

MAKING METROLINX ACCESSIBLE



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IMPACT

Technology made life simpler and easier, from assisted crossways to text to speech recognition technology - all of which are available at our fingertips, even when we hardly need them! However, those that would benefit most from this tech have been left out. Let's make a real impact by improving everyone's journeys!

A scenario where our solution can be implicated:

Issue

“Customers [with] visual impairments, [find it] challenging to find elevators or exits when getting off a train. Some customers have to rely on staff to bring them to or from the train.” - a quote from Metrolinx Accessibility Public Meeting Feedback Summary (2018)

Solution elucidated

Install static QR code systems on pillars and floors of stations and platforms, directed by tactile floors. Through this, the rider can self-assist. Individuals without smart devices can request assistance via the help button, which conveys the same information auditorily.



Sourced from Japan Metro

For more independent navigation for individuals with visual impairment, the alpha solution is cost-efficient and requires minimal staff dependency for users.

CASE STUDIES

Japan

Source: Barrier free

At JR Shin-Kobe station in Japan, Progress Technologies spearheaded the development of a navigation system using tactile blocks and QR code technology to help people with visual impairments navigate the metro system. They placed these in strategic locations such as where the path splits or before reaching a flight of stairs.

USA

Source: Sanatoni Report

Bexar County in Texas implemented NaviLens technology which uses QR codes, placed at key points in the station. The QR codes can be scanned using an app, from up to 12 meters away without focusing on it. NaviLens technology has been implemented for over 2000 bus stops for \$11,000.

Beacons

Source: Houston Chronicle

Chicago's lighthouse is testing *Beacons*, a Bluetooth-like technology that sends signals to devices within range. Houston Metro is receiving positive feedback from their target audience for helping the visually impaired navigate, by installing 2,400 Bluetooth beacons along 11 major bus routes to locate bus stops more easily.

THE PROBLEM

Peter is a 30-year-old male who is legally blind in one eye. This means that his light and colour perception cannot be fixed with prescribed glasses. He prefers to take the GO Train by himself and was an eager user of the WayFinder program. However, since the pandemic, the WayFinder program has been limited. This is Peter's first time navigating this particular GO train station. He uses a cane to travel, a bag pack, a guide dog and a phone with limited data. He always complains about the apps on his phone draining the battery.

Let's help Peter have a stressfree, accessible journey with Metrolinx

Quotes from MetroLink users

“I try to use transit services as little as possible because I have a hard time maneuvering because there are little to no indicators within the stations -at least for me” - *GO transit user with visual impairment*

"There are currently many pain points throughout my journey" - *GO transit user with visual impairment*

"Half of my time is spent looking around to find someone to assist me to find my platform or exits" - *GO transit user with visual impairment*

OUR SOLUTION

Alpha Version

- Contrastingly coloured static QR codes placed by doors, lounges and other spaces help Peter access information about the layout of the room (exits, ticket kiosks, security, staircases, VIA Rail, TTC, direction, platform info, etc.)
- In a train or bus station, directional tactile mats are placed across his path, this lets Peter know that the QR code he can use to find his way to the platform is nearby.
- On station platforms, Peter can access the QR code that is painted on the floor, this tells him the direction to the elevator or the accessibility coach.
- When Peter's smart devices have technical issues, he's still able to navigate thanks to the button near the QR codes. He's not afraid to use it because it works similar to the crosswalk buttons he's already familiar with.

Beta Version

Low-range, high-frequency radio transmitters (similar to Bluetooth) are placed across the station. Peter's auditory device connects when he is in range, which then tells him the information he needs to navigate the station. The QR codes are still available for times he prefers not to use the auditory device.

COST

Alpha Version

Costs for the Alpha Version include:

- 2 buttons/station
- 60 static QR codes/major station
- 20 static QR codes/smaller station
- 74 train stations
- Tactile mat installation

Cost
\$11,000



Beta Version

Costs for the Alpha Version include:

- App development costs (\$60,000)
- \$53 CAD/Bluetooth
- 74 train stations
- 12 Bluetooth/major stations
- 6 Bluetooth/smaller stations

Cost
\$100,000



*Quotes are in \$CAD