

Reimagining Accessible Navigation for Individuals In Wheelchairs

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How might we create an accessibility-first app experience to help individuals in wheelchairs *navigate urban spaces* confidently, *plan routes* smoothly, and *contribute* with their experience?

Scan the QR code to try our prototype.



Gaps in Current Apps

Current tools offer limited support, often lacking reliable details about real-world barriers such as inaccessible entrances, steep slopes, or limited elevator access, making travel unpredictable.

Our Proposal

This project proposes a Step-Free Mode in Google Maps that surfaces accessibility information upfront. By leveraging community-driven reporting to build shared knowledge, it helps to provide real-time insights, allowing users in wheelchairs to navigate more independently and confidently.

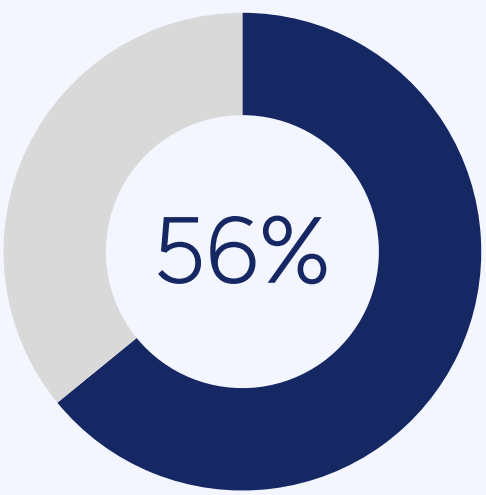
Why a Dedicated Mode

In apps such as Google Maps, accessibility is often hidden or treated as optional, creating uncertainty for wheelchair users. A dedicated Step-Free Mode highlights essential information reducing cognitive load and enabling more stress-free navigation.

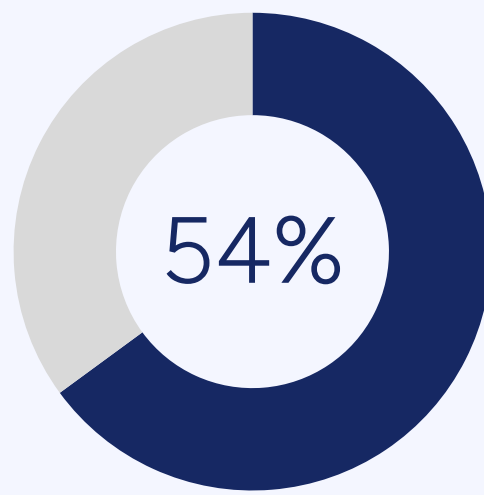
Research Background

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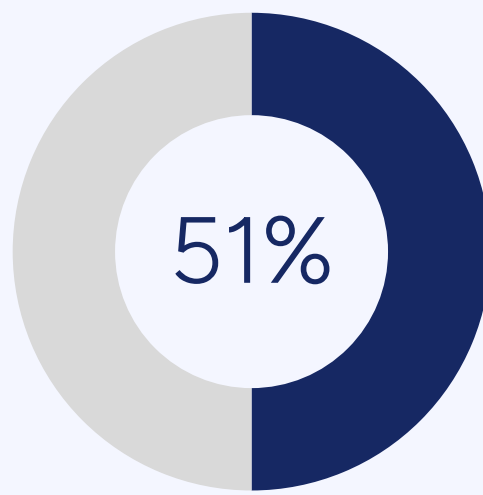
26% of Canadians live with a physical disability.¹



people with disabilities experience barriers in outdoor urban spaces.¹



Canadians experience anxiety when getting around public places.¹



Canadians feel socially isolated due to a lack of accessible places¹

Why Individuals in Wheelchairs?

We focused on wheelchair users as our primary demographic, informed by both research and personal connections. This allowed us to deeply explore mobility barriers while designing a solution that can be scalable in the future to support a wider range of accessibility needs.

Research Methods

Desk Research

Analyzed peer-reviewed journals, statistics, national accessibility guidelines and digital content to understand mobility disabilities and barriers users face.

Prototype User Testing

Tested the prototype with 3 individuals in wheelchairs to evaluate navigation features and gather design feedback for further iterations.

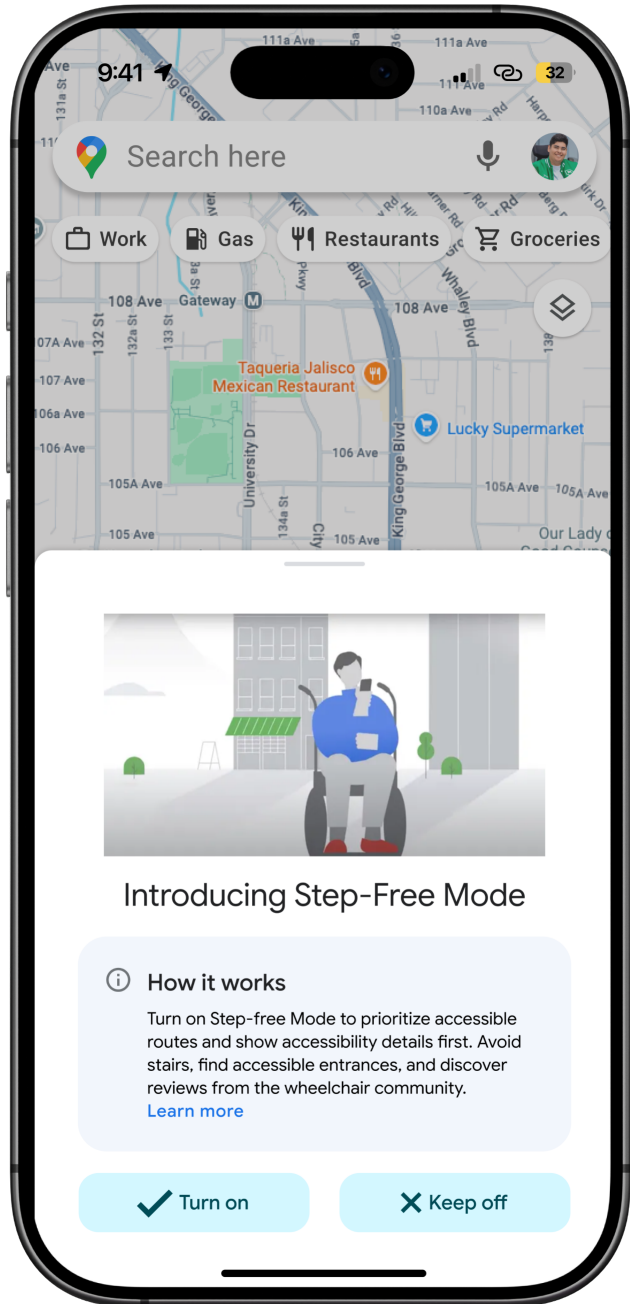
Interviews

Spoke to 13 accessibility professionals (3 being individuals in wheelchairs) to learn about accessibility best practices and the current everyday experiences.

Wheelchair Routes Audit

Conducted a wheelchair audit activity to identify and document physical accessibility barriers firsthand.

Research Based Design

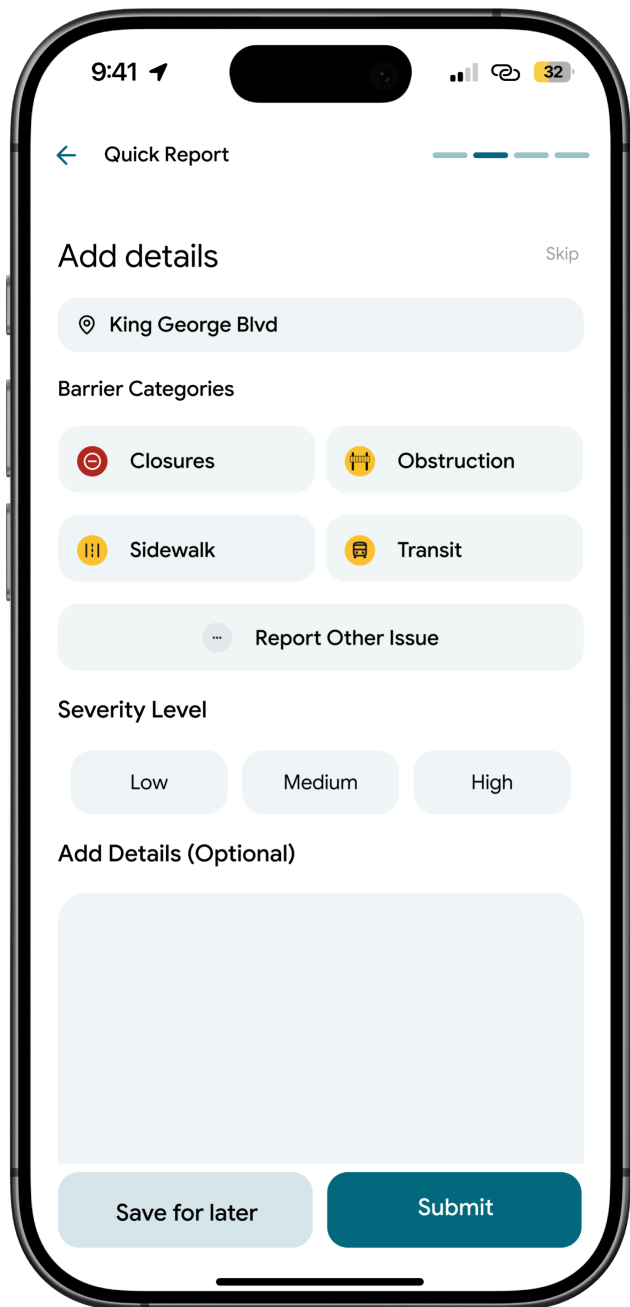


RESEARCH INSIGHT

Unclear and outdated accessibility information limits confidence, resulting in many wheelchair users to go out *only* for essential trips.

Feature 1: Surfacing Step-Free Mode

Step-Free Mode prioritizes accessible routes, helping users avoid stairs and discover entrances that support mobility needs. Whether you're commuting or exploring, it makes getting around more inclusive and stress-free.

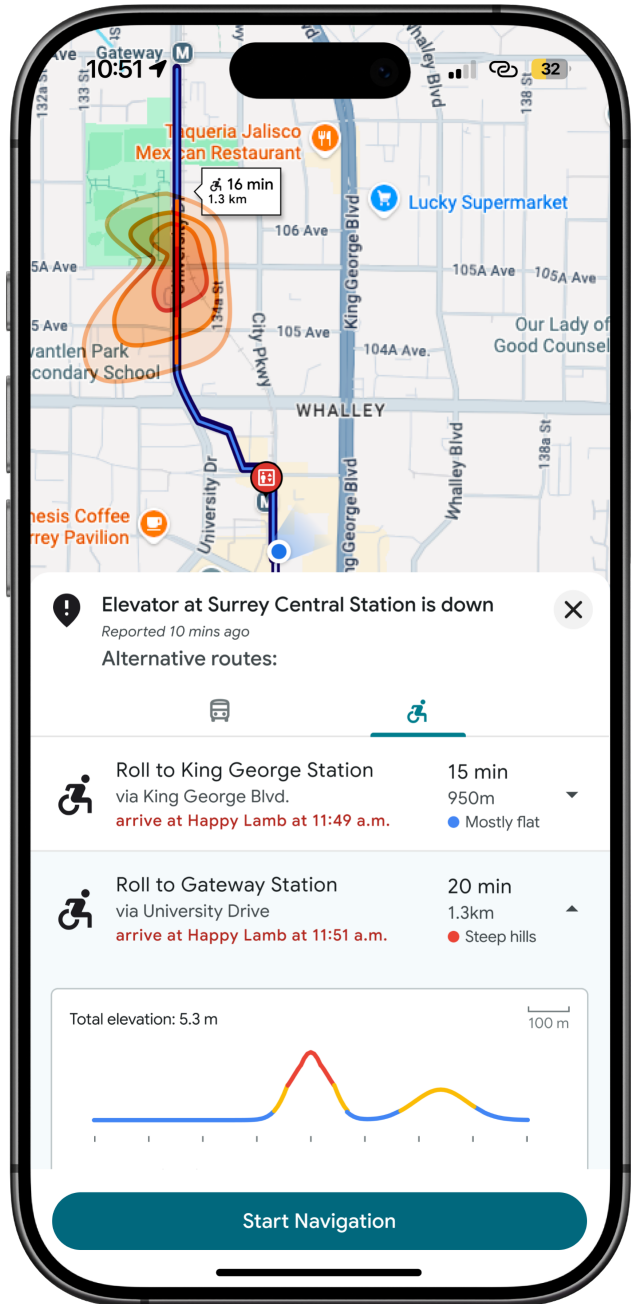


RESEARCH INSIGHT

The ability to report barriers encountered along the way builds shared awareness and creates a sense of community around both temporary and permanent accessibility challenges across the city.

Feature 3: Community Reporting

Users can report real-time accessibility issues, helping to keep information current while supporting others in making informed navigation decisions.

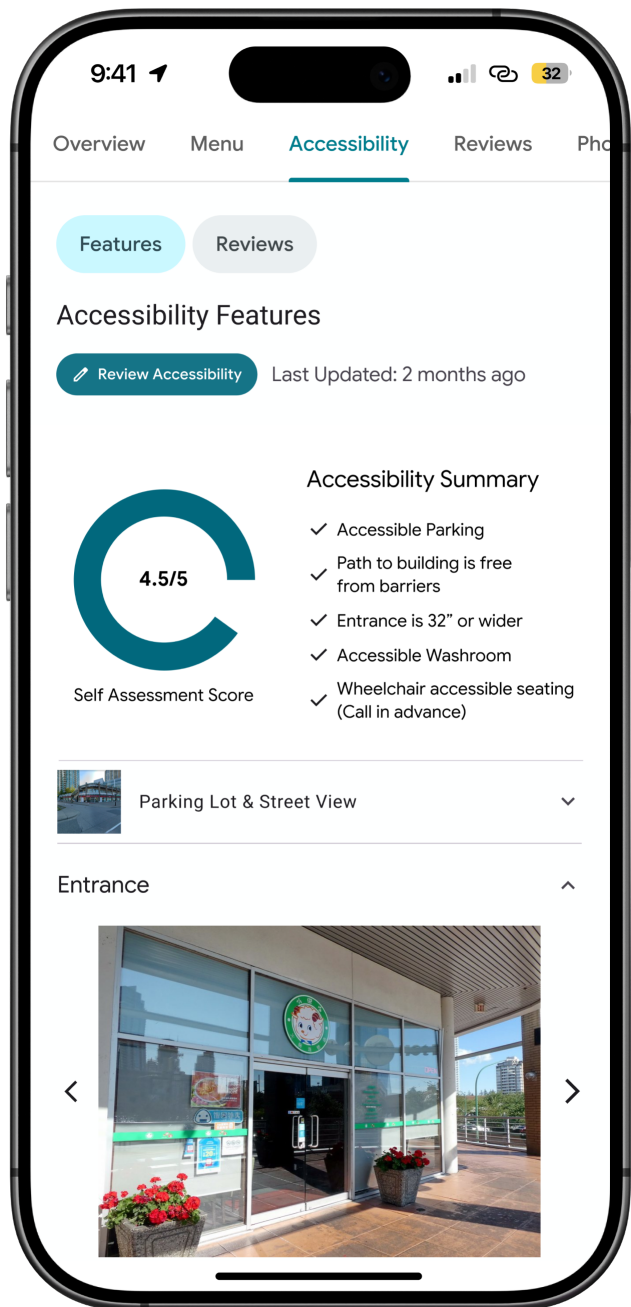


RESEARCH INSIGHT

Doing research beforehand helps reduce stress, but when the actual space doesn't match what was described, it often means figuring things out on the spot or leaving if key accessibility features aren't working.

Feature 2: Workarounds

When elevators or step-free paths are unavailable, the app instantly alerts you and suggests alternative routes tailored to your mobility needs. With real-time updates and clear elevation insights, you can choose the route that works best for you.



RESEARCH INSIGHT

Accessibility is for everyone. Knowing what features exist inside and outside a space makes planning and decision-making easier for me and others I'm going out with.

Feature 4: Accessibility Details

View accessibility ratings, key features, and real photos of entrances, parking, and interiors so users can make informed decisions before going out. Details like doorway widths and seating plans help users know what to expect and plan with confidence.