

Ontario's Best Trails - Recreation-Able 2009

Ontario's Best Trails

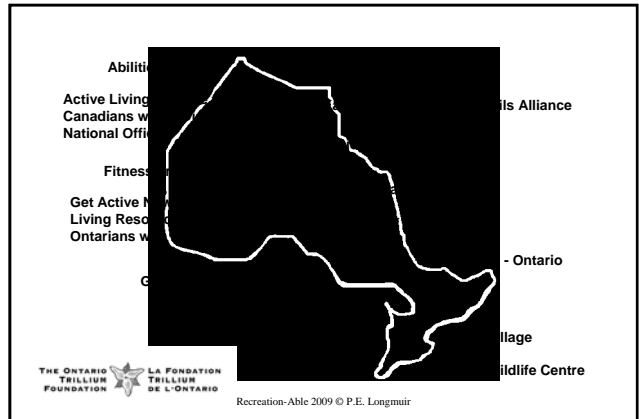


Guidelines and Best Practices for Design, Construction & Maintenance

Trails for All Ontarians Collaborative

October 1, 2009

Recreation-Able 2009 © P.E. Longmuir

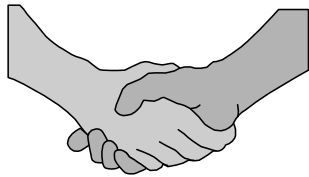


THE ONTARIO TRILLIUM FOUNDATION

LA FONDATION TRILLIUM DE L'ONTARIO

Recreation-Able 2009 © P.E. Longmuir

Sustainability & Accessibility



A partnership for success

October 1, 2009

Recreation-Able 2009 © P.E. Longmuir

Three Key Points

- Trail accessibility is essential
- Universal design achieves accessibility
- Sustainability achieves universal design

October 1, 2009

Recreation-Able 2009 © P.E. Longmuir

Accessibility is Essential

Open for use
Able to be reached
(Webster's dictionary)



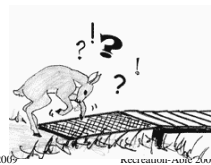
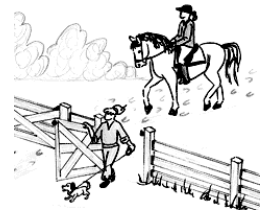
NOT everyone, everywhere
But places for everyone, somewhere

October 1, 2009

Recreation-Able 2009 © P.E. Longmuir

Understand All Users

Different interests
Different abilities
Different experiences



and wildlife

October 1, 2009

Recreation-Able 2009 © P.E. Longmuir

Ontario's Best Trails - Recreation-Able 2009

Universal Design = Access

Design philosophy that attempts to meet the needs of the widest range of potential users



Scarce resources are used for the greatest benefit

October 1, 2009

Recreation-Able 2009 © P.E. Longmuir

Who uses wheelchair ramps?

Cyclists
Children
In-line skaters
Delivery persons
Mothers with strollers
People using mobility devices and their companions



October 1, 2009

Recreation-Able 2009 © P.E. Longmuir

Universal Design NOT Universal Access

Ski trails can be only for skiers
Ski trails don't have to allow motorized users
Ski trails should be available to skiers with the appropriate experience, regardless of ability



October 1, 2009

Recreation-Able 2009 © P.E. Longmuir

Universal Design Principles

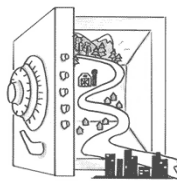
Equitable use
Flexibility in use
Simple and intuitive use
Perceptible information
Tolerance for error
Low physical effort
Size and space for approach and use



October 1, 2009

Recreation-Able 2009 © P.E. Longmuir

Sustainable Design



Choices that simultaneously enhance the wellbeing of both people and ecosystems without unbearable burdens -- environmental, economic, or social -- on future generations.

Adapted from Peck, S. Sustainable Communities for a Sustainable Planet

October 1, 2009

Recreation-Able 2009 © P.E. Longmuir

Environmental Sustainability



Keep trail users on prepared tread
Prepare tread to sustain permitted use
Minimize environmental impacts of use
Environmentally responsible construction

October 1, 2009

Recreation-Able 2009 © P.E. Longmuir

Ontario's Best Trails - Recreation-Able 2009

Economic Sustainability



Trails that all of us can support
 Reliance on more than one or two demographic groups
 Maintenance minimized through environmental sustainability

October 1, 2009

Recreation-Able 2009 © P.E. Longmuir

Social Sustainability

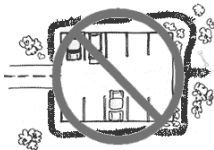


I won't go if can't bring my . . .

Trails that all of us can use together
 Is your _____ trail used by people who differ by gender, age, culture, experience, income, ability, . . .

October 1, 2009

Recreation-Able 2009 © P.E. Longmuir



Can trails do everything?

Don't build the flat, paved trail to nowhere!
 People want to go to a destination or through an environment

October 1, 2009

Recreation-Able 2009 © P.E. Longmuir

Can trails do everything?



Some people want extreme trails
 Some people want to walk in a city park
 People with disabilities make the same range of choices

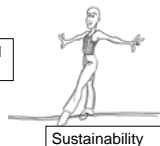
October 1, 2009

Recreation-Able 2009 © P.E. Longmuir

Can trails do everything?

Almost . . .

Universal Design



If you focus on:
 Universal design/accessibility
 Sustainability
 (economic/environmental/social)

October 1, 2009

Recreation-Able 2009 © P.E. Longmuir

Ontario's Best Trails

Ontario's Best Trails

Guidelines and Best Practices for the Design, Construction and Maintenance of Sustainable Trails for All Ontarians



Trails for All Ontarians Collaborative
 2008

THE ONTARIO TRILLIUM FOUNDATION



LA FONDATION TRILLIUM DE L'ONTARIO

<http://abilitiescentre.org/resources.html>

October 1, 2009

Recreation-Able 2009 © P.E. Longmuir

Ontario's Best Trails - Recreation-Able 2009

Ontario's Best Trails

Introduction
Sustainable and Universal Design
Guidelines for Trail Design
Guidelines for Trail Construction
Best Practices for Trail Construction
Guidelines for Trail Maintenance
Best Practices for Trail Maintenance

October 1, 2009

Recreation-Able 2009 © P.E. Longmuir

Guidelines for Trail Design



The ideal trail is . . .
Seamless with the outdoor environment

D. Beers & K. Knapp, 2006

October 1, 2009

Recreation-Able 2009 © P.E. Longmuir

Understand the Trail

Design from an in-depth understanding of the natural environment
Balance demands of conservation, recreation, and transportation
Preserve and protect the natural environment

October 1, 2009

Recreation-Able 2009 © P.E. Longmuir

Trail Layout

Curvilinear/contour design layout
Maintain natural sheet drainage patterns
It's all about water!!



October 1, 2009

Recreation-Able 2009 © P.E. Longmuir

Construct for Sustainability

Pull up and into drainages



October 1, 2009

Recreation-Able 2009 © P.E. Longmuir

Photo credit: Don Beers

Avoid the "old tried and true"



When the "old hands" started building trails they didn't have the benefit of what we know today

Recognize that changing old habits is hard and can have a political cost, but the cost of unsustainable trails is far higher

October 1, 2009

Recreation-Able 2009 © P.E. Longmuir

Ontario's Best Trails - Recreation-Able 2009

Start with in-depth knowledge

- Start by walking the land
- Identify control points (+ and -)
- Don't rely on people/animal trails
- Avoid wet environments
- Design for minimal maintenance
- Plan construction practices/routes



October 1, 2009

Recreation-Able 2009 © P.E. Longmuir

Guidelines for Construction

- Focus on sustainability
- Minimize environmental impact
- Follow construction log from designer
- Rehabilitation immediately and completely

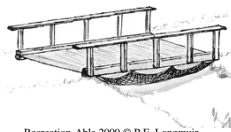
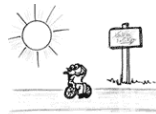


October 1, 2009

Recreation-Able 2009 © P.E. Longmuir

Construct . . .

- Trail tread
- Trail information system
- A safe work environment
- With minimal environmental impact



October 1, 2009

Recreation-Able 2009 © P.E. Longmuir

Construction Best Practices

- Minimize soil erosion and compaction adjacent to trail
- Train workers to minimize damage
- Contain and remove all debris

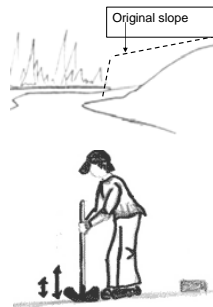


October 1, 2009

Recreation-Able 2009 © P.E. Longmuir

Trail Surface

- Choose a sustainable soil or material
- Prepare the ground
- Cut the bench - outslope
- Install and compact the tread material



October 1, 2009

Recreation-Able 2009 © P.E. Longmuir

Trail Surface

- Install and compact the tread material
- Restore the environment



October 1, 2009

Recreation-Able 2009 © P.E. Longmuir

Ontario's Best Trails - Recreation-Able 2009

Guidelines for Maintenance



- Plan maintenance activities
- Maintain drainage
- Maintain the trail tread
- Maintain structures/facilities
- Restore the trail environment

October 1, 2009

Recreation-Able 2009 © P.E. Longmuir

Maintenance Best Practices



- Maintain outslope
- Ensure drainage structure function
- Replace / repair structures moved by flood



Don't fight the beavers!



October 1, 2009

Recreation-Able 2009 © P.E. Longmuir

If you can't do it . . .



Photo credit: Patti Longmuir

October 1, 2009

Tell people !!!

BELFOUNTAIN TRAIL				
ONTARIO METROPOLITAN TORONTO				
General Information	Trail Details	Sites Services	Trail Contacts	Trail Location
measurements	width	grad	Xslop	elevation
	min. 0.01 m	10.00 %	4.3 % m	NA
	max. 1.25 m	93.00 %	29.5 % m	NA
map reference	[040P16 43 48 N 80 01 W]			
environments	Rural			
surfaces	soil, compacted_wood, boardwalk_soil			
trail uses	dog_walking, hiking, snow shoeing, walking			
prohibited trail uses	not specified			
seasons	Jan - Dec / All year			

October 1, 2009

Recreation-Able 2009 © P.E. Longmuir

W.E. Bill Sauer Nature Trail North 0.6 mi.

- Hikers No Bikes
- Grade Typical 4%
317 ft of the trail is greater than 5%.
- Cross Slope Typical 1%
317 ft of the trail is greater than 2%.
- Tread Width Typical 60 in
Minimum 58 in
- Surface Type Aggregate/Gravel
- 3 in Rocks 1 in Roots

Expect the Unexpected



Photo credit: Beneficial Designs

October 1, 2009

Recreation-Able 2009 © P.E. Longmuir

Avoid Design "Tragedies"



October 1, 2009

Recreation-Able 2009 Photo credit: Beneficial Designs

Ontario's Best Trails - Recreation-Able 2009

Ensure Your Park or Trail



Photo credit: Don Beers

Provides the Best Experience . . .



Photo credit: Patti Longmuir
October 1, 2009

Recreation-Able 2009 © P.E. Longmuir

for Everyone !!




Photo credit: Karl Knapp
October 1, 2009





Photo credit: Frieda Baldwin



Recreation-Able 2009 © P.E. Longmuir