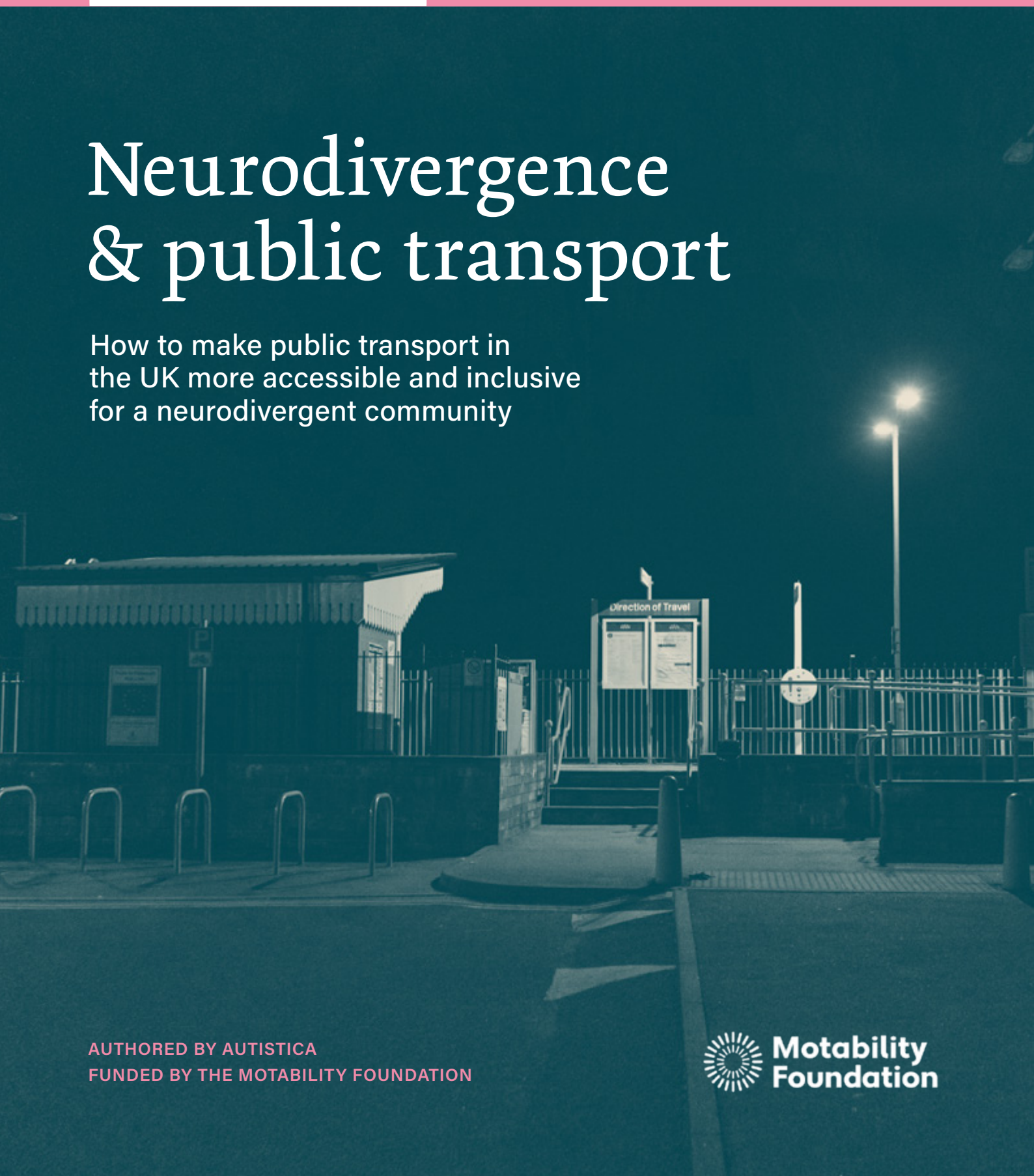
MAY 2025

autistica

# Neurodivergence & public transport

How to make public transport in the UK more accessible and inclusive for a neurodivergent community




AUTHORED BY AUTISTICA
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Motability Foundation

autistica

Autistica is the UK's leading autism research and campaigning charity. Our mission is to create breakthroughs that enable all autistic people to live happier, healthier and longer lives. We do this through research, campaigning, and working with autistic people to make more of a difference.

Our 2030 Goals are based on the priorities of the autistic community to ensure that autistic adults and children have better access to medical care, therapeutic services, mental health, and the lifelong support they deserve, as well as tackling barriers to education, employment, and shared spaces.

**BY 2030, PUBLIC SPACES WILL BE MORE ACCESSIBLE TO NEURODIVERGENT PEOPLE**

Many neurodivergent people are overwhelmed by, or excluded from public spaces. Navigating the world can cause huge sensory and social demands. Creating spaces that are more inclusive of neurodivergence is complex but necessary. Often, small changes can make a huge difference to the lives of thousands of neurodivergent people and their families. By 2030, we aim for public spaces to be adapted to be more inclusive for neurodivergent people, and that new developments are designed with neurodiversity in mind. You can read more about our Accessible Spaces Goal here.


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We ran this research in partnership with neurodivergent people. We thank our community advisory group and all community members who took part in the project research activities.

This research was funded and supported by the Motability Foundation. We extend a warm thanks to the Motability Foundation for its support throughout this project.

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# Contents

# Foreword

At Autistica, one of our ambitious 2030 Goals is that public spaces will be more accessible for neuro-divergent people. A vital component of this is public transport.

Accessible public transport is a means to participate in all that life has to offer. We can attend social activities to boost our wellbeing, access essential services like visiting our GP, and seek and maintain employment. It's our ticket to freedom, if you'll excuse the pun.

Currently, too many neurodivergent people find public transport inaccessible for numerous reasons. For example, someone's sensory differences might mean stations and vehicles are inhospitable environments, or the anxiety of navigating unpredictable, inconsistent services may leave neurodivergent people feeling excluded.

Inaccessible public transport means many neurodivergent people limit their travel to essential journeys, missing out on the things they most enjoy. Some avoid public transport entirely, affecting their quality of life and drastically reducing their career options or access to medical care. Many neurodivergent people do not regularly drive, so they may become reliant on others to take them to the places they need to go, limiting their freedom and independence.

But it doesn't have to be like this.

Making public transport more accessible doesn't just improve the quality of life of the one in seven people who are neurodivergent: it benefits us all. When public transport is neuroinclusive, it means more consistent and predictable services and clear communication, especially during periods of disruption.

Most importantly though, it promotes a culture of understanding and acceptance.

Collaborating with the neurodivergent community is at the heart of our work at Autistica. This research is no exception. Thank you to every neurodivergent person or family member who got involved in this research. Community involvement ensures our work is meaningful to neurodivergent people and drives the changes they want to see for happier, healthier and longer lives.

That's why I'm confident that implementing the recommendations within this report will support more neurodivergent people to travel by public transport. It will help more people feel confident in making sustainable travel their first choice and, in turn, they'll enjoy the opportunities that come with freedom of movement.

Thank you to the Motability Foundation for funding this research, which has the potential to transform countless lives. Finally, a thank you to you, the reader, for sharing our vision of a more inclusive and equitable world. Together, we can drive meaningful change and open a world of opportunities, not just for neurodivergent people, but for everyone who will benefit from inclusive public transport.

**DR JAMES CUSACK**
AUTISTICA
CEO

# Funder statement

We are proud to have grant-funded this important piece of research by Autistica on the transport challenges faced by autistic and neurodivergent people.

At the Motability Foundation, we fund, support, research, and innovate to help disabled people make the journeys they choose.

This research highlights key barriers to choosing public transport for a journey, including uncertainty, inconsistency, and overwhelming sensory environments and presents recommendations for change. User research like this is essential in shaping a more inclusive and accessible future for public transport.

**CHELSEA FLEMING**
MOTABILITY
INNOVATION MANAGER

# Using this report

This section provides an overview of how to get the most out of this report.

## DEFINITIONS

We have created a list of definitions on page 62. The language around neurodivergence is evolving quickly, so we'd recommend referring to our definitions. Defined terms are underlined in green throughout this report, and link to the definitions page.

## IF YOU HAVE LIMITED TIME

As much as you would like to read a report with dozens of pages about neuroinclusive transport, you might not have time.

If you're short on time, we recommend focusing on the following sections:

**Executive summary** PAGE 4
A summary of the research and key findings.

**Recommendations: at a glance** PAGE 8
Here, we list our recommendations.

**Recommendations: in detail** PAGE 10
This section explains why these recommendations matter and who we think could implement them.

## IF YOU WANT MORE DETAIL

Throughout the rest of the report, we delve into the details of our research.

**Neurodivergence and public transport** PAGE 21
This section explains why we are doing this work, acknowledging existing work in neuroinclusive public transport and setting out the aims of our research.

**Methodology** PAGE 24
A summary of how we carried out the research within this report and how we involved neurodivergent community members.

**Defining public transport** PAGE 26
We explain our Delphi study and how this helped us establish the neurodivergent community's definition of public transport and which types of transport they include.

**Establishing the challenges** PAGE 32
This section explores our community consultation interviews, identifying the barriers neurodivergent people face when using public transport.

**Prioritising the challenges** PAGE 48
We ran a survey with over 600 neurodivergent and neurotypical people to establish the biggest challenges that neurodivergent people experience using public transport.

**Identifying the solutions** PAGE 56
This section explains how our series of workshops identified ways to overcome the challenges highlighted in the previous section.

**Final thoughts** PAGE 60
A summary of the key findings and opportunities for future research.

# Executive Summary

Public transport provides access to essential components of life such as education, employment and healthcare. It connects us with others through social and community activities and helps us "get away from it all" on holiday. However, for the estimated one in seven people who are neurodivergent, public transport can be totally inaccessible.

## WHY IT MATTERS

When people experience barriers to travel, it means barriers to living life at its fullest. Many neurodivergent people who travel by public transport experience sensory-overwhelming environments, inconsistent and unclear communication, and stigmatising behaviour from staff and passengers. The additional demands of navigating these barriers mean they arrive at their destination unable to fully participate in their plans. Because of this, some limit their travel to essential journeys, and others avoid public transport entirely.

Neurodivergent people have a right to accessible and inclusive public transport. For this to happen, we need to see change. And neurodivergent voices need to be central to this change.

This is why we created *Neurodivergence and Public Transport: how to make public transport more accessible for a neurodivergent community.* We heard from over 550 neurodivergent people through interviews, focus groups, and a nationwide public survey to hear what mattered most to them, and the changes they would like to see.

## THE BARRIERS

Neurodivergent people told us the major barriers they face, each shaped by their unique personal experiences. The four major barriers were categorised as:

— design and physical infrastructure of vehicles and buildings
— information and communication factors
— inconsistency, uncertainty and unpredictability, and
— behaviour and neurodiversity knowledge of others.

Through community consultants and a public survey, we heard the personal costs of inaccessible travel. These included not travelling when and how how they wanted, arriving at their destination not able to fully participate, and loss of autonomy and independence.

One major issue identified throughout this report is the inconsistency in implementing neuroinclusive practices across various transport modes and regions. This lack of uniformity exacerbates difficulties for neurodivergent people, highlighting the need for standardised procedures and regulated cohesive service delivery.

This research also helped us identify differences between neurodivergent and neurotypical people's transport use. Compared to neurotypical people, neurodivergent people were:

— less likely to drive their own vehicle, indicating the importance of accessible public transport
— less likely to use public transport to travel to work or leisure activities
— more likely to use transport for healthcare, and
— less likely to regularly use trains, or aeroplanes.

**Ultimately, we found that public transport is a necessity for many neurodivergent people. However, the effort and energy to navigate the barriers they experience means many neurodivergent people limit their public transport use only to meet their essential needs.**

This report contains 11 crucial recommendations that span across five areas for change:

— Driving change through collaboration and research
— Integrate and simplify
— Maximising digital technology
— Understanding neurodivergence
— Less crowded, more support

These recommendations provide the roadmap for neuroinclusive transport. However, making them a reality requires collaboration between central and local government, regulatory and standards bodies, transport operators, researchers and developers, and neurodivergent experts by experience. Together, we can create a real, tangible difference and make public transport more accessible for everyone.

AUTISTICA



“

I’d love to be able to use public transport because it’s a topic I enjoy! Right now, I find it too crowded, too unpredictable and too confusing.

AN AUTISTIC ADULT

# Recommendations for inclusive public transport: AT A GLANCE

One in seven people are neuro-divergent. By working together and implementing these recommendations, public transport can be more accessible for neurodivergent people.

**Neuroinclusive public transport will help support more people to choose public transport regularly and enable them to travel with confidence.**

During this project we completed five research activities: reviewing existing knowledge, definition setting, community interviews, a public survey, and community focus groups. Working in collaboration with the neurodivergent community, we built upon these research activities to develop 11 recommendations for neuro-inclusive public transport, grouped into five areas for change.

Each of the recommendations should be implemented in collaboration with the neurodivergent community.

## Driving change through collaboration and research

1. Establish a national steering committee for neuroinclusion in transport

> **Who can make this change:** *Department for Transport and other government bodies, new Passenger Watchdog, industry regulation and standards bodies.*

2. Work with community members to improve vehicle and station designs for sensory sensitivities

> **Who can make this change:** *Transport manufacturers and designers, service operators.*

3. Invest in research to develop, test, and produce evidence of effective solutions

> **Who can make this change:** *Research funding bodies; Department for Science, Innovation, and Technology; Department for Transport.*

## Integrate and simplify

4. Standardise signage and information across public transport

> **Who can make this change:** *The Department for Transport and other government bodies; the Office of Rail and Road; new Passenger Watchdog.*

5. Improve integration of services across transport systems and modes

> **Who can make this change:** *Department for Transport and other government bodies; service providers including the proposed new Great British Railways and devolved transport providers.*

## Maximising digital technology

6. Invest in digital infrastructure across the transport networks

> **Who can make this change:** *Transport service providers, including the proposed new Great British Railways and devolved transport providers; Transport manufacturers and designers; Department for Transport; and other government bodies.*

7. Enhance existing online travel information

> **Who can make this change:** *Transport service providers and others involved in the provision of information. For example, the proposed new Great British Railways and devolved transport providers, transport app developers, the Department for Transport and other government bodies.*

8. Promote and encourage sharing of transport and travel tips and hints on online community platforms

> **Who can make this change:** *Service providers and others involved in providing information, including the proposed new Great British Railways, devolved transport providers, and app developers.*

## Understanding neurodivergence

9. Invest in evidence-backed neurodiversity training for transport service staff

> **Who can make this change:** *Research funding bodies, transport service providers, including the proposed new Great British Railways and devolved transport providers.*

10. Build upon existing public campaigns to promote awareness, acceptance and neuroinclusive behaviour

> **Who can make this change:** *Department for Transport and other government bodies, service providers, including the proposed new Great British Railways and other devolved providers.*

## Less crowded, more support

11. Address overcrowding and improve staff support on public transport

> **Who can make this change:** *The Department for Transport and other government bodies.*

# Recommendations for inclusive public transport: IN DETAIL

## Driving change through collaboration and research

To make public transport in the UK more accessible for neurodivergent people, we need a cohesive strategy and leadership. Much of the existing research into achieving this has focused on identifying the problem. Now, we need to invest in evidence-backed solutions. While some neuroinclusion initiatives exist, these typically occur independently of each other and without the necessary evaluation to build an evidence base. Through research and collaboration with the neurodivergent community, the transport industry can create a consistent, integrated, and inclusive public transport network in the UK.

### 1. ESTABLISH A NATIONAL STEERING COMMITTEE FOR NEUROINCLUSION IN TRANSPORT

**Who can make this change:** *Department for Transport and other government bodies, proposed new Passenger Watchdog, industry regulation and standards bodies.*

To make public transport inclusive for all neurodivergent people, we need systemic change with commitment and direction from industry leaders. To drive this change, a National Steering Committee for Neuroinclusion in Transport is needed. Their role would be to ensure the consistent implementation of neuroinclusive practices across the UK transport network, involving key stakeholders to provide strategic oversight, develop policies, and engage with the community. The success of this committee will involve the implementation of comprehensive neurodiversity training programmes, a detailed action plan, and a robust communication strategy. The committee will be pivotal in enhancing accessibility and inclusivity for neurodivergent people.

The steering group should include Department for Transport, the proposed new Passenger Watchdog, industry regulation and standards bodies, neurodivergent individuals, user-led advocacy groups (e.g., Transport for All, DPTAC), transport providers, accessibility experts, and design specialists.

The committee should:

— be formed with clear terms of reference and objectives
— secure funding from government bodies and research institutions to ensure ongoing support of committee activities
— identify priorities and areas of focus with key stakeholders, to inform short-term and long-term goals with measurable impact, and
— establish a communication strategy to raise awareness and promote the committee's work with the public and relevant industry sectors.

To achieve the goal of neuroinclusive transport, the success of the committee needs to be measurable. Defined metrics and reporting mechanisms should be established to track progress and impact of neuroinclusive initiatives, and ensure transparency and accountability.

A detailed framework for implementation of the Steering Committee can be found in the appendix (page 70).

### 2. WORK WITH COMMUNITY MEMBERS TO IMPROVE VEHICLE AND STATION DESIGNS FOR SENSORY SENSITIVITIES

**Who can make this change:** *Transport manufacturers and designers, service operators.*

Nobody likes the sound of a train screeching on the tracks. But if you are neurodivergent and have sensory differences, the sensory overload of public transport can be a significant barrier to travel. Sensory and information processing differences mean that loud, busy, and bright spaces can be overwhelming for neurodivergent people. This can cause discomfort, anxiety and distress, which could result in a meltdown or shutdown.

We recommend that manufacturers and designers work with community members to make vehicles and stations more inclusive of neurodivergence. This will provide inclusive choices for transport operators when purchasing vehicles or planning transition zones.

Areas of design to consider:

— Improving vehicle designs to consider sensory needs, thinking about noise, lighting, and haptic aspects such as vibration and thermal comfort.
— Improving layouts, such as seating arrangements and zoning to create low sensory areas and dimmed lighting.
— Adapting transition zone spaces, such as waiting areas, ticket barriers and boarding areas to be more inclusive of neurodivergence.

Transport manufacturers, designers and operators should implement existing neuroinclusive design guidance. For example:

— House of Lords, Science and Technology Committee guidance on the effects of artificial light and noise on public health.
— The British Standards Institution's PAS 6463 guidance, which helps businesses create spaces that support neurodiverse needs.

### 3. INVESTING IN RESEARCH TO DEVELOP, TEST AND PRODUCE EVIDENCE OF EFFECTIVE SOLUTIONS

**Who can make this change:** *Research funding bodies; Department for Science, Innovation, and Technology; Department for Transport.*

We need evidence-backed solutions that make public transport more neuroinclusive. Much of the existing literature and knowledge about neurodivergent people's use of public transport focuses on understanding the barriers and challenges. There is little research that identifies, develops, and tests solutions. We need to transition from defining and mapping the problem to solving it.

We recommend that:

— research funding bodies invest in research activities that develop and test solutions to make public transport more neuroinclusive, and
— research institutions build upon existing knowledge to address the identified barriers and challenges.

This research should be co-developed with neurodivergent community members, who are the experts on what works and does not work for them. It should also involve service operators who would be responsible for implementing these solutions.

## Integrate and simplify

Neurodivergent people told us consistency and cohesiveness are key factors of neuroinclusive transport services. Public transport will always have the potential for unexpected delays, cancellations, and disruptions. However, aspects of public transport travel can be more predictable.

For many neurodivergent people, consistency helps with managing anxiety, information processing and decision making. Transport providers can reduce the uncertainty and unpredictability of public transport travel by standardising services and information. This will lead to neurodivergent people having more energy for the activities that public transport can help them access, rather than limiting or avoiding travel due to the stress and anxiety of navigating a confusing, inconsistent system.

### 4. STANDARDISED SIGNAGE AND INFORMATION ACROSS PUBLIC TRANSPORT

**Who can make this change:** *The Department for Transport and other government bodies; the Office of Rail and Road; new Passenger Watchdog.*

Many passengers need to make quick decisions when using transport. Inconsistent signage can make public transport confusing and less accessible for some neurodivergent people, especially when switching between modes of transport. Standardising signage and clear, concise information at points of decision can help passengers quickly and reliably get the information they need. Clear, consistent signage is especially important for neurodivergent passengers with differences in reading styles.

We recommended establishing a UK-wide project to review wayfinding signage and information across the UK transport system and develop a consistent visual identity in compliance with the Equality Act 2010. This review could support transport operators to collaborate and build upon pre-existing best-practice guidelines, like Transport for London's Design standards.

Other suggestions to improve information provision include:

— providing clear in-vehicle information about exit and entrance points, such as the side of the carriage to disembark
— providing information in different formats, such as over the tannoy, in writing and with imagery, and
— consistency in availability of real-time information.

This solution should involve an in-depth consultation with transport and terminus operators, designers, industry regulation and standards bodies, the neurodivergent community and user-led advocacy groups, like Transport for All.

Industry regulators, such as the Office of Rail and Road and/or the new Passenger Watchdog, should independently evaluate and mandate the standardisation rules.

This work package could be incorporated into the Department for Transport's call for ideas for the Integrated National Transport Strategy to ensure a cohesive and consistent approach across the transport network.

### 5. IMPROVED INTEGRATION OF SERVICES ACROSS TRANSPORT SYSTEMS AND MODES

**Who can make this change:** *Department for Transport and other government bodies; service providers including the proposed new Great British Railways and devolved transport providers.*

Because public transport services in the UK are privatised, many operators can run the same type of transport service. Purchasing a train ticket, validating the ticket, and finding your way onto the vehicle can differ regionally and nationally. These challenges also occur when using multiple forms of transport for one journey. For example, buying a ticket for a train is a totally different experience from buying a ticket for a hovercraft.

Transport providers should seek opportunities to simplify travel whenever possible. A more unified and predictable transport system would improve accessibility for neurodivergent passengers. Standardising ticket purchasing, validation processes, and complaints procedures across different transport modes will address the inconsistency currently experienced by neurodivergent passengers, ensuring a seamless and predictable travel experience.

This would be especially beneficial for neurodivergent individuals who experience challenges with unpredictability and/or executive function.

Examples of improved integration could include:

— complete journey ticketing, integrating different modes of transport
— standardised ticket purchasing and validation process, and
— consistent complaints procedure.

This approach could be included in the call for ideas for the Department for Transport's Integrated National Transport Strategy.

## Maximising digital technology

Digital technology is already helping make transport more accessible. But there's still room for improvement. Solutions that could support neurodivergent people to travel can become a barrier when they lack accurate information, operating data infrastructure or connectivity. By maximising digital technology and infrastructure, this addresses several barriers to public transport use. Consistent, accurate information and certainty of access to digital tickets and credentials can reduce anxiety, making transport more accessible.

### 6. INVESTING IN DIGITAL INFRASTRUCTURE ACROSS THE TRANSPORT NETWORKS

**Who can make this change:** *Transport service providers, including the proposed new Great British Railways and devolved transport providers; Transport manufacturers and designers; Department for Transport; and other government bodies.*

Uncertainty and inconsistency can cause significant distress for neurodivergent people. However, this can be avoided with clear, accessible online information. To achieve this, passengers require consistent access to reliable, free Wi-fi for essential information and support, such as accessing real-time travel updates. This would reduce someone's fear of being unable to access their disabled pass, ticket booking or seat researvation when needed.

Investing in digital infrastructure at transition zones and onboard vehicles can help better communicate essential travel information, making transport more accessible for all.

Examples of what investing in digital infrastructure could include:

— free Wi-Fi available at transition zones
— reliable Wi-Fi while on vehicles
— real-time digital screens at transition zones, including bus stops, and
— device charging points at stations and on vehicles.

These solutions would also support transport staff to support neurodivergent passengers as they can consistently access travel information, updates and ticket bookings.

### 7. ENHANCE EXISTING ONLINE TRAVEL INFORMATION

**Who can make this change:** *Transport service providers and others involved in the provision of information. For example, the proposed new Great British Railways and devolved transport providers, transport app developers, the Department for Transport and other government bodies.*

Online information can support neurodivergent passengers before and during travel. There is huge variety across different transport services and regions, such as how to navigate the spaces or buy a valid ticket. This unfamiliarity and inconsistency can cause anxiety and distress for neurodivergent passengers.

To counteract this, some operators provide visual support on their websites, including video walkthroughs of ports and stations. Passengers can orientate themselves with these aids before travelling. However, this is not consistently available. As a result, this may limit the choices of transport someone has available to them.

Accurate and integrated information across the whole journey reduces the effort needed to plan and adjust journeys during disruptions. However, many of our community members reported how insufficient or inaccurate information on these platforms created uncertainty. They also discussed the challenges of having to access information across multiple platforms.

We recommend that online travel information platforms, such as websites and apps include:

— reliable, up-to-date information about a whole journey, integrated across different service operators
— personalised updates on alternative routes if a service is cancelled or delayed
— first-person perspective walkthroughs of transition zones, to help people find their way through busy and unknown environments
— clearer information on how and where to purchase the correct ticket, and
— synchronisation across different platforms, such as CityMapper, Google Maps and TfL to provide consistent information.

Information providers, including transport operators, should promote accessibility support information prominently and clearly, so that passengers know that it is available.

The Department for Transport's forthcoming Integrated National Transport Strategy should support the coordination of data from different services at a national level to enable full and consistent coverage.

## 8. PROMOTE SHARING OF TRAVEL TIPS AND HINTS ON ONLINE COMMUNITY PLATFORMS

**Who can make this change:** *Service providers and others involved in providing information, including the proposed new Great British Railways, devolved transport providers, and app developers.*

Many neurodivergent people have developed their own ways to navigate inaccessible aspects of public transport. Neurodivergent people told us finding easy ways to share their tips and suggestions with each other could help make public transport more accessible. Tip sharing within the community fills an important gap before longer-term accessibility plans are implemented.

The Autistica Tips Hub is an accessible platform that could facilitate this. The Tips Hub is a free app that offers reliable community tips and evidence-backed resources for the autistic and neurodivergent community, their families and professionals who work with them.

We welcome the opportunity to collaborate with service providers to co-create tailored content and resources. These resources can empower neurodivergent passengers to travel with greater ease and confidence. This could include:

— information about pre-existing travel support
— adjustments available for passengers with specific physical or sensory difficulties
— information in plain language or alternative formats, and
— tips and resources for professionals in the transport sector and service staff of transport providers.

Visit the Tips Hub webpage to find out more.

Transport operators should prominently promote these community tips and hints sharing platforms on their websites and throughout their service infrastructure.

## Understanding neurodivergence

Attitudes and behaviours from other users and transport service staff can negatively impact a person's journey. They also have the potential to create a positive experience. Often, the negative impact of these behaviours is unintentional. Addressing gaps in knowledge, tackling stereotypes and highlighting how small actions matter can help everyone understand one another better. Encouraging neuroinclusive behaviour in staff and passengers improves the travel experience for everyone.

## 9. INVEST IN EVIDENCE-BACKED NEURODIVERSITY TRAINING FOR TRANSPORT SERVICE STAFF

**Who can make this change:** *Research funding bodies, transport service providers, including the proposed new Great British Railways and devolved transport providers.*

Community members told us they would feel better able to use transport if more staff were equipped to support their individual needs. This could include:

— knowing how to support a neurodivergent person who may be overwhelmed or experiencing a meltdown, and
— recognising when a passenger needs more time to process information and respond.

Appropriate training can empower public-facing transport staff to support neurodivergent passengers. The training should establish awareness and provide staff with the knowledge and skills to appropriately support neurodivergent individuals in challenging situations. It should be evidence-backed and evaluated to demonstrate its effectiveness and eliminate possible harm. Currently, there is no evidence-backed customer-focused neurodiversity training for public transport service staff.

Therefore, we recommend that research funding bodies and transport service providers invest in developing gold-standard neurodiversity training for transport staff. To ensure training is impactful and harm-free, it should be:

— developed in partnership with neurodivergent people
— designed specifically for supporting public transport staff when working with neurodivergent passengers, and
— regularly evaluated to ensure it is effective in creating harm-free positive outcomes.

Neurodiversity-focused customer training for staff should meet these standards.

## 10. BUILD UPON EXISTING PUBLIC CAMPAIGNS TO PROMOTE AWARENESS, ACCEPTANCE AND NEUROINCLUSIVE BEHAVIOUR

**Who can make this change:** *Department for Transport and other government bodies, service providers, including the proposed new Great British Railways and other devolved providers.*

A lack of awareness of neurodivergent people's invisible needs means many neurodivergent people experience barriers to using public transport. Small actions can have a big impact on the experience of others. At their worst, they can lead to neurodivergent people feeling overwhelmed, uncomfortable, unsafe and unsupported.

At their best, they create an environment where all passengers feel comfortable, welcome and safe.

We know the transport industry has already executed several successful public understanding campaigns, such as 'It's everyone's journey' and poster campaigns focused on reducing discriminatory behaviour towards staff. We recommend building on these to promote neurodiversity awareness and neuroinclusive behaviours. This could highlight the impact of small actions, such as keeping conversation low, using headphones, or observing priority seating or bookings.

We can achieve more together, so this campaign should be in collaboration with:

— neurodivergent people
— user-led advocacy groups
— transport service and terminus operators, and
— media representatives.

Increased neuroinclusive behaviours and greater acceptance of individual differences could have a positive effect on all passengers, not just the neurodivergent community.

## Less crowded, more support

Overcrowding and lack of support staff can lead to neurodivergent people feeling unsafe, uncertain or experiencing sensory overwhelm. Travelling during quieter times is not always an option. Addressing overcrowding and improving passenger support could help more neurodivergent people travel comfortably at a time that suits them.

### 11. ADDRESS OVERCROWDING AND IMPROVE STAFF SUPPORT ON PUBLIC TRANSPORT

**Who can make this change:** *The Department for Transport and other government bodies.*

Numerous neurodivergent people told us about difficult experiences dealing with overcrowding on public transport and the lack of staff support. To be more inclusive of neurodivergence, we recommend that government bodies invest in strategies to reduce overcrowding while ensuring adequate staff are available on site to support passengers. This may include:

— Investing in strategically located information stands at ports, stations and boarding areas, with staff available to assist people.
— Increasing staff on-site and within transition zones, such as checking-in zones, security gates and waiting areas to provide support and manage passenger flow.
— Increasing staff presence on vehicles to improve passenger support.

Strategies to address overcrowding and staff shortages should be developed in consultation with diverse groups of neurodivergent community members. To ensure risks for safety and accessibility are prioritised, these strategies should implement existing work by user-led groups such as Transport for All.

> “Peak is supposed to mean ‘best’, ‘optimum’, ‘apex’… in public transport, it means ‘busiest’, ‘loudest’, ‘most stressful’.

AN AUTISTIC ADULT WHO HAS AVOIDED USING PUBLIC TRANSPORT FOR OVER A DECADE

# Neurodiversity & public transport



An estimated

**1 in 7**

people are neurodivergent

Motability Foundation's report *The Transport Accessibility Gap* highlighted how transport accessibility is significantly linked with disabled people's access to healthcare, employment, education and other social activities. Although not all neurodivergent people consider themselves to be disabled, many of the neurodivergent conditions qualify as a disability due to the substantial impact on someone's daily life.

## NEURODIVERSITY & NEURODIVERGENCE

**Neurodiversity** refers to natural variability in how brains work. The term acknowledges the variety of ways people can experience and interact with the world or learn and process information. The neurodiversity movement is a social movement that aims to overcome the over-medicalisation of neurodivergent people. It supports a 'differences, not deficits' understanding of the different ways our brains work.

Neurodiversity is typically used in a broad, societal sense and reflects the broader spectrum of how all human brains can function.

**Neurodivergence** is an umbrella term for mind and brain differences that differ from societal definitions of 'normal.' It is estimated that one in seven people are neurodivergent. The interaction between neurodivergence and society's expectations is often disabling.[2–5] This means many neurodivergent people face barriers to participating in society, affecting their opportunities, independence and causing significant disadvantages.[4]

## PUBLIC SPACES & NEURODIVERGENCE

When people think of accessibility, they often think of physical accessibility, such as ramps and level access. However, accessibility also needs to consider invisible differences. As neurodivergent people experience the wold differently, they face barriers to public spaces that neurotypical people might not notice. Sensory differences, such as smell, visual, auditory and touch, can make public spaces uncomfortable and overwhelming. For many, the lack of communication options, or not using clear, simple language or visual cues, can make being in public and social settings inaccessible. It can lead to misunderstandings, overwhelm and anxiety.

Differences in executive function can also make everyday activities more effortful. The energy and effort needed to navigate a world that is only designed to work with how some people think and feel is exhausting. This leads to fewer neurodivergent people accessing public spaces in a way they need and want to.

Our 2030 Goals were developed from community priorities, including our Goal that by 2030, public spaces will be more accessible for neurodivergent people.

## PUBLIC TRANSPORT & NEURODIVERGENCE

Public transport is often the gateway to many everyday activities such as employment, education, healthcare, social and religious activities. It can also be how people access essential daily needs, such as groceries. However, public transport can be a barrier to neurodivergent people accessing these activities and services.

Busy, crowded stations and vehicles, absent or unclear information, and emphasis on verbal communication can make public transport inaccessible. When considering that neurodivergent people are less likely to regularly drive privately owned cars compared to neurotypical people, accessible public transport is even more important[5].

## WHAT WE ALREADY KNOW

Previous research has helped establish some of the barriers and challenges. These barriers include:[6–16]

- crowding
- high sensory demands, including noise, lighting, smell and touch
- unexpected changes, such as delays, cancellations and changes to services
- attitudes and knowledge of staff members on transport regarding neurodivergence
- attitudes and behaviours of others using transport
- lack of up-to-date information about services
- lack of options for accessing information
- lack of communication options
- inconsistency in how to use services, including buying tickets
- feelings of safety
- financial cost of travel
- difficulties in planning and executing journeys, and
- intersectionality of other health conditions, such as physical disabilities.

Some of the facilitators to address these challenges may include:[6/7/10/12/14/15]

- quiet zones in transition zones, such as stations and ports, and on services
- a variety of seating options on vehicles, including single seats
- live digital information
- information available before travel about how to use the services
- improved signage, and
- easier ticket buying, across the whole journey.

Research also indicates that many people rely on support from others. This may be travelling with them or supporting them to plan the journey.[6/9/10/15] It could mean travelling at different times, on different routes, or types of transport.[6/8/10] For others, they may use private vehicles, including asking others to drive them.[15] However, neurodivergent people want autonomy and independence.

While some research has looked at neurodivergence and public transport, this is very limited. Existing research has primarily focused on identifying the barriers and potential facilitators. There is little research that develops and tests solutions.

Most of the existing research has been in the US, India, New Zealand and Australia. Very little has focused on the UK. Given the considerable international differences in who funds, operates and regulates public transport, how it is designed, and the extent to which neuroinclusion has been considered, there is a need to focus on public transport in the UK.

## NEURODIVERSITY IN PUBLIC TRANSPORT IN THE UK

Service operators, researchers, designers, local and national governments, and industry bodies have already started to consider neurodivergence in accessible public transport. Examples include:

- Network Rail's autism-friendly guide to travelling by train
- Altro Ltd produce flooring that supports acoustic and thermal insulation of zero-emission vehicles, including buses, and
- Nexus, the Passenger Transport Executive for the Joint Transport Committee in the North East lead on neuroinclusion across rail, bus, ferry and metro services in the region.

Even globally, recognised transport providers are starting to implement positive changes. For example, Emirates has recently become the world's first Autism Certified Airline.

While this work is making progress, it is not consistently implemented. We need further development to ensure neuroinclusive public transport initiatives exist across all transport modes and services in the UK. For example:

**Current frameworks** such as the Persons with Disabilities and Reduced Mobility TSI and National Technical Specification Notices provide a solid foundation for inclusivity, but they focus primarily on physical accessibility. There is a need to expand these frameworks to address neurodiversity, including sensory and cognitive needs.

**Legislative and policy support** set out in the Transport Committee's report 'Access denied: rights versus reality in disabled people's access to transport' highlights the systemic accessibility failings across transport modes. While it addresses the needs of disabled individuals, it does not explicitly focus on neurodivergence. Transport accessibility legislation should be reviewed to include specific standards for neurodivergent people.

**User and advocacy groups, and expert committees** such as the Disabled Persons Transport Advisory Committee and Transport for All are independent groups that advocate for and advise on the needs of disabled people. Needs across different user groups can vary and are sometimes conflicting. Many disabled people have more than one condition, so have unique support needs. These groups should be sufficiently resourced to ensure that the needs of neurodivergent passengers are considered, while recognising the intersectionality of all user needs.

**Research** is crucial to understanding the challenges that neurodivergent people face when using public transport and how to make it more inclusive. Previous research has identified the challenges. Now, research should focus on developing, testing and implementing effective, harm-free change that empowers neurodivergent passengers.

**Investment in infrastructure improvements** can create more sensory-friendly spaces. White papers that focus on neuroinclusive design, such as 'How can we design places and spaces with everyone in mind?', recently published by WSP highlight examples of best practice. Existing design standards, such as the British Standards Institution's PAS 6463 guidance, should be integrated into existing frameworks to ensure a cohesive and consistent approach to neuroinclusivity.

**Regional inclusion strategies** commit to and build neuroinclusive transport across their regions, such as initiatives by Transport for London, or in the North East of England. But for real change, these initiatives should be nationwide. To ensure a cohesive and consistent approach, knowledge and strategies should be shared across the UK.

## AIMS FOR THIS PROJECT

While change is happening in places, the prioritisation of neuroinclusion, and its subsequent accessibility and implementation, varies greatly across the UK. This demonstrates the need for knowledge-sharing and a coherent, systemic strategy across the UK public transport network.

We also need to understand more about the challenges specific to the UK. This research aimed to establish those needs and develop practical recommendations to drive change.

# Methodology

This research was co-designed with an advisory group of four neurodivergent community members. The advisory group collaborated with us at every stage of the research and while developing the recommendations.. This project focused only on public transport in the UK. Our research questions were:

## 1. HOW ARE NEURODIVERGENT PEOPLE USING PUBLIC TRANSPORT, AND WHAT FOR?

Community members told us that inaccessible public transport disadvantages neurodivergent people. It makes it difficult for them to access everyday activities such as education, employment, healthcare and recreational activities. However, there is little measurable data to demonstrate the extent of this disadvantage. We wanted to know how often neurodivergent people use public transport, what kinds of transport they use, and what they use it for. We also considered whether this differed from neurotypical people.

## 2. WHAT ARE THE BARRIERS AND CHALLENGES FOR NEURODIVERGENT PEOPLE WHEN USING PUBLIC TRANSPORT?

For many neurodivergent people, using public transport can be a challenge. There are many possible reasons for this, such as sensory demands, lack of communication options, or inconsistent procedures for using services. However, little research investigates what these barriers are and where people experience them. Of the limited existing research, most has not looked at travel in the UK. We needed to understand the challenges and barriers, so that we could identify and suggest possible solutions. We also wanted to find out which of these challenges were the biggest barriers for the community.

## 3. WHAT ARE THE FACILITATORS TO MAKING PUBLIC TRANSPORT MORE ACCESSIBLE FOR THE NEURODIVERGENT COMMUNITY?

At Autistica, one of our ambitious Goals is that, by 2030, public spaces will be more accessible for neurodivergent people. To identify the solutions and recommendations that will help us deliver this Goal, we need to understand the facilitators that make public spaces more accessible.

We wanted to know what behaviours, design features, or supports make public transport journeys easier and more comfortable. We also wanted to learn about when these facilitators helped, and which had the largest positive impact.

**To answer these questions, we undertook five research activities. These activities were:**

1. Knowledge review: a review of existing research and knowledge about neurodivergence and public transport.
2. Defining parameters: establishing what public transport is and is not, using consensus decision-making methods with 18 community members.
3. Establishing the challenges: mapping the barriers and challenges to using transport, through consultation with 20 community members.
4. Prioritising the challenges: an online survey completed by 652 members of the public, of whom 81% were neurodivergent.
5. Identifying the solutions: four online workshops with 15 neurodivergent community members, addressing four priority areas.

From these activities, we developed 11 recommendations, shaped and refined with our community experts.

This project aimed to set out recommendations for policymakers, local and central governing bodies, public transport operators, regulation and standards bodies, and research funders. These recommendations identify the actions needed to make public transport more accessible and inclusive, reflecting their priorities.

### WHAT WE MEAN BY THE NEURODIVERGENT COMMUNITY

When we talk about the neurodivergent community, or community members, we mean neurodivergent people and parents or carers of neurodivegent people. Neurodivergent people may have a formal diagnosis of one or more types of neurodivergence; be awaiting or considering a formal assessment; or be content to self-identify without seeking a formal assessment. All neurodivergent people could participate in this project regardless of their diagnostic status.

# Defining Public Transport



Before beginning our investigations, we needed to decide what we meant by 'public transport.'

Establishing a definition of public transport would:

- provide us with a current public understanding of what public transport is in the UK
- capture what neurodivergent people consider public transport, and
- ensure that our recommendations are targeted at the types of transport most relevant to neurodivergent people.

## THE TRADITIONAL DEFINITION OF PUBLIC TRANSPORT

Historically, public transport was a state-run service[17]. Its name came from being 'publicly operated' transport.

The traditional definition of public transport consisted of three components[18–21]:

- a system of transport operated by a central organisation, with set routes, set entry and exit points, and a regular timetable
- it is available for use by the public; and
- charges a fee for use.

Typically, this would be land-based transportation, such as buses, trains and trams[19].

## WHY THIS DEFINITION ISN'T FIT FOR PURPOSE

The privatisation of these services has changed our understanding of public transport. The meaning of public transport has shifted from being publicly operated to being 'publicly used' transport. Our understanding of public transport has expanded to include services operated by private companies, including transport via water and air.

In addition, services may not run to a set schedule or have fixed points where you enter and exit the transport. For example, digital technology development means that new options, such as 'on-demand' app-based services and micromobility (short distance on-demand solutions such as bicycles and electric scooters), are publicly available that do not meet the traditional definition of public transport.[21/22]

We also recognise the use of community accessibility services by many members of the neurodivergent community. Door-to-door services provide valuable support to the neurodivergent community. For example, Dial-a-Ride, or private taxi services taking neurodivergent children to school. While not typically considered public transport, these services still need inclusive considerations to support their passengers' needs.

Because of these shifts in how public transport is operated, the lack of a clear definition, and the individual needs of the neurodivergent community, we needed to establish a definition of public transport with community members.

## HOW WE DEVELOPED A COMMUNITY DEFINITION OF PUBLIC TRANSPORT

We used the Delphi method to reach a community definition of public transport. This is a structured way to reach a consensus, or majority opinion, about a topic with differing views.[23] The Delphi method helps us find out what *most* people would define as public transport and what modes of transport they would include in this definition.

Delphi surveys ask a panel of experts for opinions on a topic, review their responses, and share responses in follow-up rounds. When the panel completes further rounds of surveys on the topic, they can revise their answers based on the group responses. Once a threshold of similar answers is reached a consensus is formed.

By reviewing existing Delphi surveys, the research team decided this study would have two rounds of surveys and needs 75% agreement to reach a consensus.

## THE EXPERT PANEL

In August 2024, we recruited 18 neurodivergent community members to complete the survey as our expert panel. Our community experts were neurodivergent adults, parents or carers of a neurodivergent child or person, or both. They had to have either used or considered using public transport in the past and be based in the UK.

**7** people indicated they were neurodivergent

**2** were a parent or carer of a neurodivergent child or adult

**9** were both neurodivergent and a parent or carer

**There was a range of neurodivergent conditions, including autism, ADHD, dyslexia, dyspraxia, dyscalculia, dysgraphia, and tic condition.**

**26–66 yrs**
age range

**Of the parents and carers, two were carers for adults (18 years+). The remainder were parents of children aged 5 to 17 years.**

### THE FIRST ROUND

The panel were sent a link to the first online survey. They had seven days to complete this round. The panel completed the task alone and did not know who else was in the group. In the first round, the group had two tasks:

1. Describe in their own words what public transport is and is not.
2. Indicate which types of transport they thought were public transport.

For the second task, the panel were given a list of 30 different types of transport, each with a description and photo. This list was created with the community advisory group from existing transport literature. It included types of transport or travel that may not typically be considered public transport, such as walking or car hire. They were asked to answer 'yes' if they thought something was public transport, or 'no' if not. There was also an 'unsure' response option. Sixteen panel members completed the first round of the Delphi survey.

After the first round, the research team reviewed the answers and identified all the different ways the panel defined public transport. These were matched to a list created from our literature search. When the panel used a descriptor that was not already on our list, we created a new one. The final list of descriptors was agreed upon by two members of the research team.

The final list of 13 descriptors [APPENDIX 1] was used in the second round of the Delphi survey. For the second task, percentages were calculated regarding how many of the panel answered 'yes', 'no' or 'unsure.' Any type of transport where 75% or more of the group answered 'yes' was considered to have reached consensus as a form of public transport.

The consensus from the first round included 11 types of public transport: airplane or aeroplane, national coach, Eurostar, ferry, passenger hovercraft, light rail or monorail, local bus, train, tram, tube, underground or metro, and waterbus.

Any types of transport where 75% or more answered 'no' were considered to have reached agreement that they were *not* public transport, so were removed from the list. This included bicycle or pedal bike, hire coach, hire car, horse-drawn carriage, and walking.

We also asked the panel if any types of transport were missing from the original list, but none were suggested. The remaining 13 types of transport that had not reached 75% were used in the second round of the Delphi survey.

### SECOND ROUND

The 16 people who responded to the first round were sent the link to the second round and were given seven days to complete the survey. In the second round, the group were asked to complete two tasks:

1. Indicate which statements were descriptors of public transport.
2. Indicate which forms of transport were public transport.

For the first task, the panel was asked to read each descriptor statement. They were then asked to answer 'yes' if they thought it was a descriptor of public transport, or 'no' if not. They could also respond 'unsure' if they were uncertain.

For the second task, we listed the remaining 13 types of transport from the previous round.

We also included details of how the group had responded in round one, sharing the percentages and numbers of people who answered 'yes', 'no' or 'unsure' to each type of transport. The panel were asked to indicate again whether they thought each of the types of transport was public transport or not, using the same response options as before.

Fourteen group members completed the second round.

For the first task, all descriptors where 75% or more of the group answered 'yes' were considered to have agreed consensus. Three descriptors reached this consensus:

— It was not privately owned by the user.
— It was shared with other people they may not know.
— It may charge a fare.

**FIGURE 1.** WHAT COUNTS AS PUBLIC TRANSPORT BASED ON COMMMUNITY CONCENSUS RESULTS

| Public Transport | Not Public Transport |
|---|---|
| Airplane or aeroplane | Bicycle or pedal bike |
| Local bus | Boat |
| Cable car | Hire coach |
| Personal rapid transport | Cruise ship |
| National coach service | Helicopter |
| Shuttle service | Hire bike |
| Eurostar | Hire car |
| Special community transport services | Horse-drawn carriage |
| Ferry | Motorcycle taxi |
| Train | Rickshaw and Pedicabs |
| Funicular railway | School bus or coach |
| Tram | Taxi (including Uber) |
| Passenger hovercraft | Shared taxi (including Uber) |
| Tube, underground or metro | Walking |
| Light rail or monorail | |
| Waterbus | |

For the second task, each type of transport was reviewed again to identify which types of transport had at least 75% of the group answering either ‘yes’ or ‘no’. A further five types of transport were included as types of public transport: cable car, funicular railway, personal rapid transport, shuttle service, and special community support services. One more type of transport was excluded as an example of public transport: cruise ships. Seven types of transport did not reach consensus after the two rounds of the survey.

## COMMUNITY DEFINITION OF PUBLIC TRANSPORT

After the two rounds of the Delphi survey, we were able to define the neurodivergent community definition of public transport. The community considered 16 types of transport to be public transport [FIG. 1].

> A transport service for which you (or someone) pay(s) a fare for that may be shared with people you do not know. It is a form of transport that is **not** privately owned by the user.

The outcomes from this definition-setting exercise shows how our understanding of public transport has shifted since the traditional definition.

The neurodivergent community definition focused on a paid-for form of transport shared with others. They considered aspects such as a fixed route, fixed schedule, or operated by a central organisation less important. Less emphasis on these aspects allowed for more flexible forms of transport to be considered public transport, such as special community transport services.

## NON-CONSENSUS RESULTS

Seven types of transport did not reach the 75% threshold. All but one of these reflect an on-demand nature. This included boat, helicopter, hire bike, motorcycle taxi, rickshaw or pedicycle, or taxi (including services such as Uber).

These on-demand options present an alternative means of travel to some of the neurodivergent community.

The non-consensus list also included a school bus or coach. Although these types of transport did not reach the threshold, many community members considered these services to be public transport.

While we have not included these transport types in our final definition, we recommend that these service types also review their practices.

# Establishing the challenges

We wanted to know more about the barriers and challenges neurodivergent people experience when using public transport, and which facilitators make transport more accessible. We ran a series of written and group interviews with public transport users based in the UK, to hear directly about their experiences. The community interviews gave us a comprehensive picture of their experiences, which helped us find factors that affect how inclusive a transport service is.

## WHO WE INTERVIEWED

**20** **neurodivergent community members with experience using public transport**

10 were neurodivergent

1 was a parent or carer of a neurodivergent person

9 were both neurodivergent and a parent or carer

7 parents/carers supported children (under 18 years old)

3 parents/carers supported adults

## WHAT WE ASKED

We invited community members to answer five questions in a group interview or provide written responses. We asked questions that were reviewed and shaped by the Community Advisory Group.

### WHAT WE ASKED THE COMMUNITY

1. Please tell us about your use of public transport.
2. Thinking about public transport journeys you have taken in the past; did you experience any challenges or difficulties? If so, please could you tell us what these were.
3. Do these challenges affect the choices you make to use public transport, and if so, how?
4. How can public transport providers make it easier for you to use their services?
5. Do you have anything else you would like to share about your experiences of using public transport that we have not asked about?

15 people completed a written interview

5 took part in group interviews online

Participants were aged 18–70 yrs

## ANALYSING THE RESPONSES

To look for patterns, we analysed the interviews using a method called Template Analysis,[24/25] with the following steps:

1. We developed an initial template, or codebook, based on the barriers and facilitators to public transport identified in our earlier literature review.
2. We read the interview transcripts and written responses to identify where the participants identified barriers and facilitators.
3. Where we had an existing code, we tagged the extract with that code. When the extract did not fit an existing code, the research team discussed and agreed on a new code to add to the codebook.
4. After analysing all the responses, we grouped the codes into themes. These themes would help us to understand the experiences of neurodivergent people when using public transport.

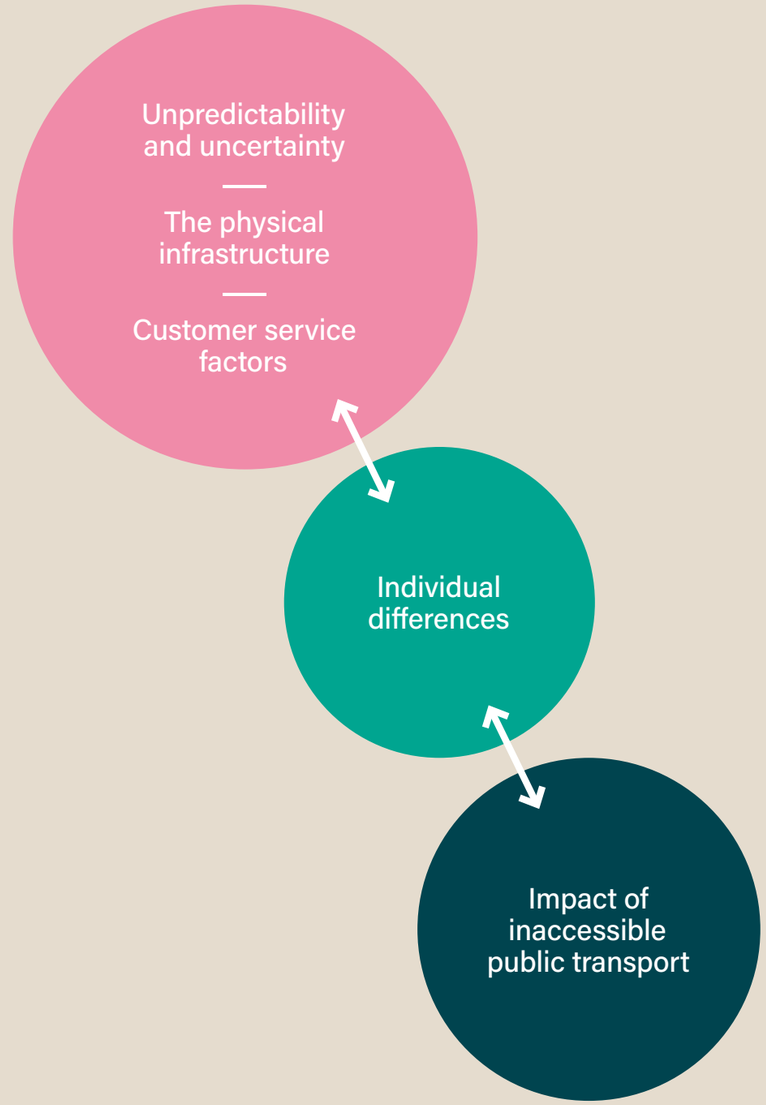
## WHAT WE FOUND

We found five themes that capture the experiences of the neurodivergent community using public transport [FIG. 2]:

— unpredictability and uncertainty
— physical infrastructure
— customer service factors
— individual differences
— impact of inaccessible public transport

The first three themes focus on the barriers and challenges that neurodivergent people experience when using public transport. The fourth theme identifies how individual differences affect how these barriers and challenges are experienced and addressed. The fifth theme explores the impact that inaccessible public transport has on the individual.

**FIGURE 2.** FIVE KEY THEMES AND THEIR RELATIONSHIP TO ONE ANOTHER



## Barrier one: unpredictability and uncertainty

Travelling by public transport has high levels of unpredictability, uncertainty and inconsistency, which can prompt or increase anxiety and distress for some neurodivergent people. The unpredictability of journeys prevents some neurodivergent people from using public transport altogether. A more unified and predictable transport system with clearer guidance could help neurodivergent people better navigate public transport and support neurodivergent people to travel by public transport more often.

> *I got on a bus without realising it was prepayment at a ticket machine that was the other side of the bus stop. I'd actually walked past the ticket machine, but to me, it wasn't obvious that it was a ticket machine.*
>
> *It was a black box. And as I got on the bus the bus driver said 'Ticket' and I said, 'Oh, can I get it?' And he said, 'Oh, no, you have to get it at the ticket at the ticket machine.' Luckily, he waited for me. But oftentimes they may not have been able to do that.*
>
> **NEURODIVERGENT WOMAN (AGED 45–54)**

Below, we have highlighted examples from the consultations showing key barriers of unpredictable and uncertain public transport environments. We've added context about why these matter and proposed facilitators raised within the consultations.

| BARRIER | WHY IT MATTERS | WHAT COULD BE DONE |
|---|---|---|
| **Unreliable travel**, such as inaccurate arrival times, unreliable services and delays. | Some neurodivergent people struggle with unpredictable environments, finding them especially stressful. When journeys are disrupted, a new plan must be made. Access to clear, accessible information affects how easy this is to do in the moment. | Minimising disruption and delays. When this isn't possible, improving communication, with different options for accessing information and finding alternative routes. |
| **Inconsistency in services**, such as ticket purchasing processes, signage, and boarding and departure procedures across different services. | Many neurodivergent people have differences in executive function. Others have information processing and communication differences. Inconsistency across services can make travel confusing and overwhelming. Familiar tasks and environments make it easier to execute a task, such as buying a ticket. Consistent services mean there is less need to read information or speak with someone at each new location. | Standardised ticketing processes across different transport types.<br>Clear, standardised signage across public transport systems and improved visual aids.<br>Developing walk-through videos, photos and guidance on what to say or do using different types of transport. First-person-perspective videos for navigating stations. |
| **Inconsistency of information**, such as different live information across travel websites and apps. | Information, and visual and verbal language processing differences can make it difficult to find the right information and understand it. This becomes more pronounced when information is inconsistent across different apps and websites. | Improving communication between different travel providers, for better syncing of information.<br>Improved visibility and accessibility of information, such as digital information screens across all services, and retrofitting screens in older vehicles. Some services already offer this, which helps make travel more inclusive. |
| **Unpredictability of other passengers**, such as others sitting in assigned seats on trains, or fear of judgment if someone is feeling overwhelmed on transport or has a meltdown. This can also include the sensory impact from others' behaviour, such as noise or smell. | Many neurodivergent people are hypervigilant about their behaviour, learned from a lifetime of experience of others telling them they are saying or doing the wrong thing. This can lead to anxiety about speaking up. Or, if they are overwhelmed, they might feel shame about being judged by other passengers. The fear of judgment can fuel anxiety about using public transport. Uncertainty about the sensory environment can also cause anxiety. | Building upon existing public facing communications campaigns to include promoting respect and understanding for neurodivergent passengers, such as TfL's 'It's everyone's journey.' |

## Barrier two: physical infrastructure and design

> *[The train] went into a tunnel when the guard came. My disabled travel card is on my phone. It was out of signal, so he couldn't see my disabled travel card. He didn't believe me when I said that I had one.*
>
> **NEURODIVERGENT WOMAN (AGED 45–54)**

Community members reported several aspects of transport services' physical and digital infrastructure negatively affecting their experience, including the sensory environment and the lack of accessible communication options.

Below, we have listed some key barriers community members raised about infrastructure and design. We've added context about why these matter, and proposed facilitators raised within the consultations.

| BARRIER | WHY IT MATTERS | WHAT COULD BE DONE |
|---|---|---|
| **Overcrowding** and a lack of space during peak times. | Many neurodivergent people have sensory differences, which can make them more (or less) sensitive to the sensory environment. Overcrowded stations and vehicles are inaccessible for someone with sensory sensitivities. Some community members also felt unsafe when transition zones and vehicles were busy. | Increasing service frequency where possible during peak times.<br>Reviewing seating arrangements, such as offering single-seat options with pre-booking. |
| **Environmental design limitations**, such as loud noises, flickering lights, temperature and vibrations. | An irritating environment to a neurotypical person could be inaccessible to a neurodivergent person with sensory sensitivities. The effort to manage sensory overload can affect the individual's ability to engage with and enjoy their planned activity at their destination. | Transition zones and vehicles are designed and built to reduce sensory load. For example, quiet spaces, low lighting, or single seating. |
| **Poor cleanliness and sanitary conditions**, such as littered spaces, dirty seating areas, and the spread of germs in high-traffic areas. | Everybody benefits from travelling in hygienic conditions.<br>Many neurodivergent people have co-occurring health conditions and higher rates of mental health difficulties than neurotypical people. If someone is anxious about getting ill, that is a significant barrier to travel. | Maintaining regular cleaning and clearing of rubbish. |
| Reliance on extensive social and **communication skills** to navigate public transport. | Some neurodivergent people communicate without speaking, such as using text-to-speech. Others may be unable to speak when they are stressed. Others experience processing difficulties that affect their reading. Some neurodivergent people have sensory processing differences or challenges with working memory, so they may struggle to process or remember verbal instructions. | Offering alternative communication options, such as simple and clear visual aids and written instructions.<br>Written information should have read-aloud options or have staff available to speak with.<br>Reducing social and communication pressure, for example, all services offering tickets and accessing information digitally and through automated systems, as well as in-person options. |
| **Inconsistent access to Wi-Fi** and a lack of charging points. | Digital technology supports neurodivergent people to show their disabled user pass, buy tickets, or access live travel information. | Investing in digital infrastructure so people's devices can be charged and functional. |

## Barrier three: customer service factors

> *They made me sit on a wheelchair to get around this airport. And I was like, 'I can walk.' And they said, 'Yeah, but we can't explain to people that you have a disability but you can walk.'*
>
> **NEURODIVERGENT WOMAN (AGED 18–24)**

Numerous community members stressed that transport staff should know more about neurodivergence. This includes staff being suitably trained to support customers in a neuroinclusive way, free from judgment and stigma.

Some community members shared examples of instances when they felt judged by service staff when seeking support.

Below, we have listed key barriers to public transport related to neuroinclusive customer service identified in the community consultations. We've added context about why they matter and examples of proposed solutions from community members.

| BARRIER | WHY IT MATTERS | WHAT COULD BE DONE |
|---|---|---|
| **Lack of understanding from public-facing staff** about neuro-divergence, leading to misunderstandings or neurodivergent people feeling judged or excluded. | When people know more about neurodivergence, they can be better placed to understand why someone might be distressed, need additional support or find more effective ways to communicate with them. | Evidence-backed neurodiversity training for public-facing staff to provide better support to neurodivergent passengers. |
| **Lack of staff available** to provide information and support. | Neurodivergent people, and many others, would benefit from additional information and support when needed, such as how to navigate a service for the first time. | Additional staff to be consistently available to provide information and support." |
| **Inconsistent enforcement of rules** and oversight that support neurodivergent passengers. For example, ticket checks, respecting quiet spaces and no vaping/smoking or eating rules. | Many neurodivergent people have sensory differences, so ensuring no-smoking rules and that loud noises are addressed in quiet spaces will make spaces more inclusive for people. | More consistent rule enforcement and checks |

## Individual differences

The neurodivergent community is diverse, with individuals having different strengths and support needs. The fourth theme explores the individual differences that affect which barriers neurodivergent people face, and the extent to which they are felt.

We have listed some individual differences that affect how individuals experience barriers, why it matters, and proposed solutions from the community consultations.

> *I didn't wear my lanyard when I was travelling after dark in the winter. I didn't feel safe. The tube station was quieter, and I didn't feel safe to wear it because I thought, 'I'm just advertising my vulnerability.'*
>
> **NEURODIVERGENT WOMAN (AGES 45-54)**

| INDIVIDUAL DIFFERENCES | WHY IT MATTERS |
|---|---|
| Differences in **knowledge and experience** of using public transport | The fear of judgment for getting something wrong deters some neurodivergent people from using public transport, or adds to the stress and anxiety of the experience. This is made more confusing by the inconsistency across services. |
| Differences in **cognitive strengths and weakness** | Each neurodivergent individual has individual strengths and weaknesses. The differences in this cognitive profile will affect what barriers someone experiences, and to what extent. This will also influence what support they need. |
| Co-occurring **health conditions and disabilities**, which may also impact physical mobility | Many neurodivergent people also have co-occurring health conditions. The unique combination of an individual's health and neurodivergence will influence the support that they need. |
| **Individual personal characteristics**, such as gender | Different personal characteristics can cause someone to feel vulnerable. When experienced together, this vulnerability can feel even greater. For example, a woman travelling alone at night may not feel comfortable wearing a visible indicator of their disability. |

**What can be done:**

— Providing and visibly promoting community training to help members of the public develop the knowledge, skills, and confidence to use public transport independently.

— Improving support services, making it easier for passengers to indicate and access their individual support needs across multiple transport services.

— Developing accessibility guidelines and standards that considers the intersectionality of individual characteristics, including neurodivergence, gender, ethnicity, age and other health conditions.

## The impact of inaccessible public transport

> *I view being able to use public transport, trains particularly, as a high-function capacity that I don't usually have enough energy for. It is a situation I feel is a choice of cost… Like everything else when [you're] disabled, you balance the costs of money, energy, capacity and dignity, and try not to fall too much behind.*
>
> NEURODIVERGENT ADULT

The final theme from the community consultation illustrates the impact of inaccessible public transport on the individual. This explores different personal and financial costs of travel and its impact on neurodivergent individuals.

> *I don't go places to visit like museums even though I would love to because I can't justify the energy cost as well as the financial cost.*
>
> NEURODIVERGENT ADULT

| IMPACT ON THE INDIVIDUAL | WHY IT MATTERS |
|---|---|
| Personal cost of travel: **cognitive fatigue or risk of being overwhelmed**. | Community members reported the need to mentally prepare and manage their energy levels the day before and after travelling.<br>Some take indirect routes to avoid overcrowded services to manage sensory overwhelm. This can result in longer journeys, negative impacts on wellbeing and increased safety risks, especially when travelling during quieter hours. Others spoke about limiting their travel to more predictable and familiar routes. |
| Personal cost of travel: **safety concerns**, such as absence of on-site staff during service disruptions, early mornings or late evenings. | Some neurodivergent people were concerned that wearing the Hidden Disability Sunflower Lanyard would mean other passengers could take advantage of them. Increasing visible staff presence during key times, such as at night, could help neurodivergent passengers feel safer. |
| Personal cost: to avoid the challenges of public transport, some community members reported **relying on friends and family to drive** them to their destinations. | Some community members highlighted that they don't drive. Although it can be helpful on occasion, relying on rides from others is not always feasible and does not support people's independence. This means neurodivergent people miss out on work, health or social events. |
| **Financial costs** of travel limit the services available for community members to use. | Community members reported limiting their transport use to off-peak times and using more affordable forms of transport. For example, the prohibitive cost of train travel means people feel forced to use transport types, such as coaches, which are harder to navigate and more time-consuming. This can impact their overall energy and wellbeing, with members reporting using additional time to physically recover after a journey. |

## Conclusions from the community consultations

By interviewing neurodivergent people about their experiences of public transport, we identified several barriers to using public transport.

These barriers focused on the unpredictable and inconsistent nature of transport, the lack of neuroinclusion within the physical infrastructure and design of public transport services, and challenges regarding customer service. Community members emphasised how barriers, combined with individual differences, influenced the impact of inaccessible transport on their quality of life.

In these interviews, community members also began to identify possible solutions to many of these barriers, which we will explore further in the public survey.

# Prioritising the challenges

Through the community consultations, we established the barriers neurodivergent people experience when using public transport. Next, we ran a public survey with 652 participants to learn:

- which barriers were having the biggest impact

- how these barriers impact how neurodivergent people use public transport and

- which facilitators would make the biggest difference.

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## ABOUT THE SURVEY PARTICIPANTS

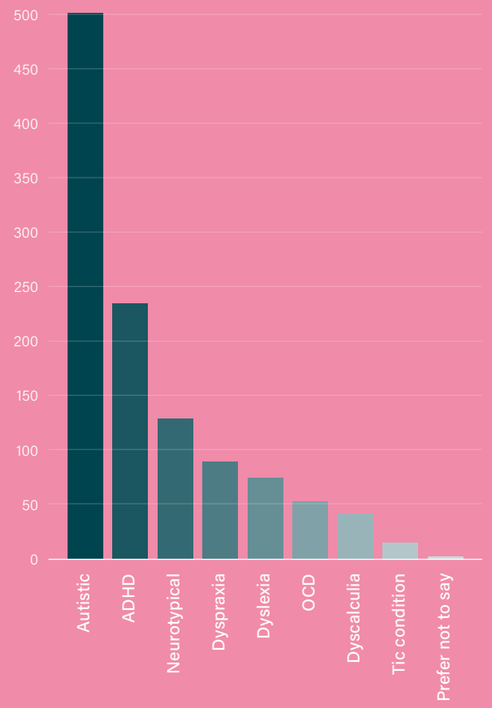
Six hundred and fifty two people completed our survey. Both neurodivergent and neurotypical people could participate.

We'll use the term neurotypical for anyone who did not state that they are neurodivergent in the survey. However, it's worth noting that some people are unaware of their neurodivergence.

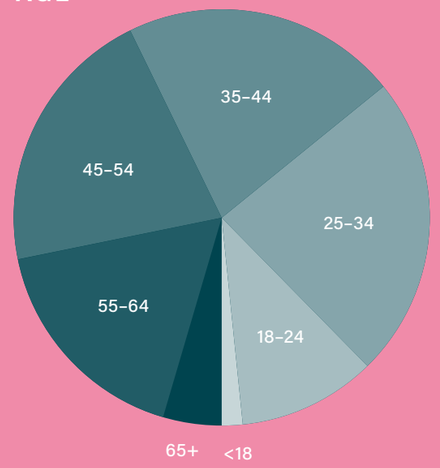
To take part in our survey participants must:

— be aged 16 years or older
— be based in the UK; and
— ha used or considered using public transport.

### NEUROTYPES




### AGE




### GENDER IDENTITY

**65%** Female

**24%** Male

**9%** Non-binary

**1%** Other

### ETHNICITY

**85%** White

**4%** Asian or Asian British

**2%** Black, Black British, Caribbean or African

**2%** Mixed or Multiple

**6%** Other

### GEOGRAPHICAL INFO

**76%** Urban

**34%** Rural

## How neurodivergent people are using public transport

Here, we wanted to:

- understand which types of public transport people are using, what for and how frequently; and

- identify differences in how neurodivergent people use public transport compared to neurotypical people.

### PUBLIC TRANSPORT USE

Almost all respondents (95%) had used public transport at least once in the previous 12 months. This rate did not differ whether someone was neurodivergent or neurotypical.

We asked which modes of transport people used most frequently. We used the 16 types identified during our definition-setting activity. Unsurprisingly, the most used types of transport were:

— trains
— buses
— trams, and
— underground/ metro services.

There were several significant differences in how frequently different types of transport services were used by neurodivergent and neurotypical people:

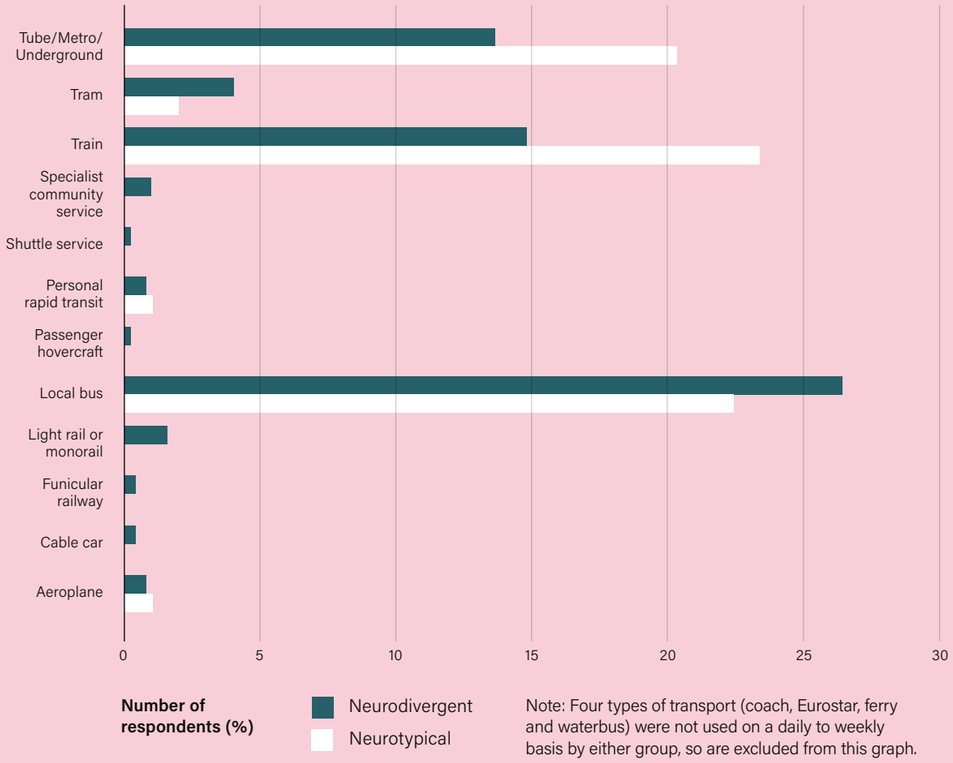
1. Neurotypical people were more likely to use trains, and underground or metro services several times a week, compared to neurodivergent people. [Figure 1]
2. Neurodivergent people were more likely to use local buses several times a week than neurotypical people. [Figure 1]
3. Neurodivergent people were less likely to have travelled by plane at any point over the last 12 months, compared to neurotypical people. [Figure 2]

### REASONS FOR USING PUBLIC TRANSPORT

To learn what people use public transport for, we asked participants to indicate if they used it to attend work, education, healthcare, daily errands, recreational or religious activities, or to see friends and family. There were some significant differences in neurodivergent and neurotypical people's responses:

- More neurotypical people used public transport to attend work and for social, recreational or religious activities than neurodivergent people.
- More neurodivergent people used public transport to attend medical and healthcare appointments than neurotypical people.

**FIGURE 1.** TYPES OF TRANSPORT USED ON A DAILY TO WEEKLY BASIS ACROSS THE GROUPS




Note: Four types of transport (coach, Eurostar, ferry and waterbus) were not used on a daily to weekly basis by either group, so are excluded from this graph.

**FIGURE 2.** PERCENTAGE OF RESPONDENTS WHO HAVE USED AN AEROPLANE AT LEAST ONCE IN THE LAST 12 MONTHS

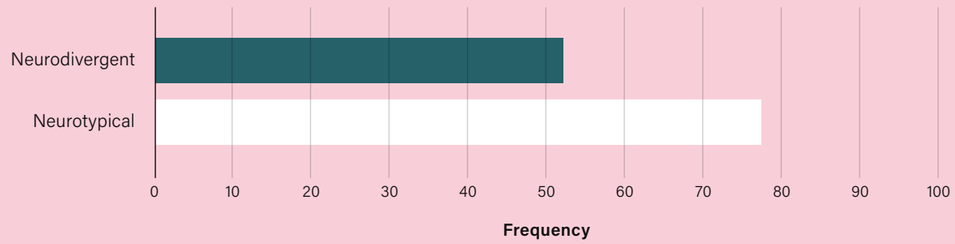
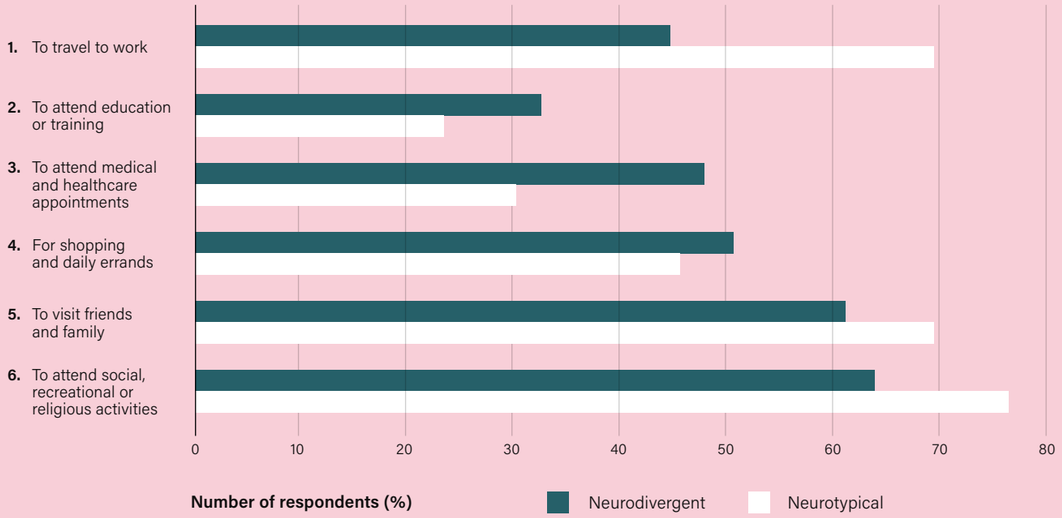


**FIGURE 3.** REASONS FOR PUBLIC TRANSPORT USE ACROSS THE GROUPS




Several factors may have influenced these findings. 63% of the neurodivergent people who took part in the survey identified as being disabled or having co-occurring health conditions, compared to 25% of the neurotypical people. Therefore, the greater use of public transport for healthcare may be through need rather than preference.

We did not ask people why they use specific types of public transport. However, in the community consultations, community members highlighted that often there is a lack of choice. Using public transport, or a type of transport, may not be an active decision or preference.

In the survey, we asked people to indicate their driving habits. **Only 39% of neurodivergent people said they drove regularly, compared to 60% of neurotypical people.** Therefore, for many neurodivergent people, using public transport may be the only option. This may explain why we did not find any overall difference in the use of public transport. However, the effort and energy to use public transport may explain the differences in use, particularly for social participation. Another influencing factor was financial cost. For example, many people described train ticket prices as prohibitively expensive.

You can find a full list of the barriers and facilitators in the Appendix.

## Barriers and facilitators when using public transport

To understand the most impactful barriers and facilitators, we gave people a list of 40 factors and asked them to indicate how helpful or unhelpful they were. We then looked at which factors were most frequently reported to be unhelpful or helpful. We also explored whether there were significant differences in how many neurodivergent and neurotypical people rated a factor. A full list of the results can be found in the Appendix [APPENDIX 2 & 3].

### COMMON BARRIERS REPORTED BY NEURODIVERGENT PEOPLE

68% **Lighting in stations or on services:** 68.2% of neurodivergent people compared to 26.5% of neurotypical people

91% **Noise in stations or on services:** 90.9% neurodivergent people compared to 53.9% neurotypical people

76% **Smells in stations or on services:** 75.8% neurodivergent people compared to 39.2% neurotypical people

52% **Feeling safe:** 51.5% neurodivergent people compared to 17.6% of neurotypical people

83% **Effort and energy used on public transport:** 82.7% neurodivergent people compared to 49% of neurotypical people

85% **Behaviour of other service users:** 85.3% neurodivergent people compared to 59.8% neurotypical people

### COMMON FACILITATORS IDENTIFIED BY NEURODIVERGENT PEOPLE

1. Transport staff having knowledge about neurodiversity: 73.6% neurodivergent people compared to 48% of neurotypical people
2. Walkthrough videos and photos of stations and stops: 64% neurodivergent people compared to 40.2% of neurotypical people
3. Quiet zones in transition zones: 85.1% neurodivergent people compared to 63.7% of neurotypical people
4. Single seating options: 81.5% neurodivergent people compared to 62.7% neurotypical people
5. Options to communicate without speaking: 60.2% neurodivergent people compared to 42.2% of neurotypical people

### MOST FREQUENTLY REPORTED FACILITATORS BY ALL RESPONDENTS

Over 80% of participants reported certain factors as facilitators to travel, with similarly high ratings from both neurotypical and neurodivergent respondents. This suggests these facilitators will not only significantly improve the experiences of neurodivergent people but also other passengers.

1. Live information boards at transition zones: 88%
2. Itinerary or plan of journey: 85.3%
3. Quiet zone on transport services: 83.1%
4. More available seating: 83%
5. Quiet zone in station: 81.7%
6. Live information app: 80.8%

## Conclusions from the public survey

The survey gave us valuable insights into neurodivergent and neurotypical passengers' public transport use and an opportunity to compare their use and experiences. 95% of respondents used public transport within the last year, regardless of whether they were neurodivergent or neurotypical. However, we found notable differences between the two groups in the types of transport they use and what they use transport for. Neurotypical people were more likely to use public transport for work and leisure activities, and neurodivergent people were more likely to use public transport for doctors' appointments.

An important finding was that 60% of neurotypical people regularly drive, compared to 39% of neurodivergent people. These figures demonstrate the importance of having accessible public transport, especially when driving a private car is not an option for someone.

We also identified three key trends, highlighting where public transport can be more neuroinclusive:

1. The sensory environment of public transport, including the noise, smell and lighting in stations and on services.
2. The behaviour of other service users and staff, including safety concerns and support from transport service staff.
3. Information and communication, including availability of information at stations, stops, on services and online.

# Identifying the solutions

Having established the barriers typically experienced by the neurodivergent community, we worked with the community to identify solutions. We ran a focus group workshop with 15 community members. The focus groups helped us to talk in more detail than in our earlier community consultations about the four priority barrier areas. We combined the findings from the focus groups with earlier research activities to develop 11 recommendations to make public transport in the UK more accessible for neurodivergent people.

## WHO TOOK PART

Fifteen neurodivergent community members took part in the focus groups. Ten people were neurodivergent, one was a parent or carer of a neurodivergent person, and four were both. Of the parents and carers, two supported children aged 4 to 11 years, and three 12 to 16 years. The types of neurodivergence the children had included autism, ADHD, dyslexia, dyspraxia, learning disabilities and sensory processing differences.

## WHAT WE ASKED

We invited our community members to take part in an online focus group workshop. Each community member self-selected to be part of one of the four priority areas:

1. Sensory environment of public transport
2. Other service users and staff on public transport
3. Information and communication while using public transport
4. Uncertainty and inconsistency when using public transport

We identified these priority areas from the results of the community consultations and public survey.

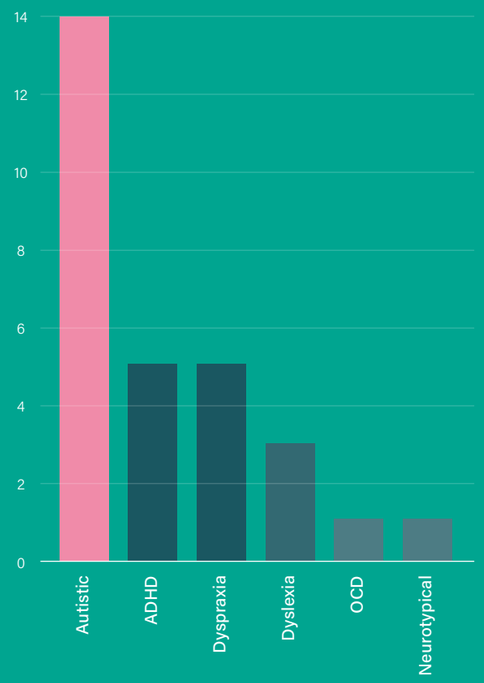
The focus group participants completed two activities. In the first activity, we asked them to discuss what the challenges were, where and when specific to their priority area. In the second activity, the groups discussed potential solutions to address these challenges. During each activity, the groups added their thoughts to an online post-it note board.

## WHAT THE OUTCOMES WERE

We created a list of 22 potential solutions from the workshop members' suggestions. Then, we asked each community member to choose the three solutions that would make the biggest difference to them.

We used the results from the focus group to develop recommendations to make public transport more accessible and neuroinclusive. In developing these recommendations, we included the gaps identified across all the research activities in this project, including the literature review, community consultations, public survey and community focus groups. A list of 11 recommendations was reviewed and finalised with the community advisory group.

## NEUROTYPES




## GENDER IDENTITY

**73%** Female

27% Male

## ETHNICITY

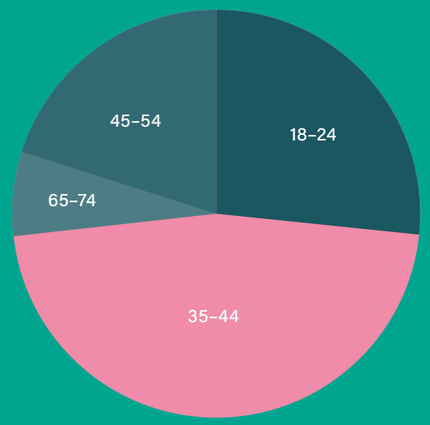
**47%** White

20% Asian or Asian British

20% Black, Black British, Caribbean or African

13% Mixed or Multiple

## AGE




## GEOGRAPHICAL INFO

**67%** England

27% Scotland

7% Wales

**80%** Lives in predominantly urban areas

**TABLE 1.** SOLUTIONS RANKED BASED ON THE COMMUNITY MEMBERS' PRIORITIES (%)

| RANK | SOLUTION | SELECTION COUNT (%) |
|---|---|---|
| 1 | Real-time travel app with walkthroughs, transition point information and personalised updates of alternative routes. | 16 |
| 2 | Designing vehicles and transition zones that are more neuroinclusive. For example, adjustments to sound, haptic sensations, lighting, and vehicle layouts that better support sensory loads. | 11 |
| 3 | All transport service staff to have completed neurodiversity awareness training to learn how to better support neurodivergent passengers. | 11 |
| 4 | Trains to limit the number of passengers that can board the service to reduce overcrowding issues. | 9 |
| 5 | Accurate seating validation process to ensure passengers who pre-book a seat are able to use them. | 9 |
| 6 | Digital screens in train carriages to display key route information, such as side doors open, and carriage closest to station exits. | 9 |
| 7 | Operating 'quiet services.' Include use of dimming lights and requesting passengers to keep noise to an absolute minimum. | 7 |
| 8 | Consistent rule enforcement by transport staff across services. | 7 |
| 9 | Tannoy and other announcements to use clearer voice/audio. | 4 |
| 10 | Fostering a culture where people respect each other's needs and certain expectations (e.g. not talking in the quiet carriage). | 2 |
| 11 | Clear and consistent information on passenger rules on services. | 2 |
| 12 | Communication options, such as through an app or by speaking to available staff. | 2 |
| 13 | Additional staff to be available on transport services to provide support. For example, on buses. | 2 |
| 14 | Clear and accessible information on what types of support can be provided by staff on different transport services. | 2 |
| 15 | Developing a community resource-sharing platform to learn what works for others when navigating public transport challenges. | 2 |
| 16 | Information boards to display more comprehensive information ahead of boarding time, such as upcoming services and carriage information. | 2 |
| 17 | Simplified ticketing systems on trains, such as ticket prices and how to purchase a ticket. | 2 |
| 18 | Cleary signposted help desks and identifiable staff available at transition points to provide support and information. | 0 |
| 19 | Passengers can discreetly signal the need for support using a universally recognised lanyard or badge across UK transport. | 0 |
| 20 | Staff at train stations to be better supported and incentivised to provide updates to passengers on service changes. | 0 |
| 21 | Establish a policy where transport providers must publish up to date data on transport information apps. | 0 |
| 22 | Station codes on train platforms and carriages to better indicate the service route and destination. | 0 |

# Final thoughts

## RESEARCH RECAP: SUMMARISING OUR KEY FINDINGS

During this project we spoke with over 550 neurodivergent community members across five research activities. From these activities we established four key barriers experienced by neurodivergent people when using public transport:

— Design and physical infrastructure of vehicles and buildings, including the sensory environment.
— Information and communication factors, including what information is shared, and how.
— Inconsistency, uncertainty and unpredictability within public transport.
— The behaviour of others, including other users and neurodiversity knowledge of transport service staff.

The impact of these barriers means:

— neurodivergent people are not able to use public transport how and when they want to, and
— neurodivergent people are unable to fully participate in activities at their destination, due to the energy spent navigating the barriers.

To address these challenges and gaps in existing knowledge, we have proposed 11 recommendations. These recommendations call for systemic, co-ordinated and consistent change across the public transport network in the UK, and focus on five key areas:

— Driving change through collaboration and research
— Maximising digital technology
— Integrate and simplify
— Understanding neurodivergence
— Less crowded, more support

## WIDENING THE CONVERSATION: CONSIDERATIONS FOR FUTURE RESEARCH

In this research we have aimed to capture the breadth of experiences across the UK. Throughout our research activities, we included community members from England, Scotland, Wales and Northern Ireland. We also sought to capture the experiences of people from rural and urban areas. Most participants, particularly within our public survey, lived in urban areas that typically have access to large integrated systems, such as Transport for London. These systems allow for choice, which is limited for people in rural areas. While our recommendations take a holistic perspective on the public transport network, we emphasise the importance of including more neurodivergent people from rural locations in future work.

We took measures to ensure diversity within the community members who took part in this research, reflecting the individual experiences of the neurodivergent community. People from racialised communities participated in all our research activities. However, we recognise additional barriers faced by neurodivergent people with limited English, which were not explored in this work. Future work with the community should seek to engage with more members of the neurodivergent community with limited English, and people who communicate without speaking.

# A call to action

Thank you to the Motability Foundation for generously funding this research, enabling us to call attention to the critical need for neuroinclusive public transport. This report aims to amplify the voices of the neurodivergent community in the conversation about accessible public transport. These voices are calling out for a formative shift towards inclusive travel. Neurodivergent people deserve better.

The Government Inclusive Transport Strategy 2018 focused on addressing accessibility, calling for inclusive transport for all. Although the Inclusive Transport Strategy was primarily focused on disabled people and older populations, several of the recommendations in the Strategy align with the ones within this report, such as:

— inclusive physical infrastructure
— better staff training, and
— and improved information and communication.

However, as our report demonstrates, many of these barriers remain unaddressed. Nearly ten years later, the need for change is still urgent.

While there have been commendable initiatives towards better accessibility, these must be consistently implemented across all transport providers, and the people who benefit from them must be aware of their existence. Our report builds on other recent campaigns and work calling for more accessible transport, such as Motability's The Transport Accessibility Gap, Select Committee report for disabled transport users and the National Autistic Society's Empowering Autistic Travel. Many of the recommendations in these reports are consistent with ours. Together, we're providing the evidence needed to facilitate progress.

Although not all neurodivergent people consider themselves to be disabled, many neurodivergent conditions qualify as a disability due to the substantial impact on someone's daily life. It is also important to recognise that many neurodivergent people have co-occurring conditions and disabilities, which can affect the barriers individuals experience, and how they are addressed.
Future work on accessible transport should encompass broader initiatives to include cognitive differences and the full spectrum of diversity and intersectionality, alongside disability and older age. In doing this, we are recognising how overlapping factors can compound the challenges experience by neurodivergent people and everyone using public transport in everyday life.

The findings and recommendations in this report set out a strategy for how central and local governments, regulatory and standards bodies, transport operators, researchers, and developers can work with the neurodivergent community to build a neuroinclusive public transport network across the UK. Collaboration is crucial to drive change until public transport is accessible for all. By working together, we can make this vision a reality.

# Helpful definitions

Although the term 'neurodiversity' was first defined in the 1990s, many people are relatively new to the language around neurodivergence. Language evolves quickly, so we have created some definitions that you may find useful when reading this report. It may also be helpful when talking about neurodiversity in general.

## NEURODIVERSITY DEFINITIONS

**Neurodiversity** refers to natural variability in how brains work. The term acknowledges the variety of ways people can experience and interact with the world or learn and process information. The neurodiversity movement is a social movement that aims to overcome the over-medicalisation of neurodivergent people. It supports a 'differences, not deficits' understanding of the different ways our brains work.

Neurodiversity is typically used in a broad, societal sense and reflects the broader spectrum of how all human brains can function.

*Example: The neurodiversity movement advocates for the acceptance and inclusion of people with different cognitive styles and abilities.*

**Neurodivergence** is an umbrella term for mind and brain differences that differ from societal definitions of 'normal'[1]. Although not all neurodivergent people experience disability, the interaction between neurodivergence and society's expectations is often disabling[1–4]. This means many neurodivergent people face barriers to participating in society, affecting their opportunities, independence and causing significant disadvantages[3].

*Example: At Autistica, we research neuro-divergence, with a particular focus on autism.*

**Neurodivergent** is a term used to describe people whose brain functions differently from dominant societal standard of 'normal.' While there is no universally agreed-upon definition of which groups fall under this term, it is commonly associated with neurodevelopmental differences for example, autism, ADHD, dyslexia, or dyspraxia.

*Example: Charlie is neurodivergent and has a diagnosis of ADHD.*

**Neurotypical** is a term for a person who does not have any neurodivergent conditions; their brain functions in a way considered "typical" by societal standards.

*Example: In comparison with neurodivergent people, neurotypical people face fewer barriers to using public transport.*

**Neurotype** refers to someone's individual neurodivergent identity. This includes someone who is neurotypical or someone who has a single neurodivergent diagnosis. Or it could include the nature of someone's co-occurring neurodivergence, for example, being autistic with ADHD, informally known as AuDHD.

*Example: My neurotype is AuDHD.*

**Neurodiverse** is a term for a group of people with different neurotypes, which can include both neurodivergent and neurotypical people. Although you may have seen this term used for individuals, an individual is not neurodiverse; they are either neurotypical or neurodivergent.

*Example: A ferry full of passengers could include autistic people, people who have dyslexia, people with ADHD, and neurotypical people; a neurodiverse group of passengers.*

**Neuroinclusive** is a term that refers to being inclusive of neurodivergent people. Within public transport, this refers to policies, services and infrastructure that are developed to create an environment that is suitable for people of varying neurotypes.

*Example: Our coach station has a quiet zone to make it more neuroinclusive.*

**Executive function** refers to the cognitive processes that help us to process information, make decisions, plan and take action. Many neurodivergent people struggle with executive function for certain tasks, which affects how they plan and carry out tasks.

*Example: Tim's differences in executive function mean that travelling by public transport is exhausting.*

**Meltdowns and shutdowns** are reactions to extreme distress. Meltdowns involve a range of behaviours which may include self-injury, crying, shouting, rocking and other outward signs of distress. Shutdowns are similar to a 'freeze' response, where someone may struggle to communicate or move. Meltdowns and shutdowns can happen from stressors such as sensory overload, social overwhelm, uncertainty and unexpected changes.

Anyone of any age can have a meltdown, although they can be more common in autistic people or people with learning disabilities, ADHD or anxiety. Meltdowns can be mistaken for tantrums, but they are not the same.

*Example: Travel delays and the sensory overwhelm of a busy, overcrowded carriage could trigger a meltdown.*

## DEFINITIONS FOR THIS REPORT

**Public transport:** a transport service for which you (or someone) pay(s) a fare for that may be shared with people you do not know. It is a form of transport that is not privately owned by the user.

We developed this definition in collaboration with the neurodivergent community for this report. Find out more on page 26.

*Example: Our community members included 16 types of transport as public transport. Including local buses, coaches, airplaine/ aeroplane, train, monorail, ferry and water taxi.*

**Community members** refers to neurodivergent people and their families. They may have a formal diagnosis, be awaiting assessment or self-describe as neurodivegent.

*Example: Community members were asked what barriers they experience using public transport.*

**Accessible** refers to barrier-free environments, documents, or research methods, which can be used by as many people as possible.

*Example: Respecting quiet carriages makes public transport more accessible for neurodivergent people.*

**Transition zones** refer to spaces where people transition onto public transport, or from one mode of transport to another.

*Examples: Train stations, coach stations, ferry ports, and waiting rooms.*

**Barriers** a barrier is anything that blocks someone from participating in a particular task or society on an equal basis with others.

*Example: The inconsistency of how to purchase a ticket for different train services is a barrier to neurodivergent using new train services.*

**Facilitators** refer to the helpful factors that make it easier and more comfortable for neurodivergent people to use public transport.

*Example: Watching a walk-through video of the airport going through security facilitates my being able to travel by plane for holidays.*

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# Appendix



## **APPENDIX 1.** DESCRIPTORS OF PUBLIC TRANSPORT

| DESCRIPTOR |
|---|
| **1.** Operates along a fixed route |
| **2.** Operates on a fixed timetable or schedule |
| **3.** Shared with other people who I may not know |
| **4.** Not privately owned by the user |
| **5.** Open to the general public |
| **6.** May charge a fare |
| **7.** Is managed by a central operating company |
| **8.** Any means of transport available for hire |
| **9.** For multiple passengers |
| **10.** To travel between places |
| **11.** Is run by or supported by national or local government |
| **12.** Has fixed access points, such as a bus stop, or station |
| **13.** Is run by a commercial, profit-making business |

## **APPENDIX 2.** BARRIERS TO PUBLIC TRANSPORT USE

| FACTOR |
|---|
| **1.** Lighting in stations or on services |
| **2.** Noise in stations or on services |
| **3.** Smells in stations or on services |
| **4.** How safe you felt |
| **5.** Effort and energy used on public transport |
| **6.** Behaviour of other service users |
| **7.** Support from transport service staff |
| **8.** The information available at the station or at a stop |
| **9.** Availability of services when needed |
| **10.** The information available on services |
| **11.** The direction sign posts at station or stops |
| **12.** Information available online about stations and stops |
| **13.** Services available that were going to where you needed to get to |
| **14.** Services running on a regular timetable |
| **15.** Services running on a regular route |
| **16.** Financial cost of using public transport |

## **APPENDIX 3.** FACILITATORS TO PUBLIC TRANSPORT USE

| FACTOR |
|---|
| **1.** Transport staff having knowledge about neurodivergent conditions |
| **2.** Walk through videos and photos of stations and stops on website |
| **3.** Quiet zone in station |
| **4.** Single seating options |
| **5.** Being able to communicate non-verbally with transport services and staff e.g. via an app |
| **6.** Service announcements in stations and stops |
| **7.** Standing space on transport services |
| **8.** Quiet zone on transport services |
| **9.** More available seating |
| **10.** Pre-booked or assigned seating |
| **11.** Designated accessible seating |
| **12.** Purchasing a ticket from a machine |
| **13.** Service announcements on services |
| **14.** Itinerary or plan of the journey |
| **15.** Transport service staff to ask for information |
| **16.** Additional support needs card, badge or lanyard |
| **17.** Being able to communicate verbally with transport services |
| **18.** Live information boards at stations and stops |
| **19.** Special assistance support |
| **20.** Static information boards and timetables |
| **21.** Live information app |
| **22.** Purchasing a ticket online or on an app |
| **23.** Directions, signs and maps at stations and stops |
| **24.** Purchasing a ticket from a member of staff |

## **APPENDIX 4.** NATIONAL STEERING COMMITTEE IMPLEMENTATION FRAMEWORK

To make public transport inclusive of neurodivergence, we need systemic change with commitment and direction from industry leaders. The following implementation framework sets out guidance for roles and responsibilities of the committee, key members, and steps for implementation.

### ROLES AND RESPONSIBILITIES

- **Strategic oversight and guidance:** The committee should provide strategic direction for neuroinclusive transport policies, ensuring alignment with national and local priorities.
- **Policy development:** Develop and advocate for policies that mandate neuroinclusive practices across all transport modes.
- **Design and infrastructure:** Collaborate with transport manufacturers and designers to create neuroinclusive vehicle and station designs, considering sensory sensitivities, information processing differences, and physical disabilities.
- **Research and evaluation:** Fund and oversee research projects to develop, test, and evaluate neuroinclusive solutions, ensuring evidence-backed practices.
- **Community engagement:** Facilitate ongoing consultation with neurodivergent individuals and advocacy groups to ensure policies and practices meet their needs.
- **Training and awareness:** Implement comprehensive neurodiversity training programmes for transport staff, ensuring consistent understanding and support across the sector.
- **Monitoring and reporting:** Establish metrics and reporting mechanisms to track progress and impact of neuroinclusive initiatives, ensuring transparency and accountability.

### MEMBERS

- **Neurodivergent Individuals:** Include representatives from various neurodivergent communities to provide first-hand insights and experiences from their lived experience.
- **User-led advocacy groups:** Collaborate with groups such as Transport for All and the Disabled Persons Transport Advisory Committee (DPTAC).
- **Transport providers:** Engage with representatives from different transport modes (e.g., rail, bus, ferry) to ensure comprehensive coverage.
- **Government representatives:** Include members from relevant government bodies to facilitate policy integration and support.
- **Accessibility experts:** Involve specialists in accessibility and inclusive design to provide technical guidance.
- **Design specialists:** Work with professionals in vehicle and infrastructure design to implement neuroinclusive features.

### IMPLEMENTATION STEPS

- **Formation:** Initiate the formation of the committee with clear terms of reference and objectives.
- **Funding:** Allocate funding from government bodies and research institutions to support the committee's activities.
- **Stakeholder engagement:** Conduct initial consultations with key stakeholders to identify priorities and areas of focus.
- **Action plan:** Develop a detailed action plan outlining short-term and long-term goals, milestones, and deliverables.
- **Communication strategy:** Create a communication strategy to raise awareness and promote the committee's work to the public and relevant sectors.


Direction of Travel

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