# **Challenge one: Vehicle stop design**

### **Document Intent**

This document sets out the first challenge in our programme. It explains the problem disabled passengers face at vehicle stops, the opportunities for innovation, and what we are (and are not) looking to fund. It is intended to guide applicants in shaping proposals.

### **Contents:**

1. Overview
2. The Challenge
3. Evidence from Disabled People
4. Opportunities
5. Requirements
6. Out of Scope

### **1. Overview**

This challenge looks at all types of vehicle stops, including but not limited to bus, tram, taxi stops and train stations.

We want to improve the design of future vehicle stops so they are:

* Universally accessible
* Predictable and clear
* Supportive of passenger autonomy, dignity, and confidence

Disabled passengers should not have to take on extra responsibilities to travel.

### **2. The Challenge**

**Question:** How might we design future vehicle stops that are universally accessible, predictable and informative for people with diverse impairments so they can travel with autonomy, dignity and confidence.

### **3. Evidence from Disabled People**

Disabled passengers often face barriers at stops, causing stress and uncertainty:

* **Signage and navigation**: unclear or inconsistent, especially during disruption.
* **Hailing and boarding**: blind and partially sighted people rely on auditory cues, often missing or unreliable.
* **Physical access**: wheelchair users face inconsistent boarding points, tight spaces, and lack of toilets/changing places.
* **Sensory environment**: loud noise, bright lights, and crowded spaces are challenging for neurodivergent passengers.

These issues cause anxiety and reduce independence. People want clearer, multisensory navigation, reliable real-time information, and calmer, safer environments.

These findings are from ncat Research: visit the below links to access the resources

* [Resource Collection](https://www.ncat.uk/projects/the-resource-collection/)
* [Transport Barriers Database](https://www.ncat.uk/what-we-do/transport-barriers-database/)
* [Understanding and Identifying Barriers to Transport](https://www.ncat.uk/projects/understanding-and-identifying-barriers-to-transport/)
* [Translating Research Into Design Challenges](https://www.ncat.uk/projects/translating-research-into-design-challenges/)
* [all ncat Projects](https://www.ncat.uk/what-we-do/projects/)

### **4. Opportunities**

We are looking for projects that:

* Improve **predictability, clarity, and comfort** at every stage (approaching, waiting, hailing, boarding, transferring).
* Work in **different contexts** (urban/rural, weather, vandalism, maintenance).
* Support a **wide range of impairments** (physical, sensory, cognitive, neurodivergent) using physical, sensory, and/or digital features.
* Minimise passenger effort and planning.

### **5. Requirements**

* Projects must address the challenge directly.
* All projects should reduce, not increase, the responsibility placed on passengers.
* Must comply with UK accessibility law and guidance (Equality Act 2010, Inclusive Mobility, BS 8300).

### **6. Out of Scope**

We will not fund solutions that focus on:

* Vehicle interiors, ramps, or onboard technology
* National policy or reforms
* Ticketing, scheduling, or routing
* Large-scale experimental technology
* Smartphone-only solutions (without alternatives)
* Shifting responsibility onto passengers (e.g. “workarounds” for barriers)