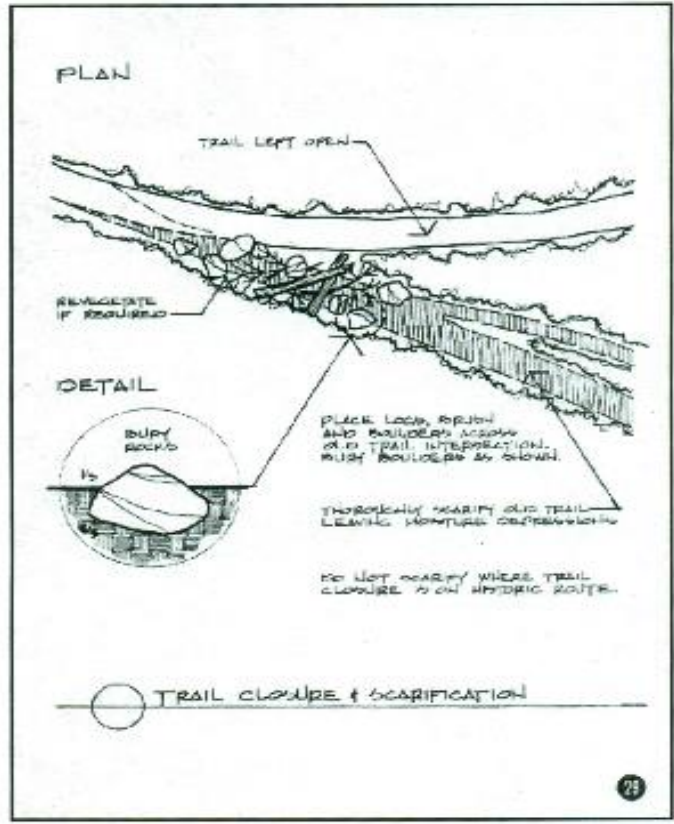
- Consider rehabilitation only where this will not conflict with preservation of artifacts or other heritage resources.
- Use rehabilitation techniques known to work in very tough low maintenance situations.

- Try to rehabilitate in the fall, when plants are dormant, and to allow good growing conditions when there is plenty of spring soil moisture. Transplanted native sod plugs will have up to a month of growing in late spring and early summer before peak hiking season begins. Transplant during cloudy or wet weather.
- Rely on natural revegetation of prepared soil surface if local or imported native plants are not available.
- Prepare the soil by hand scarifying compacted areas. Allow natural reseeding to occur where transplanting will not be done; scarify to 5-10cm.
- Control erosion from scarified rehabilitation sites. Consider using mulch to reduce erosion and improve the soil water retention capacity. Watch for contaminating weed species in mulch, and avoid using wood byproducts unless prepared to add fertilizer.
- Place rotting logs or brush on rehabilitation sites both to control traffic and provide an ongoing source of soil nutrients.
- Use local or imported native plants and seeds to rehabilitate sites. Avoid using plant material from sites with different microclimates or elevations. Use only plants adapted to the site. Select species with compact roots, that are resistant to trampling, and are known to be pioneer species suited to disturbed sites.
- Salvage native plant material from any sites to be cleared, use this material for rehabilitation on adjacent sites; salvage plugs of native material up to .5m in diameter to increase success rate. Include all forest litter in plug transplant.
- When doing trail work, salvage native sod to transplant into braids designated for closure.
- Dig up material for transplanting carefully, and replant as soon as possible, take as much native soil with the plug or raft of material as possible.
- If limited rafts or plugs of native material are available, space them out in the rehabilitation area, and allow for natural in-filling.
- Leave a small depression around the transplanted plug to collect any rainfall.
- Water rehabilitation sites thoroughly after planting, and periodically, if possible, the following growing season.
- Consider using slow release organic fertilizers when transplanting plants. Fertilizers pollute, and may not improve survival of transplanted native material. They may be more effective in promoting natural revegetation on a scarified site.
- Ensure use of rehabilitated sites is eliminated, by placing appropriate barriers, signs, and or providing educational material at the trailhead.
- Monitor the success of rehabilitation efforts.

5.3. Upgrading the Existing Trails with Proven Techniques

Trail upgrading includes tasks required to raise the standard of a trail or re-build worn out portions. These deal with the common problems of muddy and braided sites resulting from poor drainage, creek or depressed area crossings, trail sections on steep loose fluvial gravels, trail sections over boulders and rough terrain, or steep slopes where drainage runs along the trail surface. Consider 7 main types of typical trail upgrading:

1. Fill deeply trenched trail areas to grade, keep existing preferred alignment rehabilitate braids
as needed,
2. Widen the clearing or trail tread,
3. Raise the trail above grade with fill, where wet conditions persist,- rehabilitate braids at grade
as required,
4. Suspend the trail above grade with boardwalk, where wet conditions persist,
5. Reroute the trail to better alignment with better drainage and grades.
6. Construct water bars and drainage ditches to alleviate trail erosion,
7. Construct bridges over creeks,



6. TRAIL MONITORING AND MAINTENANCE

The trails will need to be monitored and maintained if they are to provide safe, appealing and educational experiences, while ensuring minimal environmental impact.

All the trails should be monitored at least once each year using criteria such as those on the monitoring record form given in Appendix 5.

Maintenance requirements should be noted and those responsible for maintenance informed as soon as possible.

Maintenance is routine or periodic repair of trails or trail segments to restore them to the standards to which they were originally designed and built.

Maintenance includes but is not limited to:

- Removal of debris and vegetation, such as downed trees or broken branches on a trail; clearing trail of encroaching brush or grasses; and removing rock slides.
- Maintenance of trail tread, such as filling ruts and entrenchments; reshaping a trail bed; repairing a trail surface and washouts; installing rip rap (rock placed to retain cut and fill slopes); and constructing retaining walls or cribbing to support trail tread.
- Erosion control and drainage; replacing or installing necessary drainage structures, such as drainage dips, water bars, or culverts; and realigning sections of trail to deter erosion or avoid boggy areas.
- Repair damaged, or vandalized parts of structures, such as sections of bridges, boardwalks, information kiosks, fencing, and railings; painting; and removing graffiti.
- Installation and replacement of signs.

The accessible trail will likely require more frequent maintenance.

7. RESTRICTING MOTORISED ACCESS

7.1. Introduction

There is some evidence (tire tracks, parallel ruts in trails etc) that some motorized use of the trails has been occurring.

As the conservation area is small, subject in places to environmental damage, and well used it is recommended that, as intended now, there be no motorized use of the trails.

Most participants are satisfied with their outdoor recreation experiences. The challenges discussed in the preceding section, however, can lead to severe consequences if not managed properly. In addition, the nature of the recreation experience limits the manager's options in addressing the potential negative impacts of trail use.

A wide variety of possible responses to addressing conflict problems exists. The following are techniques used to overcome conflict-related problems on trails (listed from most to least frequently used):

- signage
- education
- meeting with user groups or individuals
- expanding facilities
- police or security patrols
- enforcement of regulations
- brochures articles in newsletters or local newspapers
- imposing speed limits
- volunteer trail patrols
- partial closings
- fences, bollards , large rocks



7.2. Management Responses

Once a trail is physically in place, managers can still have a tremendous influence on user safety, natural resource protection, and user experiences. Management actions can take many forms, from doing nothing to closing areas. The alternatives can be grouped into three categories: information and education, user involvement, and regulations and enforcement. Considerable overlap exists among these three groups, of course. This is especially true of information/education and user involvement (e.g., a volunteer trail patrol provides information and educates users, involves users in taking responsibility for their own trails and use, and may well assist in communicating and enforcing regulations and preventing resource damage). Information and education, user involvement, and regulations and enforcement are discussed separately below.

7.3. Information and Education

Uninformed, unintentional, unskilled, and careless actions by users are often cited as the causes of many problems in outdoor recreation areas. Educating the public and persuading them to act responsibly are effective strategies for improving behavior on trails. Whether the behavior being promoted is called trail etiquette, trail ethics, trail courtesy, or trail sharing, information and education efforts are almost universally supported as an essential strategy for providing opportunities for high-quality recreation experiences. Influencing human behavior through information and education is an attractive alternative to controlling or coercing compliance through more heavy-handed techniques that can impact recreation experiences.

Trail etiquette guidelines are found in many brochures and other literature produced by a wide variety of trail organizations and management agencies. The following techniques from the most to the least frequently used to promote ethics are: signs, brochures, security patrols, trail guides, presentations to civic groups, presentations to children, visitor contact areas, volunteer patrols,

surveys, press releases, and trail-user groups/word of mouth. The most effective methods are security patrols followed by signs and brochures.

7.4. User Involvement

In many respects, user involvement is a special, intensive kind of active, hands-on user education. By actively involving users in trail planning, management, or conflict resolution, they are forced to work together and, as a result, can begin to better understand and appreciate one another's needs, expectations, and perspectives. Those unaffiliated or independent users are often less informed and more in need of education.

7.5. Regulations and Enforcement

There will always be some who cannot be influenced by positive, less forceful means of persuasion. The need for regulations and effective enforcement is needed for those whose lack of consideration could negate the positive impact made by the majority. Regulations and enforcement efforts are most effective when developed and implemented with the input and cooperation of affected user groups. It is also important to communicate to users the reasons for any regulations adopted. This will help minimize misunderstandings and confusion among those affected. However, it is important to re-emphasize that excessive regulations and enforcement can spoil recreation experiences for many users. Conflict with other users could be effectively reduced through elaborate surveillance systems and heavy-handed enforcement where all inconsiderate users were immediately "cuffed and stuffed" into awaiting police cruisers. But the freedom and sense of escape so many trail users seek would be lost. Only the minimum intrusion necessary to achieve area objectives should be employed.

7.6. Gates, Bollards and other Barriers

Some trail managers install bollards, gates, or other barriers to restrict unauthorized use. Trail managers should question whether bollards, gates, fences, or other barriers are needed at all. *For the purpose of the bullets below, "bollard" includes bollards, gates, fences, or any other barrier constructed or installed next to, within, or across a trail presumably to restrict unauthorized access.*

- Even "properly" installed bollards constitute a serious and potentially fatal safety hazard to unwary trail users. In addition, no bollard layout that admits bicycles, tricycles, and bicycle trailers can exclude single-track motor vehicles such as motorcycles and mopeds. For these reasons, bollards should never be a default treatment, and should not be used unless there is a documented history of intrusion by unauthorized cars, trucks, or other unauthorized vehicles.
- Bollards are often ineffective: a determined person is likely to go around or go through. This may result in additional maintenance costs for the trail, either to repair or replace the bollards, or to repair trail or landscaping damage where vehicles go around the bollards.
- Bollards are often a hazard to trail users, who can crash into them, possibly resulting in serious injury or death. Poorly installed bollards can lead to head-on collisions. Bollards

are involved in "second user" crashes, where the first user hides the bollard until it is too late to avoid it, even if the first user has adequate sight distance. These crashes can produce serious or incapacitating injuries. This can happen to pedestrians as well as bicyclists or other higher speed users.

- Unjustified bollards can create liability exposure. Trail managers should consider whether or not they increase their liability if they install bollards, gates, fences, or other barriers.
- Bollards, gates, fences, or other barriers can slow access for emergency response.

If installed, bollard, gates, fences, or other barriers:

- **Must not** restrict access for people with disabilities.
- Must be easily visible, especially in low light conditions.
- Should have sufficient sight distance to allow users to adjust speed. Insufficient sight distance increases the likelihood that bollards will be dangerous hazards.
- Should permit passage, without dismounting, for adult tricycles, bicycles towing trailers, and tandem bicycles. All users legally permitted to use the facility should be accommodated; failure to do so increases the likelihood that the bollards will be dangerous hazards.

According to *Trails for the Twenty-First Century, 2nd Edition* (April 2001), published by the [Rails-to-Trails Conservancy](#):

If you determine that a traffic barrier is necessary, ensure that barriers are well marked and visible to bicyclists, day or night... Bollards must be at least 3 feet tall and should be placed at least 10 feet from the intersection. This will allow trail users to cross the intersection before negotiating the barrier posts...

One bollard is generally sufficient to indicate that a path is not open to motorized vehicles. The post should be placed in the center of the trail tread. Where more than one post is necessary, a 5-foot spacing is used to permit passage of bicycle trailers, adult tricycles, and wheelchairs. Use one or three or more bollards, never two. Two bollards, both placed in the paved portion of the trail, will channel trail users into the center of the trail, causing possible head-on collisions. Bollards should be designed to be removable or hinged to permit entrance by emergency and service vehicles.

Additional Notes:

- Spacing between bollards should permit passage of bicycle trailers and adult tricycles without dismounting, and manual and motorized wheelchairs. A "5-foot spacing" means 5-foot gaps between bollards, not a 5-foot center-to-center placement.
- Bollards should be designed to be knock-down, removable, or hinged to permit entrance by emergency and service vehicles. A knocked-down bollard must be reinstalled or removed immediately to avoid having an additional safety hazard.
- Hardware installed in the ground to hold bollard or posts must be flush with the surface to avoid having an additional safety hazard.

- Bollards, gates, fences, or other barriers outside the trail tread (on each side) may be acceptable if there is sufficient clear trail tread to avoid head-on collisions and to ensure accessibility. But the purpose of the bollards, gates, fences, or other barriers should be questioned.



Removal bollards – stones are used to prevent vehicles from going around bollards. Sight lines are long and straight with proper signage installed. Bollards are yellow with reflective tape. Sticker signs are placed on Bollards indicating no motorized vehicles. (Kawartha Trans Canada Trail, 2009)



Two round bollards and one square bollard (removal) with side arms attached that are removal. This allows to have one bollard installed and reduces the distance between the other bollards to restrict motorized use but allow for cycling and horseback riders access. (Kawartha Trans Canada Trail 2009).

8. TRAIL SIGNAGE

Signage is important to ensure the safe, satisfying and educational use of the conservation area and trails, and the protection of the environment.

The present trail signage is inadequate and needs to be improved.

Signage is needed in three types of locations:

- At the park entrance and along the road directing visitors to the trails
- At the trailheads (starting points)
- Along the trails

Various types of signage are required:

- Regulatory signs, e.g. prohibited uses of trails
- Warning signs, e.g. cliff edge, poison ivy
- Directional signs
- Interpretive signs, e.g. rock formation

To implement this signage system, reference should be made to Appendix 7, Trail Signage Guidelines

9. POTENTIAL INTERPRETATION TRAIL AND INFORMATION

The conservation area has some potential, already recognized, for environmental interpretation for the general public and outdoor education for school children.

In particular there is the potential to interpret:

- Vegetation species, notably: trees, wildflowers
- Wildlife species, notably: birds
- Geomorphological features, notably: limestone erosion, fossils

Various things could be done to develop the interpretive and educational potential of the park and trails, such as:

- Prepare a brochure to provide information on features along an interpretive trail
- Prepare an interpretive guidebook to the park
- Offer guided walks
- Install some interpretive signs
- Prepare a kit to encourage and assist teachers to educate students in the park
- Publish articles about the park in the local media
- Provide interpretive information on a website about the park

A draft trail brochure is included with this report (Appendix 2, and CD by Fleming College students). This identifies some interpretation locations, which are indicated on the map and need to be indicated by numbered posts along the interpretation trail.

Some specific features along these trails that can be interpreted are indicated in the draft interpretation brochure (see Appendix 2). A wider array of features that might be interpreted is indicated in the interpretation handout for Ferris Park prepared by Graham Wilson (2010).

Points of interest along the trail could be identified with numbered posts with a brochure being made available indicating what to look for around each post. Interpretation signs and displays might also be used but these can be expensive, and vulnerable to weathering and vandalism.

The conservation area and features along its trails could also be interpreted using various electronic media. Information about sites that visitors can locate using a GPS unit can be delivered by iPod. Such a service is provided for the Kawartha Trans-Canada Trail and is explained on the KTCT website. A similar service for visitors to the Warsaw Caves Conservation Area to use a GPS unit to identify Points of Interest is explained on the website: www.warsawcaves.com.

Guided hikes by volunteer naturalists and teachers could also be offered and tailored to specific interests.

The education potential of the conservation area and trails should be developed with reference to school curricula if the use of the area by teachers and students is to be maximized. An example of this is given below.

9.1. Example of Lesson Relating to School Curriculum Using the Kawartha Trans Canada Trail

Trans Canada Trail Lesson Plan # 2

Habitats Big and Small

Grade 4 or Grade 6

Subject: Science (Life Systems)

Season: Fall or late Spring

Length: Approximately 140 minutes

Overview:

After an in-class introduction to trail-use ethics students will use a portion of the Kawartha Trans-Canada Trail for a whole-class exploration of a large habitat, then, in pairs, inventory and classify plant and animal species in a microhabitat defined by a hula hoop. A rubric is provided for assessing the microhabitat activity.

A good way to kick off your Life Systems unit.

Ontario Ministry of Education Expectations:

- Students will demonstrate an understanding of the concepts of habitat and community (Grade 4)
- Students will investigate the interdependence among plants, animals and their specific habitats (Grade 4)
- Students examine a specific habitat . . . observe the organisms found there, and use a classification system to classify those organisms. (Grade 6)



Materials:

- ✓ clipboards (1 for each pair of students) and pencils (including a few extras) in a container
- ✓ hula hoops (1 for each pair)
- ✓ whistle
- ✓ stopwatch
- ✓ (optional, but useful) small collecting jars, magnifying glasses, field guides

Activity One Trail Ethics

Length: 40 minutes

Survey the class again to find out how many have been along the trail and how they traveled along it --on foot, bicycle, snowmobile, etc.) (If you did lesson one, all of the students will have been along the trail.) Tell them the class will be returning to the trail, but have an important job to do first.

Put Trail Rules instruction sheet onto overhead (or present on Smartboard). Go over instructions on the sheet. Emphasize the fact that there must be a good reason for each rule.

Kawartha Lakes Green Trails Alliance - City of Kawartha Lakes

9.2.Example of Education Programs at Ganaraska Conservation Area

Life Systems:

- Habitats and Communities
- Photo Orienteering
- Beaver Pond Study
- Survival Game
- Animal Adaptations
- Bug-eyed, re. insects
- Green Giants, re. trees
- Sensory Explorations
- Eco Games
- Crime Scene Investigation Classification Program
- Wolf Prowl Game

Materials and Matter:

- Up, up and Away, Natural Flight

Earth and Space Systems:

- Rockhound Detectives
- Soil...Its Not Just Dirt

Social Studies:

- Outdoor Survival Skills
- Mapping For Little Ones
- Map Reading and Orienteering

Physical Education:

- Cross-Country Skiing
- Snowshoeing

Group Dynamics and Leadership:

- Ice-Breakers and Co-operative Games
- Group Dynamics, Part 1
- Group Dynamics, Part 2

Geography:

- Oak Ridges Moraine Program

Biology:

- Pond and Stream Study with Water Analysis Lab

www.grca.on.ca

10. FINANCIAL ASPECTS OF TRAIL IMPROVEMENT

The improvement of the trails and their long term maintenance will require funding.

A business plan to ensure the long term financial sustainability of the park and its trails should be prepared (See Appendix 6).

The financial implications of the recommendations in this report are summarized below:

10.1. Estimated Cost Guide

Most trails are built, maintained and operated using a combination of tax dollars, donated materials, borrowed equipment, reduced purchase prices and lots of volunteer labour. The estimate below is only the capital cost to upgrade, decommission and create new (short) new trail in CRB using a contractor.

South Side- Crowe River Bridge

Access from the parking lot to the trail head will require major upgrading to provide wheelchair accessibility. Remainder of the trail requires:

Step 1: Brushing/Clearing trail right- of- way and shoulders (chipping smaller trees and branches) to a width of 4 metres

Step 2: Grading existing trail bed, remove tree roots, level low areas, improve surface drainage and level subsurface material.

Step 3: Supply and apply limestone screenings – tread area- 10cm thick and 3 metres wide, level, grade and compact material.

Step 4: Manufacture and Install (6) bollards at the 2 intersections connecting with the main public road prevent motorize access on trail.

Step 5: Install traffic control, permitted uses and warning signs along the trail.

Step 6: Construct bridges (2) or boardwalks- in two steep grade areas to provide for full accessibility– install wood decking boards and install hand railings for safety purposes.

Step 7: Drainage work – construct drainage channels along trail and if necessary install culverts to provide adequate drainage.

Estimated cost:

Trail construction:	\$ 10,000.00
Decommission/new spur	\$ 5000.00
Bridges or boardwalks (2)	\$ 2500.00

Bollards (6): \$ 3000.00

Signage (identified separately)

Total estimated cost for Interpretative/full accessible trail (South side only:

\$20,500.00

North Side – Crowe River Bridge

The existing roadways (that eventually will take the form of a trail) would be used with short spur trails leading off roadway to viewing, picnic and resting areas. The trails in this section will not be built to full accessibility standards. The user type will be hikers/walkers, cyclists in summer and cross-country skiers and snowshoers in winter months.

Step 1: Where necessary brushing/clearing trail right- of- way and shoulders (chipping smaller trees and branches) to a width of 4 metres

Step 2: Grading existing roadway bed (3 metres wide) remove tree roots, level low areas, improve surface drainage and level subsurface material. Roadway bed is in good condition for trail use.

Step 3: Supply and apply limestone screenings - 10cm thick and 3 metres wide, level, grade and compact material.

Step 4: Install bollards (7) at the main entrance.

Step 5: Install traffic control, permitted uses and warning signs along the trail system.

Step 6: Drainage work – install, clean existing culverts and extend culverts at some of the crossings to provide adequate drainage.

Estimated cost:

Trail construction: \$ 20,000.00

Construction includes new spur trails leading to viewing/rest/picnic sites, new connecting trail to create loop

Bollards/gate (7): \$ 4500.00

Signage (identified separately)

Total estimated cost for Interpretative/full accessible trail (West side only: **\$24,500.00**

Grand Total Trail Construction Cost:

\$ 45,000.00

Note! This is capital cost – annual operating cost is not included. The capital cost figures are based upon similar trail type development in Ontario.

10.2. Sources of Funding

Sources of funding for capital development and to ensure the long term financial sustainability of the park and trails could include:

- Agency funding, e.g. Conservation Authority, municipality, etc
- Park entry fees, day and seasonal
- Sale of interpretive materials
- Sale of park souvenirs
- Grants:
 - o Eastern Ontario Development Fund- Community Futures Corporation – Bancroft
 - o Ontario Trillium Foundation
 - o Ontario Ministry of Tourism- Tourism Development Fund
- Fundraising events by Friends of the Park

10.3. Example of Fees for Educational Programs in Ganaraska Forest Conservation Area

See next page.

RATE SCHEDULE FOR DAY USE EDUCATIONAL PROGRAMS *

Half Day

- 1 instructor \$4 per student (\$100 minimum) (maximum 25 students)
- 2 instructors \$4 per student (\$175 minimum) (maximum 50 students)
- 3 instructors \$4 per student (\$280 minimum) (maximum 75 students)

Full Day

- 1 instructor \$7 per student (\$180 minimum) (maximum 25 students)
- 2 instructors \$7 per student (\$315 minimum) (maximum 50 students)
- 3 instructors \$7 per student (\$490 minimum) (maximum 75 students)

Cross Country Skiing Program

- \$14 per student (includes equipment rental)
- \$10 per student each per student using their own equipment

Self Guided Day Use

- \$2 per student

* Parents are welcome at no extra charge (at a ratio of 1 parent to 6 children)

* Additional parents are welcome at the day rate

10.4. Example of Fund Raising for the Lakefield Trail

See next page.



Become a Friend of the Lakefield Trail

If you have not signed up as a financial 'Friend of the Trail', this is your opportunity!

Please print and complete this form and return it today.

Thank you for your continuing volunteer stewardship of the Lakefield Trail.

_____ Name	_____ Email	_____ Phone
_____ Address: Street		_____ Box #
_____ City	_____ Province	_____ Postal Code

All donations are gratefully accepted, but the following are suggested amounts:

Payment Options:

- I have enclosed a cheque payable to: Township of Smith-Ennismore-Lakefield
- Cash: Please pay at the Municipal Office located at 1310 Centre Line, Smith.
- \$20 \$50 \$100 _____
- I prefer to give my time (phone #) _____

A charitable tax receipt will be issued for donations of \$20 or more.

Please mail your completed form to:

Lakefield Trail Stewardship Committee
c/o Department of Recreation
Township of Smith-Ennismore-Lakefield
P.O. Box 270
Bridgenorth ON K0L 2H0

Phone: 705- 292-7034
Fax: 705- 292-7718
Email: info@lakefieldtrail.ca
Trail information is available at:
www.lakefieldtrail.ca

Thank you for your support

11. STAKEHOLDER INVOLVEMENT IN THE CONSERVATION AREA AND TRAILS

11.1. Stakeholders

The long term sustainability of the park and trails will require contributions from the public, private and NGO sectors.

Key stakeholders include:

- Crowe River Conservation Authority
- The Municipality of Trent Hills
- Friends of the Crowe Bridge Park

Other organizations that might be involved include:

- Service clubs, e.g. Rotary
- Local schools
- Youth organizations, e.g. Scouts
- Regional tourism agencies
- Local businesses

It will be important to identify the specific and realistic role of all partners, especially regarding funding and maintenance.

11.2. Volunteers

Volunteers may be useful for:

- Trail monitoring
- Trail maintenance work
- Garbage removal
- Interpretation activities
- Educational activities
- Organizing events
- Instructing recreational activities, e.g. wilderness survival skills, kayaking
- Conducting research, e.g. annual bird count, visitor survey
- Publicising the conservation area and trails
- Fund raising

Having a “Friends” organization will aid in encouraging, directing and coordinating volunteer activities.

It is critical to ensure liability and insurance issues relating to volunteer activities are dealt with.

There are numerous examples of volunteer activities on trails and in conservation areas, a few of which are provided below.

11.3. Brochure About Volunteering for the Lakefield Trail

See next page.



See you on the TRAIL!



[Home](#)

[Trail Map](#)

[About](#)

[Trail Events](#)

[Local Links](#)

[Contact Us](#)

Volunteers

The Lakefield Trail needs you!

After enjoying all the benefits the Lakefield Trail has to offer, many people in our community have decided to give something back to the Trail.

Volunteer and become a part of the Lakefield Trail! This is your opportunity to help share your experiences, be a part of a team, learn new skills and develop lasting friendships. Volunteering for the Lakefield Trail will allow you to choose from a variety of opportunities with various levels of commitment.

From Stewardship Committee meetings to the Trail Work Days, volunteers typically commit about 4 hours a month to their positions. Many of our volunteer positions are project based rather than a regular monthly commitment. Today, more than 35 dedicated volunteers donate their time and talents.

With opportunities to suit everyone, there is a place for you! Please join our effort to maintain and promote the Lakefield Trail.

Lakefield Trail Volunteer Opportunities

If you are interested in supporting the Lakefield Trail as a volunteer, below are some of the opportunities:

Become a Trail Stewardship Committee member. We meet one evening a month in Lakefield.

Assist with general trail maintenance such as litter pick-up, spreading limestone screenings, and carpentry.

Lend a hand at trail events such as the May spring nature walk, the Lakefield Jazz Festival booth, and the August sidewalk sale booth.

Install benches.

Assist with planting, especially at the Trailside Garden this spring.

For more information please call! 705-292-9507 Ext. 243 or [email us](#).



[Site Map](#) | [Contact Us](#)

Township of
Smith-Ennismore-Lakefield

11.4. Text of Brochure about Volunteering in the Ganaraska Forest Conservation Area

VOLUNTEERING AT THE GANARASKA FOREST

With nearly 11,000 acres of woodlands and an extensive trail network, the Ganaraska Forest provides an incredible opportunity for outdoor recreation and education. The responsible management of such a large and diverse multi-use forest is a big undertaking and the Ganaraska Region Conservation Authority is looking for the help of volunteers.

If you have some time to spare, your efforts can make a real difference in the future of the Ganaraska Forest.

- Forest membership patrols
- Gate attendants
- Trail maintenance and site restoration
- Public education programs
- Guided hikes
- Special events

This is an exciting time at the forest with plans for many new programs and initiatives being developed. The need for volunteers has never been greater! If you would like to get involved, please fill out this application on the other side of this pamphlet, and mail, fax or hand deliver it to either our main office or the Ganaraska Forest Centre. If you would like further information on volunteer programs, please contact the Ganaraska Forest Centre at 905.797.2721 or gfc@grca.on.ca

GRCA Administrative Office
2216 County Road 28
PO Box 328
Port Hope, Ontario
L1A 3W4
(P) 905.885.8173
(F) 905.885.9824

Ganaraska Forest Centre
PO Box 328
RR 1, Campbellcroft, Ontario
L0A 1B0
(P) 905.797.2721
(F) 905.797.2545

Freedom of Information: Information is collected under the legal authority of the *Conservation Authorities Act* and is strictly for the use of the Ganaraska Region Conservation Authority (GRCA), and the Ganaraska Forest Centre (GFC). This information is used for administrative purposes only. Contact 905.885.8173 for further information.

Ganaraska Forest Volunteer Application

Name: _____

Address: _____

Postal Code: _____ Phone Number: (H) _____ (W) _____

Volunteer work areas of interest: *(examples include: membership patrols, gate duty, public education programs, trail maintenance, site rehabilitation, special events, etc.)*

Times available: _____

Knowledge and skills relevant to volunteer work: _____

First aid training: _____

Previous volunteer experience: _____

Organization Memberships: _____

Signature: _____ Date: _____

Thank you for your interest in supporting the Ganaraska Forest



12. CONCLUSION AND SUMMARY OF RECOMMENDATIONS

Our research indicates that the Crowe Bridge Conservation Area:

- Is valuable as a conservation area and popular for recreation.
- Already has a good system of trails, but some improvements in their routing could be made.
- Most of the trails are in good condition with a few sections very steep, wet or eroded.
- Could offer, with relatively little work, a trail suitable for wheelchair access.
- Has trails and features with the potential to be used more for interpretation and outdoor education.
- Lacks comprehensive signage.

The main recommendations are:

- Maintain the area for year round passive recreation focusing on the trails and beach area.
- Revise the trail system, as shown, by closing a few short sections and adding a few others.
Rehabilitate closed trails and prevent unauthorized motorized access, as described.
- Improve the trails to the recommended standards, thereby making them safer and more appealing, with most of the trails in the southern section becoming suitable for wheelchair access.
- Install a comprehensive system of signs, as outlined in the Sign Manual provided, indicating the entrances, trailheads, regulations, hazards and points of interest.
- Monitor and maintain the trails as outlined.
- Define and coordinate roles for those agencies, groups, individuals and volunteers involved in the management of the area and its trails.
- Recognise the financial implications of improving and maintaining the trail system, by preparing a business plan and undertaking fund raising for sustaining the conservation and recreational use of the area and its trails.
- Prepare and disseminate accurate and appealing information on the area and its trails using a brochure, as outlined, an interactive website, as described, a teachers educational kit, guided hikes, and other means.
- Consider expanding the area, especially to the south, building a permanent washroom by the beach, using or demolishing all existing buildings, and hiring a student in summer to look after the area.
- Review this study within five years, and revise as necessary to ensure the conservation and high quality recreational and educational use of the area.

APPENDIX 1

REFERENCES AND USEFUL INFORMATION SOURCES

References

Rose, S. Crowe Bridge Park Public Consultation Plan, Staff Report, Municipality of Trent Hills, Campbellford, 20 December 2010.

Trails for the Twenty-First Century, 2nd Edition (April 2001), published by the [Rails-to-Trails Conservancy](#)

Wilson, Graham. A Nature Walk in Ferris Provincial Park. Handout. 30 September 2010.

Websites

www.abilitiescentre.org/resources.html

Trails for all Ontarians is a Best Practice manual integrating accessibility guidelines with standard trail design and construction guidelines as it relates to the Ontario landscape. Document refers to Ontario Best Trails.

www.beneficialdesigns.com

Universal design, sometimes known as barrier-free building design, "is the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design. The intent of universal design is to simplify life for everyone by making products, communications, and the built environment more usable by as many people as possible at little or no extra cost.

www.crowevalley.com

Crowe Valley Conservation Authority.

www.fhwa.dot.gov/environemnt/rectrails- click Trail Accessibility guidelines.

The Forest Service Trail Accessibility Guidelines (FSTAG) provide guidance for maximizing accessibility of trails in the National Forest System, while recognizing and protecting the unique characteristics of their natural setting.

www.for.gov.bc.ca

British Columbia Trails Manual excellent diagrams and policy information.

www.friendsofcrowebridgepark.com

Friends of Crowe Bridge Park.

www.grca.on.ca

About the Ganaraska Forest Conservation Area, with interesting information on education programs.

www.lakefieldtrail.ca

About a trail around Lakefield, north of Peterborough, with examples of fundraising.

www.ontariotrees.com

Information on identifying trees in Ontario.

www.trenthills.ca

Municipality of Trent Hills.

www.trentuniversity.ca/trailstudies

Trail Studies Unit, Trent University.

www.turnstone.ca

Offers information relating to birds, fauna, flora and geological features in the local area.

www.novascotiatrails.com

Developing Recreation Trails in Nova Scotia: Planning, Design, Construction, Maintenance and Management" is the first trail construction manual ever produced for community based trail building groups.

www.warsawcaves.com

About a conservation area near Peterborough similar to Crowe Bridge Conservation Area.

APPENDIX 2

DRAFT PARK AND TRAIL BROCHURE

DIRECTIONS	INFORMATION	CONTACT
 <p>Crowe Bridge Conservation Area</p> <p>670 Crowe River Rd Crowe Bridge, ON K0K 2M0</p> <p><u>From HWY 7 (Trans-Canada Hwy)</u> Head South on Country Road 50 near Preneveau for about 5.8 km Turn left on 13 Line E Turn right on Crowe River Rd The park is right after the bridge</p> <p><u>From Campbellford</u> Head north on Front St N toward Park Ln Continue onto County Road 38 At Pethericks Corners, turn left onto Crowe River RD The park is right before the bridge</p>	<p>The Crowe Bridge Conservation Area (CBCA) is 26 acres of forested land located on the east bank of the Crowe River, in the municipality of Trent Hills, northeast of Campbellford, Ontario. It was acquired by the Crowe Valley Conservation Authority in 1965, from the Petherick family. The area had always been a popular local spot for swimming or spending a leisurely day.</p> <p>Aided by summer student programs it eventually boasted approximately 40 campsites on the east side of the bridge, complete washroom facilities, a store, a wilderness mini putt area, swimming and picnicking on the west side for day use.</p> <p>Friends of Crowe Bridge Park with the support of the public will continue to work with our partners, Crowe Valley Conservation Authority and the Municipality of Trent Hills to ensure this favourite recreational spot will always be available to those who have enjoyed it for a lifetime as well as those new friends just discovering a special place.</p>  <p><i>Garter Snake</i></p>	 <h2 data-bbox="1138 583 1419 667">CROWE BRIDGE CONSERVATION AREA</h2>  <h2 data-bbox="1187 1241 1370 1272">TRAIL GUIDE</h2>  <p><i>Orthoceratite and clam fossils</i></p> <p><u>Friends of Crowe Bridge Park</u> www.friendsofcrowebridgepark.com</p> <p><u>Municipality of Trent Hills</u> Ph.: 705-653-1900 www.trenthills.ca/en/community/crowebridge.asp</p> <p><u>Crowe Valley Conservation Authority</u> Ph.: 613-472-3137 www.crowevalley.com/conservationcrowebridge.html</p> <p><u>Save the Crowe</u> www.savethecrowe.com</p>

TRAIL GUIDE



Wild Sarsaparilla, Yellow Corydalis & Wild Columbine

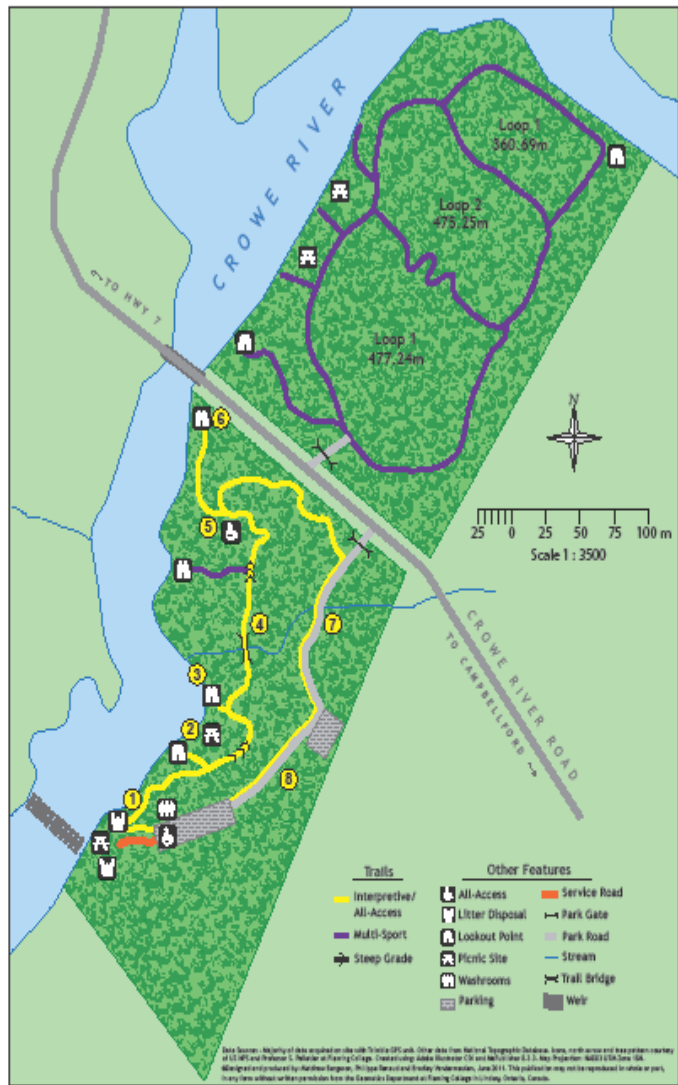
- 1 The limestone sheets in this area of the park are packed with fossils. Look for ancient invertebrates such as corals and bryozoans, as well as molluscs such as clams, squids and the orthoceratite fossil shown here.
- 2 Look for wild sarsaparilla, a type of ginseng, throughout the park. It grows very abundantly on this outlook, along with yellow corydalis and wild columbine.
- 3 Winter stoneflies are among the first insects to emerge in the spring; this one was photographed here in mid-March. Stoneflies, as well as mayflies, dragonflies and damselflies, overwinter as aquatic nymphs. Look for the shed exoskeletons of these insects on rocks and trees along the river.
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TRAIL GUIDE

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Barren Strawberry



APPENDIX 3

PARK AND TRAIL WEBSITE

A website to provide information on the Crowe Bridge Conservation Area and its trails was developed by the students from Fleming College. It is comprehensive, visually attractive, easy to use, and interactive. However, some information is still needed before it is ready for public use. The information about it and the files needed to make it available on the Internet, and to update it are on the CD included with this report. An agency, such as the Municipality of Trent Hills or the Crowe Valley Conservation Authority, would need to host the site, check contributions to it, and maintain it. It is recommended that this website be finalized and made accessible on the Internet as soon as possible.

The home page of the website, with introductory text still required, is illustrated below.

http://omemee/crowe/

☆ | © | Google

Crowe Bridge Conservation Area

[Home](#) [Map](#) [Images](#) [Links](#) [Directions](#) [Login](#)

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APPENDIX 4

OBSERVATIONS OF THE USE OF THE CONSERVATION AREA, SUNDAY 19 JUNE 2011

Weather: fine, sunny, 20-24C, cool breeze down river, no bugs by beach, few in woods

- 11.15 – I walked all the trails but did not encounter anyone using them
- 12.00 – 1 car in lot near entrance, c12 cars in lot by beach, c.30 people at beach, c.8 people paddling in river, all 3 picnic tables at beach occupied, some people sitting under trees.
Dust blowing in parking lot
Nobody used the stairs to go between the parking lot and the beach
Two small dogs around beach, not causing problems
People walking south along river bank, on private property?
- 12.35 – Five adults walked north from beach along trail, wearing sneakers, with bare legs
- 12.35 - Some people left, probably for lunch
- 12.40 – Three kids, with bare feet and chests, went north along trail from beach. Later observed walking along the edge of the river
- 12.45 – The five adults returned to the beach
- 12.50 – Overheard at beach: “Go up there where its shady”
- 12.55 – 13 people in the river
- 12.55 – Overheard at beach: “The water’s actually really good,” “the nice thing is it’s clear”
- 12.55– Woman wheels baby carriage, with some difficulty over rough ground, from parking lot to grassy, shaded area near beach
- 1.00 – 40-50 people in the area. Most users were families with young kids or teens, some visible ethnic minorities
- 1.05 - Overheard at beach: “We have family in Brampton, brought them here last year. They really liked it”
- 1.10 - All picnic tables occupied. Three groups picnicing on grass in shade above beach
- 1.30 - Fifteen cars in parking lot at beach
- 1.40 - Nineteen cars in parking lot at beach

APPENDIX 5

TRAIL MONITORING FORM

Example of Trail Monitoring Form



Volunteer Trail Monitoring Form

(To be completed periodically: at least monthly and after any severe storm)

Inspection completed by: _____ Telephone: _____

Managing Partner Organization: _____

Inspection Date: _____ Time of day: morning midday evening

Trail Location: From _____ To: _____

This form to be used to identify any needed corrections, observations, or general notes.

	Yes	No	Comments
1. trail surface in good repair:	<input type="checkbox"/>	<input type="checkbox"/>	-
2. signs in good repair and visible:	<input type="checkbox"/>	<input type="checkbox"/>	-
3. sign(s) missing	<input type="checkbox"/>	<input type="checkbox"/>	-
4. areas is clean and no garage/debris:	<input type="checkbox"/>	<input type="checkbox"/>	-
5. bollards in good condition/locked:	<input type="checkbox"/>	<input type="checkbox"/>	-
6. no overhanging tree branches/limbs:	<input type="checkbox"/>	<input type="checkbox"/>	-
7. evidence of prohibited use?	<input type="checkbox"/>	<input type="checkbox"/>	-
8. drainage is good:	<input type="checkbox"/>	<input type="checkbox"/>	-
9. bridges, culverts in good condition	<input type="checkbox"/>	<input type="checkbox"/>	-
10. are you aware of any complaints?	<input type="checkbox"/>	<input type="checkbox"/>	-
11. additional work required:	<input type="checkbox"/>	<input type="checkbox"/>	-
12. shoulders of trail, in good shape:	<input type="checkbox"/>	<input type="checkbox"/>	-
13. vandalism:	<input type="checkbox"/>	<input type="checkbox"/>	-
14. trespassing	<input type="checkbox"/>	<input type="checkbox"/>	-
15. observed trail in use: record number of:			
<input type="checkbox"/> hikers/walkers			
<input type="checkbox"/> cyclists			
<input type="checkbox"/> horseback riders			
<input type="checkbox"/> joggers			
<input type="checkbox"/> Xcty skiers			

ACTION REQUIRED:

Instructions and Guidelines for Trail Inspectors

a. To the best of your ability, please describe and estimate the trail conditions considering the following items:

b. When conducting your inspection note the urgency of each item needing repairs/replacement by stating in the comment section; High, Medium or Low Seriousness;

- High – work to be done within next day or two- high risk of injury

- Medium – work to be done within the next week- minimal risk of injury

- Low – work to be done this season – no risk of injury

NOTE: The trail monitor is not expected or required to deal with incidents of unlawful or prohibited use of the trail. If you encounter someone who is improperly using the trail DO NOT be confrontational. Record a description of the person(s), type of vehicle and license number, report as per the established guideline set out in the agreement.

Please fax (705 -878- 9318) or mail to this report to Kawartha Trans Canada Trail c/o Sir Sandford Fleming College 200 Albert Street Lindsay Ontario K9V 5E6

EXAMPLE OF CONTENTS OF A BUSINESS PLAN FOR TRAILS

City of Kawartha Lakes Trans Canada Trail Business Plan

Prepared for
Sir Sandford Fleming College- Lindsay Campus
and
Friends of the Trans Canada Trail (City of Kawartha Lakes)

March, 2007

prepared by

Allen MacPherson, Trail Consultant
49 Mohawk Drive, Lindsay, Ontario K9V 4R1
705-324-3222 Fax 705-324-5685
E-mail address: al_macpherson@sympatico.ca

Funded by:



Kawartha Lakes Community Futures Development Corporation



CITY OF KAWARTHA LAKES TRANS CANADA BUSINESS PLAN

Executive summary

The Friends of the Trans Canada Trail, a local voluntary group of interested parties, proposes to complete a 44 km segment of the Trans Canada Trail which will traverse the City of Kawartha Lakes via the provincially owned abandoned rail corridor running east-west from Peterborough to the Region of Durham. Through the formation of a community-based, not for-profit organization and broad-based stakeholder support, this plan proposes the means for securing the route, the community commitment and the funds necessary to establish and sustain the trail link. The keys to success for this project include:

- ✚ Securing the trail route in its entirety by way of lease agreements and right-of-way agreements with the Province, the town of Lindsay, Sir Sandford Fleming College and adjacent landowners.

- ✚ Establishing sustainable, well managed fundraising capability sufficient to secure at least \$700,000 in financial support for the development and operation of the trail,
- ✚ Establishing a sustainable, well managed trail management capability via the recruitment of “managing partners” to the venture, and
- ✚ Achieving the aims and objectives of this initiative on the strength of an exclusively volunteered-based human resource complement including organizational governance and leadership, fundraising personnel and trail operations and maintenance personnel.

The plan proposes the completion of the Lindsay East and Lindsay segments of the trail by the summer of 2012 at a cost of \$350,000. The further completion of the Lindsay West is projected for the period 2013-2015 at a cost of an additional \$350,000.

OBJECTIVES

1. Establish a not-for-profit organization reflecting broad-based community support and commitment to undertake the completion of the 44 km Kawartha Trans Canada Trail link.
2. Secure \$350,000 to fund the completion of the Lindsay East and Lindsay segments of the KTCT.
3. Complete the Lindsay East and Lindsay segments of the KTCT by December 2012.
4. Secure \$350,000 to fund the completion of the Lindsay West segment of the KTCT.
5. Complete the Lindsay West segment of the KTCT by December 2015.

The KTCT link will be developed and operated in a manner consistent with the standards and guidelines of the Trans Canada Trail Foundation and will provide numerous social and economic benefits including:

- ❖ Expanded opportunities for “active transportation” and “passive recreation” activities;
- ❖ Expanded opportunities for “trail tourism”;
- ❖ Increased demand for area services;
- ❖ Sustains and/or creates jobs;
- ❖ Fosters Canadians working together on a common goal;
- ❖ Building a legacy for future generations
- ❖ Providing a sense of participating in “making history”; and
- ❖ It will be part of the longest trail in the world- a shared-use trail accommodating five potential activities: walking, cycling, horseback riding, cross-country skiing and snowmobiling.

Table of Contents

	Page
1.0 KAWARTHA LAKES TRANS CANADA TRAIL BUSINESS PLAN	1
1.1 The Link between Trails and Tourism	2
1.2 The Link between Trails and Health	2
1.3 CKL and the Region’s Outdoor Adventure Opportunities	3
1.4 The Trans Canada Trail	4
1.5 History of East/West Rail Corridor -City Kawartha Lakes	5
1.6 The TCT Route- City of Kawartha Lakes	6
1.7 Local Infrastructure to support the TCT	7
1.8 Trans Canada Trail User Profile – 5 core uses	7
1.9 Trail User Profiles	8
1.9.1 Walking/hiking	8
1.9.2 Cyclists	9
1.9.3 Horseback riding	10
1.9.4 Cross-country skiing	11
1.9.5 Snowmobiling	11
1.10 Stakeholders and Potential Partners	11
1.10.1 Potential Partnerships	12
1.11 Jurisdiction, Tenure and Agreements	13
1.11.1 Addressing the Tenure	14
1.11.2 Land Agreements	14
1.11.3 Provincial Crown Land	14
1.11.4 Municipal Lands	14
1.11.5 Sir Sandford Fleming College- Private Land	15
1.12 Marketing and Imaging the KTCT	16
1.12.1 Marketing Strategies for the Kawartha Trans Canada Trail	16
1.12.2 The Need for a Proactive Marketing Organization	17
1.13 Ownership, Governance and Proposed Management Structure	17
1.13.1 Ownership	17
1.13.2 Governance	17
1.13.3 Charitable Status	18
1.13.4 Board of Directors	19
1.13.5 Committees	19
1.13.6 Management	19
1.14 Trail Development and Capital Costs	22
1.14.1 PHASE 1- Lindsay East Section	23
1.14.2 PHASE 2- Lindsay Section	24
1.14.3 PHASE 3- Lindsay West	25
1.15 Proposed Revenue Streams	26
1.16 Budget and Proformas	26
1.16.1 Operating Budget #1	27
1.16.2 Operating Budget #2	27
1.16.3 Operating Budget #3	27
1.16.4 Budget Assumptions	28

1.17	Economic Benefit Analysis	29
1.17.1	Economic impact Trans Canada Trail in Central Ontario Region	29
1.17.2	Job Creation Potential	30
1.17.3	Examples of Ontario Trail Economic Impacts	30
1.17.4	Tangible Benefits	31
1.17.5	Intangible Benefits	32
1.18	Strengths, Weakness and Risks	32
1.18.1	Strengths	32
1.18.2	Weakness	33
1.18.3	Risks	34
1.19	Maintenance, Improvement, and Management Responsibility	34
1.19.1	Signs, Barriers, and Bridges	34
1.19.2	Fencing	34
1.20	Action Plan and Timelines Chart	35
2.0	VIABILITY AND REVENUE CREATION PLAN.....	39
2.1	Consultation Process	39
2.1.1	Consultation with Government Agencies	39
2.1.2	Consultation with KTCT Potential Land Managers	40
2.1.2.1	Kawartha Green Trails Alliance	40
2.1.2.2	Sir Sandford Fleming College	40
2.1.2.3	City of Kawartha Lakes	40
2.1.2.4	Omeme Business and Community Improvement Association	41
2.1.2.5	Heart of Ontario Snowmobile Club	41
2.1	Consultation with Community/trail organizations	41
2.1.1	Consultation with adjacent landowners	42
2.2	The Trail Market Place and Funding Sources	42
2.3	Trail Liability and Risk Management Issues	44
2.3.1	Standard of Care on Trails	44
2.3.2	Risk Management and Liability	44
2.3.3	Negligence	45
2.3.4	What Limits Liability	45
2.3.5	Occupier's Liability in General	45
2.3.6	Landowner Liability	46
2.3.7	Insurance	46
2.4	Other Rail Trails	46
2.4.1	Waterloo, Ontario	46
2.4.2	St. Thomas, Ontario	47
2.4.3	Peterborough, Ontario	47
2.4.4	Caledon Trailway	47
2.4.5	Cambridge-Paris Rail Trail	48
2.4.6	Hamilton to Brantford Rail Trail	48
3.0	GOVERNANCE AND FUNDRAISING.....	49
3.1	Mandate, operating principles	49
3.2	Local infrastructure in place to support the trail	49

3.3	Jurisdiction, tenure and landownership	50
3.3.1	Tenure options for the Crown Portion of the KTCT	50
3.3.2	Ontario Realty Corporation	50
3.3.3	Leased Lands	50
3.4	Marketing and Imagery of the KRTC	50
3.4.1	Logo/Branding	51
3.4.2	Merchandise	51
3.4.3	Printed Materials	51
3.4.4	Static Expo Display	52
3.4.5	Public Presentations	52
3.4.6	Media Attention	52
3.4.7	Internet	52
3.4.8	Public Relations	53
3.4.9	Ambassadors	53
3.4.10	Personalities	53
3.4.11	Endorsements	53
3.4.12	Multipliers	53
3.4.13	Coat - Tailing Existing Marketing	54
3.4.14	Joint Event Packaging	54
3.4.15	Passport to the Kawartha Trans Canada Trail	54
3.4.16	Events	54
3.4.17	Agri-tourism	55
3.4.18	Host a 'Work Party' Party	55
3.4.19	Joint Marketing of ALL CKL Trails	55
3.5	Ownership, Governance and Management	55
3.5.1	Ownership	
3.5.2	Board of Directors	56
3.5.3	Part time Marketing/Administration	56
3.5.4	Committee Structure	56
3.5.5	Finance Committee	57
3.5.6	Marketing and Public Relations Committee	57
3.5.7	Maintenance Committee	57
3.5.8	Safety Committee	58
3.6	Issues	58
3.6.1	Fencing	58
3.6.2	Farm Crossings/Entrance	58
3.6.3	Road Crossings	59
3.7	KTCT Trail Budget and Proformas	59
3.7.1	Conclusions	59
3.7.2	Assumptions	60

List of Figures

	Page
Figure 1.6.1 Trans Canada Gap City of Kawartha Lakes	7
Figure 1.13.3.1. Organizational Chart of Kawartha Trans Canada Trail	18
Figure 1.13.6.1 Map of Lindsay East	20
Figure 1.13.6.2 Map of Lindsay	21
Figure 1.13.6.3 Map of Lindsay West	22

List of Tables

	Page
Table 1.2.1 The ten most popular physical activities in Ontario	3
Table 1.16.1.1 Five year budgets based upon Operating Budget 1, 2 and 3	27
Table 1.20.1 Action Plan and Timeline Chart	35
Table 2.2.1 Comprehensive marketing and fund raising plans	42

Appendices

Appendix 1	Letters of Support -----
Appendix 2	CKL Council Letter of endorsement -----
Appendix 3	Consultation Interviews- “managing partners”-----
Appendix 4	Sample Agreement -----
Appendix 5	Special Event Application -----
Appendix 6	Trans Canada Trail Application -----

APPENDIX 7

TRAIL SIGNAGE GUIDELINES FOR CROWE BRIDGE CONSERVATION AREA

Table of Contents

Introduction.....	4
Types of Trails.....	5
Trail Information.....	7
Names.....	7
Trail Assessment.....	7
Ratings.....	9
Etiquette.....	9
Safety.....	10
Sign Design.....	11
Materials, Graphics, and Techniques.....	11
Symbols.....	13
Markers and Blazes.....	13
Directional Signs.....	16
Trailhead Signs.....	17
Kiosks.....	20
Interpretive Signage.....	21
Regulatory and Cautionary Signs	22
Sign Maintenance.....	24
Resources.....	25
Appendix 1: Sign Inventory	28
Appendix 2: Sign cost	34

Introduction

It is important that trail users have access to information regarding trails to enhance their experience. Trail information can be disseminated in a wide variety of formats, including kiosks, brochures, websites, guidebooks, and on-trail signs and blazes. But even with good trail guides and websites available, trail signage is indispensable. If trail users are uncertain about trail location or direction, they may become disoriented, or they may create new trails that damage the environment and become a challenge to rehabilitate.

A standardized sign system is a means of creating a cohesive and consistent image for Crowe Bridge Conservation Area, enhancing the overall appearance of the park, and providing simple guidelines that managers can follow to sign trails. However, care is needed to ensure that trail signs are harmonious with the nature of the trail environment while also being visible. A trail management plan should provide specific and detailed design recommendations, as well as information about installation of trail signs. The final plan should ensure that signs do not overwhelm the trail in complexity or number. Too many signs deter from the trail experience and compete for the attention of the user. A balance must be reached between providing adequate signage for users to find their way and avoiding “sign pollution”.

Providing trail signs comes with a responsibility for long-term management. Managers should ensure that trail signs are maintained in good order and that the signs continue to reflect the nature of the

trail. It should also be noted that any signage along Crowe River Road (Seymour Twp) within it's right-of-way must be approved by the Trent Hills municipality.

The objectives of trail signing are to:

- improve the trail user experience;
- enhance the safety of people, vehicles, and property;
- improve travel within the trail system;
- increase comfort and confidence in navigating the Crowe Bridge Conservation area;
- promote recreational trail use;
- protect the environment by directing visitors onto designated trails, thereby helping to avoid trampling of fragile trailside vegetation and prevent erosion.

The Trail Signage Guidelines provide guidance in achieving a comprehensive and uniform system of trail signing for Crowe Bridge Conservation Area by:

- encouraging park managers/volunteers to employ signage consistently and in a manner that is highly visible and clear;
- being flexible enough to accommodate special circumstances;
- utilizing standardized components, thereby reducing production, administrative, and maintenance costs;
- utilizing standard nomenclature and symbols that are consistent with recreation trails.

This manual, designed for use by Crowe Bridge Conservation Area park managers and volunteers, describes common types of trails, reviews trail information that is used as a basis for producing trail signage, and then presents sign design standards and guidelines for the trails located within Crowe Bridge Conservation Area. Sign maintenance is briefly addressed, trail signage resources are listed, and supplementary material is attached.

This manual is provided to help ***guide development of trail signage projects*** as well as provide guidance as outdated or worn trail signage/markers are replaced long the trail.

Note: As part of any trail plans, trail signage modifications and trails map updates, managers/volunteers are encouraged to provide updated trail maps and trails information to the police, fire and EMS. This is a critical link in cases of emergency in order to coordinate with 911 center and local emergency responders.

Types of Trails

There are a variety of uses for trails and the type of signage for a specific trail is often dependent on what the trail is designed for. The identified trail use provided categorizes the trail use that will be allowed specifically for Crowe Bridge Conservation Area. The designed use standard is the intended use that requires the highest level of development. Although in some cases numerous uses of a trail may be allowed, only one use is identified as the designed use which are designed for multiple uses. **Accessible** trails are pedestrian trails, short distance hiking trails, and interpretive trails are designed to meet certain standards to accommodate persons with disabilities.

Hiking trails are designed specifically for foot travel. They typically designed to be the least intrusive type of trail upon the natural environment and therefore often have the fewest and simplest signs. Along the hiking trails, blazes or markers are the only type of signage used, other than

directional signs at trail junctions. The abandoned road system on the east side would form the bases for the short distance hiking trails.

Mountain bike trails are typically designed for low-impact use and can range from general use to challenging. In addition to markers and regulatory signage that keep bikers on the designated trail route are required. The east side with its abandoned road system would provide opportunities for general mountain bike use.

Cross country ski trails are designed specifically for skiing and are often a system of looped trails of varying difficulty over rolling terrain. The east side abandoned road system would provide this opportunity with moderate rating for its ski trail system due to the hill climbing involved. However, ski trails are often compatible with a variety of summer uses such as hiking and mountain biking.. Cross-country ski trails should be marked so that travelers unfamiliar with the trails can follow them during poor weather conditions, when there are no tracks to follow and when the lighting is poor.

Interpretive/Nature trails are pedestrian trails designed for interpreting natural or cultural features in the landscape. They are relatively short and are often laid out as a loop trail. Interpretive trails are often accessible to persons with disabilities but are not designed for through traffic. Interpretive trails usually have a very gentle grade and are meant for strolling at a casual pace. The west side will provide this type of trail.

Trail Information

The basis for producing trail signage is to provide information to trail users. It is appropriate to provide more information about a trail than simply marking a line on a map. It is therefore important to first fully understand what information is desired and to review the information you wish to present to be sure it is helpful and appropriate for each specific trail. Providing accurate, objective information about actual trail conditions will allow people to assess their own interests, experience, and skills in order to determine whether a particular trail is appropriate or is sufficiently accessible to them.

This section is meant to provide information to assist park managers and volunteers in producing signage and printed material. This information may not apply to all trails or all uses and should only be used in trail brochures or posted on kiosks as desired. It is important to not overwhelm trail users with too much information.

A variety of information formats may be used to convey trail information. Consideration should be given to providing written information in alternative formats such as Braille, large print, multiple languages, or an audible format. For example, the text of a trailhead sign could be made available on audiocassette or using a digital voice recorder. In addition, simplified text and reliance on universal symbols would provide information to individuals with limited reading abilities or limited understanding of the English language

Names

Trails should be named for safety and operational needs. Naming trails may seem quite simple. However, some names, such as Mud Slinger Trail, could imply improper use of the park resource, poor environmental conditions, or access to a dangerous area. To avoid these situations, following some simple guidelines may help.

- Avoid naming trails after people.

- Avoid names that describe adverse conditions or improper use of the resource.
- Do not use a name that may be disrespectful to any cultural or ethnic group.
- Names that imply a destination or end point such as “Overlook Trail” or “Waterfall Trail” may be appropriate, but don’t use these types of names if the feature is an attractive nuisance or does not have appropriate viewing facilities.
- Names that have historic meaning are often used as long as there is no implication of an attractive nuisance or damage to cultural or archaeological resources.
- Trail names can be colours as long as the trail markers are coordinated to match the name-Don’t name a trail the “Blue Trail” and then mark it with a different colored trail marker.
- Trail names that describe a natural feature may be used. Names such as “Ridge Trail”,

Symbols used for rating trails are outlined below

Cross country ski trail difficulty ratings:



Easy (green): Skiers need only basic knowledge and limited experience in the diagonal stride, snowplowing, and side stepping. Trail may have short downhill and uphill stretches.



More Difficult (blue): Skiers must be able to ski variably steeper terrain requiring turning, snowplowing, herringboning, and diagonal stride.



Most Difficult (black): Skiers must be experienced. Terrain is frequently extreme. Turns are often sharp and linked together with no room to snowplow or herringbone

Etiquette

The following are suggested points to include in trailhead kiosk signage, web site and in printed material for public distribution. These may be condensed for use as text on signs. This information will not apply to all trails or all uses and should only be posted as necessary in appropriate locations.

- Be friendly and courteous.
- Take only pictures. Leave what you find.
- If you carry it in, carry it out.
- Stay on the trail. Shortcutting the trail and bypassing muddy areas destroys vegetation, leads to erosion, reduces habitat quality, and causes unsightly damage to the landscape.
- Avoid using trails when they are excessively muddy.
- Respect wildlife. Keep your distance. Never feed wild animals.
- Respect private property.
- Respect other visitors and their experience. Avoid excessive noise.
- Use extra caution when using headphones. You may not be able to hear warnings.
- Keep your dog under control at all times.
- Follow “Leave No Trace” principles.
- Keep yourself and your bike under control and proceed at a safe speed and within

- your ability at all times. Anticipate other trail users around blind curves.
- Share the trail. Keep to the right except to pass. When in doubt, give the other user the right of way. Warn people when you are planning to pass

Materials, Graphics, and Techniques

Signs may be constructed using different types of materials, which may vary depending on the type of sign being produced. Sign faces that are constructed from metal or synthetic materials can be painted or colored to match the environment. Factors to consider when choosing materials include budget, aesthetics, durability, maintenance costs, and replacement cost due to vandalism or theft.

- Wood is traditionally used for many types of trail signs since it is a natural material, aesthetically pleasing, and readily available. Wood can be used as backing for signs, support for signs, or as the signs themselves. When choosing wood, particular consideration needs to be given to adaptability and resistance to weather conditions. maple and oak are extremely durable but not easy to work with and subject to splitting and warping. Cedar is weather-resistant and easy to work with but not as vandal-resistant. Wood should be straight-grained, dry, knot-free, and at least two inches thick. Proper sealing and preserving of wood will enhance its durability. Linseed oil is a natural preservative and sealer that provides a natural appearance but it gradually darkens the wood and should be reapplied each year. Wood may not be the most environmentally sustainable material to use when taking into consideration the entire life cycle of the sign, including all required materials and energy, as well as disposal of materials. If wood is used for making signs, consideration should be given to choosing wood that grew locally or that has been certified sustainable by a reputable wood certification system.

- Plastics, Fiberglass (fiber-reinforced polyester), and Composites are widely available, easily adaptable, weather-resistant, fairly inexpensive, and a good choice for smaller signs and for signposts. Reflective material may be desirable for sign surfaces for high visibility in the dark. Plastics may not be appropriate in more primitive locations.

- Aluminum is widely available, lightweight, durable, and most useful for traffic control signs. However, aluminum is more expensive and may not be appropriate for larger signs, especially where a more natural appearance is desired.

- Steel is more affordable and durable, but it weighs more than aluminum and requires special treatment to inhibit rust (stainless or galvanized steel).

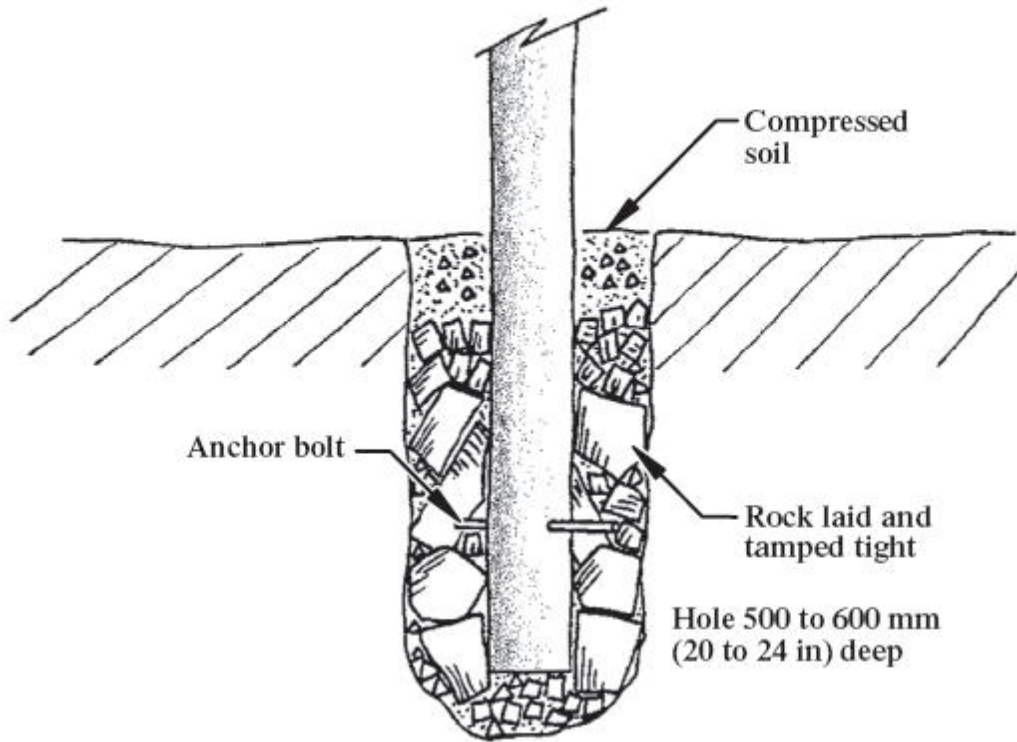
- Stone is best used for cairns where other methods of marking trails are impractical, and as a decorative base for larger signs that require posts.

An effectively designed sign face is clear, concise, simple, and legible with well-spaced typography and plenty of space in the margin. Text for signs should be left-justified and use both capital and small-case lettering (except for wooden directional signs, which use all capital lettering). Universal symbols should be used when possible. Font type needs to be decided upon and used for all signage the exception of wooden directional signs and interpretive signs.

Standard colours need to be selected with lettering on a dark background. Paint should be high-quality (two part epoxy will not fade) and compatible with the surface it is used on, as well as compatible with any preservatives used on wooden surfaces. Reflective paint, which may be desirable for high visibility is available in different colours.

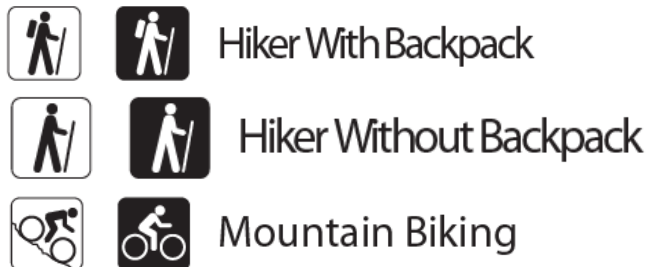
Signs needing their own support should be installed using one or two 4"x4" posts eight feet long placed approximately 24" into the ground with a theft-resistant anchor bolt. Postholes should be filled with either concrete or rocks and covered with compressed soil. The sign should be attached to the post using theft-resistant, corrosion-resistant hardware such that the top of the sign is level and even with the tops of the signposts

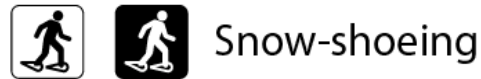
Signpost Installation



Symbols

The following recreation symbols should be used on trailhead signs, at trail junctions and road crossings, and on maps to indicate permitted uses of the trail. In addition, trail difficulty rating symbols can be used on mountain bike and cross country ski trails that have been rated for level of difficulty. Except for difficulty rating symbols, colours can be modified to coordinate with trail markings.





Markers and Blazes

The most basic trail signs are those that identify the trail. These signs may provide the name of the trail, mark the route of the trail, or include simple information, such as difficulty rating, kilometre point, and symbols that show allowable uses of the trail. Where directional signs are used, identification of the trail is often incorporated into the directional sign.

Waymarks are small, simple signs that mark the route of the trail and reassure trail users that they are on the trail. Trails can be marked in many ways. Blazes can be painted on trees, stakes, or other objects, posts can be set into the ground, markers can be nailed to trees or posts, or cairns (piles of rocks) can be carefully erected. Regardless of the method used or type of trail being marked, each specific trail should be marked clearly and consistently and the marking should conform to a standard colour, shape, and size. Where trail conditions prevent the use of the standard marker, an alternative can be used.

The preferred method of marking trails is to use coloured plastic or metal markers nailed to trees or posts. Plastic markers are less expensive but may not last as long as metal markers. Markers of various colours, shapes, and sizes are useful for distinguishing between multiple trails and between different types of trails. However, it should be noted that a large number of people are unable to distinguish between different colours; therefore, trail intersections should be well-labeled using different symbols or text (on markers or signs) to signify different trails. Markers with arrows may be used to indicate major changes in direction along a trail.

Distance markers may be used to show the kilometers or metres from either end of the trail or from a designated trailhead. These types of markers can be very useful in emergency situations and for maintenance purposes. They are often placed every quarter kilometer or shorter distance may be preferable. Use of distance markers is encouraged and should include a unique identifier, such as the trail name. Where distance markers are used, other methods of marking the trail are usually

unnecessary. Distance markers are often imbedded in a post that is placed into the ground alongside the trail using vandal resistant hardware. Alternatively, distance markers can be metal or plastic markers nailed to trees or attached to posts; however, these types of specialized markers are prone to theft. Whichever method is used, the design of distance markers should be consistent along the entire length of the trail on which they are placed.

Other less costly trail markers, less visually obtrusive, and more vandal-resistant methods could be used between widely-spaced markers. The preferred method is to use paint blazes, typically vertical rectangles painted on trees, posts, and other objects along the trail. The typical standard size for trail blazes is 2"x6", the size of blazes must remain consistent along each particular trail.

Note that shape and colour may be indicative of the difficulty rating for mountain bike and cross country ski trails. Along shared use trails, typically only one method of marking or type of marker should be used.

- **HIKING TRAILS:** Use 3" round markers OR blazes. A symbol or "FOOT TRAIL" text may be included on markers. Do not use GREEN colors. Markers with trail-specific symbols should be used at trail intersections and at quarter-kilometer intervals along the trail.

- **MOUNTAIN BIKE TRAILS:** Use distance markers and/or 3" round markers. A symbol or "BIKE TRAIL" text may be included on markers. Difficulty rating symbols may be used if trail is rated (optional); use GREEN, BLUE, and BLACK background colors only in association with the corresponding difficulty rating of the trail. Cross country skiers or mountain bike users: use GREEN, BLUE, and BLACK background colours only in association with the corresponding difficulty rating of the trail.

CROSS COUNTRY SKI TRAILS: Use 3" or 4" round markers OR 4" square diamonds. A symbol or "SKI TRAIL" text may be included on markers. YELLOW or RED colors are preferred, *not* WHITE..

Difficulty rating symbols may be used if trail is rated (optional); use GREEN, BLUE, and BLACK background colors *only in association with the corresponding difficulty rating of the trail.*

INTERPRETIVE/NATURE TRAILS: Interpretive signs point out features of interest along the trail and educate trail users about those features, which can be natural, cultural, historical, or recreational. Interpretive signs can also direct users to avoid impacting ecologically sensitive areas and educate recreational users about the environment, thereby creating a new purpose for recreational trails. Use distance markers, if necessary

Trail markings should be visible, yet unobtrusive, balanced according to the characteristics of the trail. In addition to indicating the trail route and reassuring users that they are on the trail, markers can also serve to influence the path taken by trail users, thereby helping to avoid trampling of fragile trailside vegetation and to prevent erosion

General guidelines to use when marking trails:

- Use aluminum nails for attaching markers. Aluminum resists corrosion better than other metals and will not damage a saw when a future cut is made across a hidden nail.
- When driving nails into trees, be sure to leave a sufficient length protruding (approximately ½ inch) to allow for future tree growth. An exception can be made in areas of frequent vandalism or theft.

- Place waymarks at eye level of the user, when possible. Eye level will be different depending on the type of trail user and amount of snow cover. (Waymarks should be placed higher on cross-country ski trails.)
- Be sure to mark trails in both directions, first from one direction and then from the opposite direction, in order to gain each perspective. It may not be appropriate to simply put markers on opposite sides of the same tree.
- Trails need to be continuously marked, including when they follow roads. Mark trails such that the next waymark is clearly visible from the previous one. However, avoid placing waymarks so that more than one is readily obvious from the previous. One well placed blaze or marker is better than several poorly placed blazes or markers.
- Be sure to keep vegetation pruned from in front of waymarks at all times, sufficiently allowing for summer growth.
- Painted blazes should have sharp corners and straight edges so that they are easily distinguished from natural objects when viewed from a distance. Blazes are best painted on trees larger than 3” in diameter with thick, darker bark that has been scraped smooth before painting.
- A double blaze, one above the other, signifies a sharp turn in the trail. Double blazes may be offset to signify the direction of the turn such that signifies a right turn and signifies a left turn.

Directional Signs

Directional (destination or wayfinding) signs are rectangular and are placed at trailheads, trail junctions, and road crossings. Directional signs should be mounted on a 4”x4” post and must be readily visible to trail users. Information on directional signs includes:

- the name of the trail
- significant destinations -(maximum of 4)
- the distance to each destination
- the direction to each destination (an arrow, unless the direction is obvious by the placement of the sign)
- the name or logo of the managing agency and/or maintaining organization may also be included.

The suggested material to be used for directional signs is a composite of phenolic resin with a polycarbonate laminate surface. This type of material is extremely durable and resistant to weather, ultraviolet radiation, and vandalism.

Trailhead Signs

A trailhead is the primary starting point of a trail. A trailhead sign is used to provide trail-specific information at the trailhead of each trail. However, trailhead signs may be posted on an informational kiosk if the kiosk is at the trailhead of a single trail. In locations without a trail-specific kiosk, the single-sided trailhead sign should be posted conspicuously so that it is readily visible to users entering the trail. At secondary trail junctions and road crossings, managers may choose to use marker posts to provide trail-specific information instead of using trailhead signs.

Information on **all** trailhead signs should include:

- Trail name
- Symbols showing allowable uses of the trail
- Total trail length

- Trailhead elevation along with maximum and minimum trail elevations
- Surface type, firmness, and stability
- Known trail hazards
- Difficulty rating for cross country ski and mountain bike trails, if rated. Most trails should only have a statement of difficulty that “Most people will find this trail to be...”
- A statement that posted information reflects the conditions of the trail when it was constructed or assessed (include the date) and that events beyond the control of park management can make trails temporarily inaccessible.
- Map of trail: either a trail-specific map or a park/ vicinity map with the trail highlighted. A standard trail map comprises approximately half of the trailhead sign. Copies can also be printed on paper for patron use.

Accessible Trails

Signs identifying trails and trail segments that have been **officially** assessed and designated as accessible to persons with disabilities shall be placed at the trailhead and at all designated access points. These signs shall display the official symbol designating that the trail or trail segment is accessible, and shall include the total distance of the accessible trail or trail segment and the distance to the location of the first point of exception to accessible standards. Marker posts may be used to display accessibility information at access points without trailhead signs. Decals are readily available to attach to flexible fiberglass marker posts. Where more extensive trail information is provided, the location of specific trail features and obstacles should be identified. When available, the following additional information should be included on trailhead signs:

- Trail-specific trail symbol
- Running slope (average and maximum grade)
- Cross slope (average and maximum Cumulative elevation change (gain and loss)
- Profile of the trail grade showing changes in surface type and accessibility
- Clear tread width (minimum and average)
- Tread obstacles (magnitude and frequency)
- Any major height obstacle, such as boulders, in the trail tread

The size of the trailhead sign should be such that both text and graphics are easily readable. The minimum size should be 12”x18”. Background colours, margins, and sizes of text and images are subject to change. The information included on each sign is subject to what is available

The standard for a trailhead sign that is presented here provides for a very simple sign that will be readily recognizable as the trailhead sign while avoiding an excessive amount of information that may deter some trail users from reading the sign. However, it may be desirable to provide other information, such as interpretive text and images, at a trailhead kiosk in addition to the standard trailhead sign. In this case, the standard sign can be integrated with the additional signage; however, the standard trailhead sign should retain its distinctive character as a separate section of the larger sign.

Kiosks

Trail information kiosks provide a central location, typically near trailheads or adjacent to parking areas, to welcome visitors to one or more trails and to prevent sign clutter by consolidating visitor information in one place. If there is only a single trail in the area, the kiosk may be located at the trailhead and include the trailhead sign. All kiosks should display an overall park map showing facilities and trails, either as part of the trailhead sign or displayed separately. A map of a large park

could be displayed across one entire side of the kiosk. The trail information kiosk may also include brochures and maps, provide a location for a trail register, and provide additional information such as trail conditions and amenities, trail etiquette, area characteristics, local history, trail organizations, degree of accessibility, rules and regulations, interpretive programs, and upcoming events. Emergency contact information should be clearly posted on kiosks and should include Police contact information.

Design specifications suggested design for Crowe Bridge includes a single panel on each side of the kiosk. Although these designs accommodate 32"x48" panels, the size and style of the kiosk can vary depending on what is needed for each specific site. For example, a bulletin board could be included for patrons to post temporary notices, or a single large panel could accommodate several smaller signs. Be sure that the kiosk is designed to accommodate the needs of its intended location.



Regulatory and Cautionary Signs

Regulatory signs convey information about park and trail regulations. There are regulatory signs along the roadway leading into the park. Only trail related signage is discussed in this manual- not park signage. To present a positive tone and to reduce over-signing, regulatory signs should emphasize allowable uses and, where possible, use symbols instead of text. In problem areas, prohibited uses can be shown as symbols with a slash across them. Regulation signs should be placed on trailhead kiosks; other regulatory signs should only be used along trails as necessary. Boundary signs are placed along Conservation Park boundaries, both to mark the boundary and to provide regulatory information to trail users entering or leaving the park.

Some cautionary signs point out potentially hazardous conditions along the trail, such as road crossings, narrow bridges, barriers, surface changes, sharp turns, and steep drops. They should

generally be posted in advance of the specific area or site of concern. Other cautionary signs provide important information for the safety and well-being of visitors. These informational signs should be limited to trail information kiosks.

Be especially conscious of the potential for too many regulatory and cautionary signs and try to keep trailhead kiosks aesthetically pleasing by designing and arranging signs in a harmonious fashion. Having an excessive number of signs may result in signs losing their effectiveness as they compete for the attention of trail users. Improper signing can be as detrimental as inadequate signing. At a minimum, stop signs should be posted at road crossings on trails that may have recreationists moving faster than a normal walking pace (ex. bikers). “Stop Ahead” signs should also be used on trails with faster moving recreationists. Road signs should clearly show the location of a trail crossing, as well as alert motorists well in advance of the crossing. However, be aware that any signs and pavement markings on public roads outside the park must conform to Municipal standards and must first be approved by the local municipality.

Sign Maintenance

Regular maintenance of signage is required. Signs are highly visible and their maintenance or lack of maintenance leaves the visitor with a positive or negative impression about the trail and the park. Well-maintained signs convey a sense of pride and reduce vandalism while poorly maintained signs may contribute to a diminished visitor experience, including disorientation of trail users.

The following guidelines are recommended:

- Maintain a record of all signage, including location, type of sign, and photo.
- Inspect signs regularly, especially after each winter season, for weathering and visibility.
- Repair or replace damaged or missing signs as soon as possible.
- Secure loose or tilting signs in an upright position.
- Clear vegetation from around signs to maintain visibility.
- For signs mounted on living trees, loosen fasteners as necessary to accommodate growth of the tree.
- Review signage content to ensure continued relevance and accuracy.
- Obsolete, damaged, or surplus signs should be reused or recycled whenever possible.

When signs have been weathered or otherwise damaged or destroyed, consider the reasons for the damage. If the sign was eaten by wildlife, consider less palatable materials. If weather or natural events damaged the sign, consider stronger materials, a different location, or a different system for mounting the signs. If the sign is damaged by water or decay, consider applying a sealer or preservative (assuring compatibility with color, aesthetics, and environmentally sustainable practices) or replacing the sign with a more water-resistant material.

Trail Signs and Structures

KIOSK- STRUCTURE AND TWO PANELS

DOG POOP AND SCOOP SIGN

CAUTION

CROSS COUNTRY SKIING

NATURE TRAIL

OR

INTERPRETIVE TRAIL

HIKING/WALKING SIGN

STOP

MOUNTAIN BIKING

PERMITTED USE

VIEWING

Reminder:

The location of signs is utmost importance. All signs should be placed so that they face the anticipated direction of traffic, are unobstructed by vegetation and easily read or understood. The signs should be consistent in style, colour and format.

Estimated Signage Costs

KIOSK- STRUCTURE with TWO INFORMATION PANELS

- Structure- \$2,500.00
- Two panels with graphics- \$3500.00

HIKING/WALKING SIGN

- Quantity (20) @ \$10.00 = \$200.00
- Posts and hardware = \$200.00

DOG POOP AND SCOOP SIGN

- Quantity (20) @ \$10.00 = \$200.00
- Posts and hardware = \$200.00

NATURE/ INTERPRETIVE

- Quantity (10) @ \$300.00 = \$3000.00
- Posts and hardware = \$500.00

CAUTION

- Quantity (10) @ \$10.00 = \$100.00
- Posts and hardware = \$100.00

STOP

- Quantity (10) @ \$10.00 = \$100.00
- Posts and hardware = \$100.00

PERMITTED USE

- Quantity (10) @ \$10.00 = \$100.00
- Posts and hardware = \$100.00

CROSS COUNTRY SKIING

- Quantity (25) @ \$10.00 = \$250.00
- Posts and hardware = \$100.00

MOUNTAIN BIKING

- Quantity (20) @ \$10.00 = \$200.00
- Posts and hardware = \$200.00

VIEWING

- Quantity (10) @ \$10.00 = \$100.00
- Posts and hardware = \$100.00

