

# First and Last Mile

## How can Cities Fix the First and Last Mile Problem?

### Introduction

The first and last mile describes the beginning and end of an individual's trip made primarily by public transportation. Many cities are facing a first and last mile issue as transit stops are often located in high traffic locations, therefore, many transit riders are often left in challenging situations for the first or last portion of their trip.

According to a study by [consulting firm McKinsey](#), 90 percent of people would rather drive than use transit when having to walk more than half a mile to the nearest stop resulting in a decrease in ridership (McKinsey Sustainability, 2017).

For people who rely on public transit and may not have another means of transportation, the first and last mile issue can prove challenging for individuals impacted by blindness or low vision. Availability of locating the next bus stop, uneven terrain, lack of sidewalks, inadequate information about options and lack of availability for alternate transportation to reach a final destination after leaving the transit system, could prove to be unnerving for any traveler but maybe more so for a person impacted by blindness.

### Ridesharing Programs

To resolve the first and last mile problem, many cities have turned to ridesharing programs to connect travelers from their homes to a transit station or vice versa.

Some cities have been experimenting with ridesharing programs such as Uber and Lyft by subsidizing rides. As long as a commuter is going from between a transit stop and home, they are eligible to receive discounted rates. The city of Seattle for instance has been offering on-demand ridesharing services to provide commuters with safe and reliable transportation. Commuters must download an app to request a ride from various service locations to a nearby transit stop. For more information visit: [How Cities Can Solve the First and Last Mile Problem.](#)

While ridesharing programs can be accessible, rideshare does require a mobile phone and data plan to be utilized. The affordability of mobile phones and data plans can become a barrier to this mode of transportation. It is also uncertain if ridesharing apps have been designed efficiently and with careful consideration to support commuters impacted by blindness.

## Microtransit

Microtransit is another form of on-demand transport options. Similarly, to rideshare, microtransit connects people to bus stops or to their final destination. Users can request a ride through the mobile app, which allows users to make real-time ride requests, track the driver's location and enable payments through the app. To be a more inclusive and accessible service, most microtransit ride requests can be requested by phone. This can make it easier for people who do not have access to a smartphone.

While ridesharing services like Uber and Lyft are typically more popular in urban cities, microtransit services usually serve low-density areas that lack other transportation options. Microtransit creates an efficient and accessible means of transportation for people who live in these areas.

For seniors and people with disabilities who rely on public transit, microtransit optimizes paratransit options that are often less convenient. Paratransit is available in cities and towns with fixed bus routes for those with disabilities. Many paratransit drivers go through specialized training to be able to assist riders with various disabilities. Microtransit using wheelchair-accessible cars which may suit the needs of many paratransit customers. Users must schedule rides to use paratransit, therefore the flexibility of microtransit services is often more attractive to many users.

For more information about microtransit visit [Foursquare ITP](#).

## Autonomous Shuttles

Autonomous shuttles are another transportation option to solve the last mile problem. Canadian cities have already begun pilot projects.



Photo of the Insight Project 's autonomous shuttle.  
Source: Homecareuk, 2017.

In 2020 Ottawa tested how their shuttle performed while co-existing with traffic on the road. Testing was done to assess the shuttle's automated driving capabilities, its battery energy efficiency and to allow riders to give feedback regarding this new technology.

When such technology is being developed, it must adhere to the needs of a wide range of people to accommodate a diverse ridership. In the UK, an autonomous shuttle company called the INSIGHT Project engaged with blind and low-sighted groups to fine-tune their shuttles to make their pods as accessible as possible.

With recommendations from blind and low vision groups, the shuttles were equipped with a 4D tactile display, developed by the Conigital Group. This provided blind users with continuous sensory feedback of their entire trip.

According to the document [Going that LAST MILE? Driverless low-speed vehicles, known as autonomous Pods, are being developed to make travel easier, particularly for blind and visually impaired people](#), indoor and outdoor positioning systems will allow blind users to know their exact locations using a smartphone app and will link to a cloud-based system, so nearby vehicles can be virtually requested or 'hailed'. The shuttle is also equipped with advanced 3D-imaging systems and sensors to enable safe navigation through pedestrian areas.

Autonomous shuttles provide a good solution to the first and last mile problem. Depending on the size, some shuttles can carry up to 15 passengers. Shuttles can be deployed in urban centers or in rural areas where transit with fixed bus routes may not meet the demand of ridership. These shuttles can operate on open roads in cities or private sites, such as university campuses, business parks, airports, and hospitals. When done right, these shuttles also provide people who are visually impaired with an accessible and reliable transportation option.

Public transportation is an important part of everyday life for many people. It connects commuters to their community and gives people, especially people who are impacted by blindness, the chance to become independent while traveling to school, work, shopping and anywhere they choose to go. New technologies such as autonomous vehicles and initiatives like ridesharing programs and microtransit are key to help solve the first and last mile problem.

### **Recommendations:**

- First and last mile solutions such as shuttles, rideshare or non-conventional buses must accommodate a diverse ridership.
- Canadian cities have begun pilot projects using autonomous shuttles and these experiments must include riders impacted by blindness or low vision in determining the effectiveness or viability of the service.
- First and last mile transportation methods must accommodate people using guide or service dogs ( if required), so that the animal is able to safely lie at rest beneath or next to their handler's seat.

