

## 152 Providing accessible recreation outdoors: User-driven research on standards (PARCOURS) – Research protocol

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### Background

Although people with disabilities desire outdoor park experiences similar to other visitors, getting around parks and enjoying their features can be a challenge. There are environmental obstacles and hazards that affect the accessibility and enjoyment of parks (i.e., wayfinding) as well as difficulties maintaining orientation and direction (i.e., wayfinding) that can result in anxiety. These conditions can diminish the many benefits attributable to park participation. In Canada, federal parks have a duty to accommodate, as best they can, the diverse needs and preferences of people with disabilities who make up 22.3% of the population. In response to this imperative, Canada is in the process of developing accessibility standards to ensure universal access. The overarching purpose of this study, funded by Accessible Standards Canada (ASC), is to inform these standards through the lived experiences of people with disabilities. The objectives are to identify and prioritize the impact environmental factors have on the ability of individuals to gain access to and enjoyment of all aspects of the park experience, document the range of these requirements, and develop and prioritize standards that can be used by parks to promote accessibility in parks. The following describes the proposed protocol for the study.

### Methods

This mixed-methods, three-phase study will be conducted over a 2-year timeframe. Phase 1 will be a systematic review of existing standards used internationally and an environmental audit of accessibility conditions in six parks located in two Canadian provinces to be used in the phase 2 mobile interviews. Parks have to be in diverse settings

(mountains, forests, shorelines) and offer a variety of experiences that are similar to those found in federal parks (hiking, skiing, swimming). Two of the six parks are in moderate rain forest regions that do not experience as much freezing temperatures or snow. The study has received ethics approvals from local ethics boards.

Phase 2 will include 24 people with a variety of disabilities and assistive device supports, over the age of 18, can communicate in English or French, and can walk or wheel approximately 2 km. A convenience sample of participants will be recruited from databases of previous participants and postings on research sites. Our goal is to recruit 3 people who use manual wheelchairs, 3 people who use power wheelchairs, 3 people who use scooters, 3 people who use walkers, 3 people who use canes or crutches, 2 people who are D/deaf or hard of hearing, 3 people who are blind or partially sighted, and 4 people who have a variety of cognitive, developmental, or mental disabilities such as autism or dementia. All participants (N=24) will complete one mobile interview in the summer and half (N=12) will repeat this exercise in the winter in the same park. The interview will take place along a series of three connected trails (approximately 600 – 1400m in length). The trails were chosen to maximize the trail experience as well as many features (e.g., benches, beaches, lookouts, signs) as possible. In phase 3, findings from the review and interviews will inform the creation of potential standards that will be recommended to the ASC based on the findings of a series of Delphi panels.

## **Data Collection**

In phase 2, participants will be assigned to one of three parks in their province that will maximize the diversity of participant mobility requirements. At the site, Covid-19 safety procedures will be reviewed as well as the purpose of the study and their rights to discontinue the study at any time without compromising their stipend. Participants will be taken to the starting point of the first route where they will be given a map of the route with the destination displayed. During travel, they will be asked to provide insights using semi-structured questions about their subjective experiences and structured questions about feature accessibility. The mobile interview will be recorded by a researcher using an audio recorder and GoPro video camera with GPS. Participants will also wear eye-tracking glasses to determine what objects they focus as they travel.

At the end of each route, participants will be asked to verbally recall the route with as much detail as possible and draw this (sketch map) on 1) a blank piece of paper and 2) a satellite map of the route. For those that are not able to draw, the researcher will use their verbal description to create a sketch map. The maps will be annotated with comments and recommendations for improvements described by the participant. Participants will also be asked to rate the difficulty of the route and complete spatial skills tests that asks them to point to the start of that route

using a compass and estimate the distance and slope to a pre-defined landmark.

The findings from the wheeling/walking interviews will be transcribed and coded using a framework that addresses the wayfaring and wayfinding challenges faced by people with disabilities. These codes and direct quotations will be imported into a GIS along with the GPS tracks and digitized sketch maps. Together, these will constitute a spatial transcript that will be used during phase 3 where a consensus will be developed using several national Delphi panels that focus on specific areas (e.g., trails and paths, information, services) to identify and prioritize standards that should be implemented.

## **Discussion**

We plan to identify a range of park experiences, preferences, and requirements that will inform the accessibility standards of outdoor parks, emphasizing the diversity in accessibility needs due to personal factors. Secondary findings may also highlight other interventions that could be used to improve park experiences such as programs and services that address personal fitness, information provision that can be used for planning trips and during travel, adaptations to mobility device adaptations, wayfinding training, improvements to surfaces and signage, and inclusive planning strategies that incorporate the diverse needs of people with disabilities.