

Enhancing Trail Access for People with Disabilities*

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Abstract

The purposes of this project were to introduce the Universal Trail Assessment Process (UTAP) in Ontario, utilize the UTAP to document trail conditions, identify trail conditions which significantly affect access, evaluate the benefits of the trail information for users with disabilities and identify additional information or changes required for users to make informed choices about which trails are appropriate to their abilities.

The most significant barrier to trail access for people with disabilities is a lack of accurate information about the conditions of particular trails. The resulting uncertainty about what will be encountered on the trail may discourage people from attempting a trail outing or may result in frustration or injury if the conditions encountered exceed the users' abilities.

The Universal Trail Assessment Process (UTAP) was developed to provide objective information about measures of trail conditions. Preliminary UTAP research indicated that five factors significantly affect trail access: grade; cross slope; surface; trail width; and obstacles encountered. Trail assessments were conducted on the same trail at different times to establish the test-retest reliability of the UTAP. Different individuals also assessed the same trail to evaluate the inter-rater reliability. Validity of the assessment process was determined by comparing the objective measurements with user perceptions of trail difficulty.

The UTAP was implemented on six trails at an outdoor centre in Toronto. The data obtained (Table 1) from the trail assessments were provided to rehabilitation professionals who lead a hiking camp for adolescents with disabilities. Average trail grades ranged from 2% to 4%, with average cross slope values of 1% to 4%. In contrast, the maximum values for grade and cross slope were 26.0% for 7.3 metres and 21.0% for 3.1 metres, respectively. These examples illustrate the importance of recording maximum as well as average values for grade and cross slope. Four of the six trails maintained a width of 1.5 metres throughout, with a paved or firm surface. The other trails had portions which were slightly narrower (1.3 and 1.1 metres) or had a softer surface.

The staff and campers compared their expectations based on the UTAP information to the actual conditions that they experienced on the trail. Feedback received from the trail users indicated that the UTAP provided accurate, reliable information about the trail conditions which enabled the users to make informed decisions about which trails they wished to use. Trail users also indicated that the information encouraged them to participate and increased their ability to use the trails independently and safely. It also enabled them to plan for any

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assistance that they might require by increasing their knowledge of trail conditions and enhancing their ability to match the trail conditions to their personal abilities or desired trail experience. They indicated that the grade profile was very useful, particularly since it included a reference to the 1:12 grade, which is a used for a standard ramp. The top-view map that included trail access information and surface changes was also considered valuable.

UTAP Measurements	BV Trail*	TR Trail	VC Trail	OL Trail	UW Trail	BW Trail
Length (km)	0.42	0.24	0.11	0.42	0.87	0.08
Ave. Grade (%)	4.0	2.0	2.0	4.0	3.0	2.0
(Max.(%)-metres)	(12.0-11.9)	(9.0-28.0)	(7.0-25.9)	(21.0-12.2)	(26.0-7.3)	(26.0-2.1)
Ave. Cross Slope (%)	4.0	1.0	1.0	2.0	3.0	1.0
(Max.(%)-metres)	(13.0-1.8)	(4.0-0.6)	(6.0-0.6)	(12.0-2.4)	(21.0-3.1)	(4.0-0.6)
Ave. Width (metres)	1.5	1.5	1.5	1.5	1.5	1.5
(Min. (m))	(1.3)	(1.5)	(1.5)	(1.1)	(1.5)	(1.5)
Surface	Firm	Firm	Paved	Firm	Firm	Hard
(Soft surface (m))	(24.7)	(0.0)	(0.0)	(59.1)	(0.0)	(0.0)

*Trails are identified using reference codes only.

Table 1: Trail Access Information for Six Trails in Ontario

The data were also provided to the interpretive and maintenance staff of the outdoor centre. Feedback from these trail experts was used to evaluate the effectiveness, accuracy and usefulness of the information obtained. The results indicated that the Trail Access Information (TAI) summary and the trail grade profile accurately reflected the current trail conditions and identified soft surfaces and/or drainage concerns of interest to the maintenance staff.

Benefits of the UTAP identified by land management staff related to both resource preservation and the delivery of services to trail users. The detailed maintenance logs generated through the UTAP provided the land managers with the ability to document and monitor trail conditions, plan and prioritize projects, budget more effectively, monitor the environmental impact of the trail and identify barriers which significantly affect access. Feedback indicated that these were identified as benefits that would assist land managers in enhancing the preservation and management of the resource. Increased user satisfaction and safety and the potential to increase opportunities for all trail users with and without mobility limitations resulted from the availability of detailed, objective and accurate information about trail conditions. The identification of access barriers allowed land managers to focus their plans for future work. It also gave them the ability to create signage and provide additional information. It was also felt that the detailed information provided by the assessment would enhance the agency's search and rescue and emergency evacuation capabilities should these services be required.

In conclusion, the Universal Trail Assessment Process was successfully used to document conditions on six trails in Ontario. The accuracy of the information was verified by land managers and was made available for use in project planning and budgeting. Evaluation of the Trail Access Information (TAI) by staff and people with disabilities (n=12) supported the use of icons, maps and other graphics to convey trail access information. Users indicated that they require the TAI summary information and may also sometimes require additional details to

determine whether the trail conditions on a specific trail are suited to their ability. Overall, results of this project indicate that the UTAP provides accurate, objective information about trail conditions that benefits both park staff and trail users.

Recommendations from trail users for future work included expanding the use of the UTAP so that consistent information is available from trail to trail, park to park and region to region. Enhancing the use of icons and graphics to represent the trail data was also recommended, particularly for visual learners. As a minimum, information on conditions affecting access such as grade, cross slope, width, surface and obstacles should be available at all trails. In addition, information about other features such as stairs and railings should be provided. More detailed information like the presence of long grade sections which are less than the maximum value, should also be available from the park management for users who require more specific information.

Future project work will include completing additional UTAP assessments for trails throughout Ontario; providing training for land managers who wish to conduct UTAP assessments; refining and implementing signage and information formats and evaluating the use and impact of Trail Access Information for a larger sample of land managers and users of all abilities.

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