TRANSPORT FOR THE NORTH

# Strategic Transport Plan

## Draft for consultation
## May 2023

**How to respond to our consultation**

Anyone wishing to respond to our consultation can visit our virtual consultation room via **www.transportforthenorth.com/stp**, or **email stp@transportforthenorth.com** for further information.

We'll also be hosting a series of in-person and virtual events where people can learn more about the Plan and provide their feedback to staff. Visit the website for more details.

**Accessibility**

If you would like this document in a more accessible format, please email **STP@transportforthenorth.com**

# Contents

# 1.

# Executive Summary

## Our role and purpose of this Plan

An effective, efficient transport network is a fundamental part of everyday life. It connects people to jobs, health, education and leisure opportunities. It connects businesses to each other and their employees and allows the efficient movement of goods and services.

As Transport for the North (TfN), we speak with one voice on behalf of the North of England for transport. We are a statutory body made up of elected and business leaders from across the whole of the North, we collectively represent all of the region's 16 million citizens.

Our role is to advise Government on the priorities for investment in the North's transport system, informed by our local knowledge, expertise and evidence and with a particular focus on connecting places across the North. This Plan, our second Strategic Transport Plan (STP) sets the vision, objectives and the North's long term strategic transport priorities up to 2050, creating a consistent framework for our work with government, local transport bodies and delivery bodies.

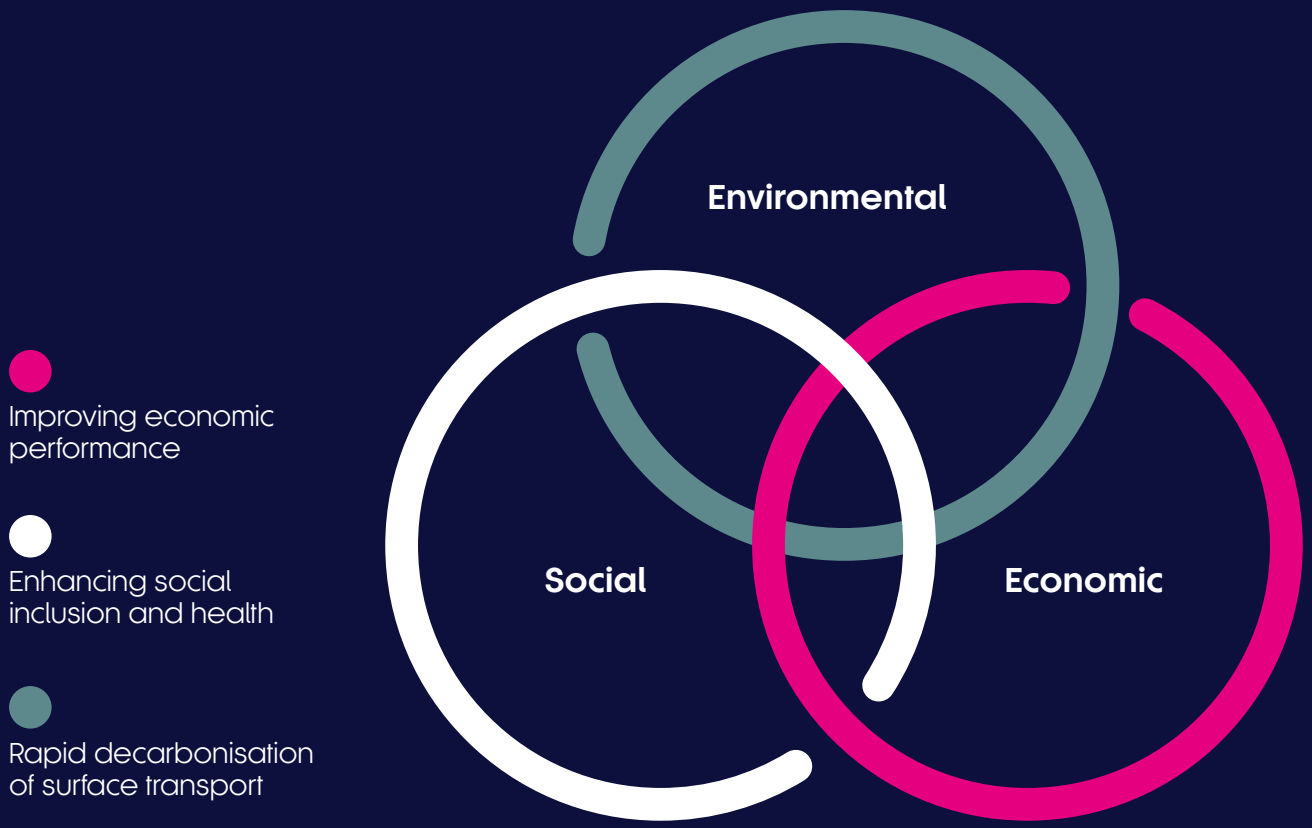
To reflect the North's diverse people, places and the scale of the transport challenges we face we have developed this Plan with five key principles in mind. We want our Plan to be a user-centric, outcome-focused, place based strategy that is underpinned by robust evidence. This will be enabled by a systems approach which recognises the need to integrate transport solutions with energy, spatial planning and digital connectivity.

### Our vision

By 2050 the North of England will have become a thriving, socially inclusive region. Our communities, businesses and places will all benefit from sustainable economic growth, improved health and wellbeing and access to opportunities for all. This will be achieved through a transformed, zero-emission, integrated, safe and sustainable transport system, which will enhance connectivity, resilience and journey times for all users.

Our vision is supported by three clear strategic ambitions the North wants to achieve (see figure 1.1).

**Figure 1.1**




Our strategic ambitions are underpinned by three core TfN strategies that embrace the principles of this plan:

- **The Northern Powerhouse Independent Economic Review (NPIER)** which identifies the economic prize of closing the productivity gap between the North and the UK would mean a northern economy that is £118bn pa larger by 2050
- TfN's **Regional Decarbonisation Strategy** which sets the need to achieve near zero carbon emissions of surface transport by 2045
- Our **Socially Inclusive Transport Strategy** ("Connecting Communities") which builds on our ground breaking work on Transport Related Social Exclusion (TRSE) to remove the risk of TRSE for a million people across the North.

To achieve our vision and strategic ambitions, we need to address connectivity challenges by creating a transport system for the North that enables:

- Strong, interdependent and integrated labour markets working collectively to drive up productivity and growth through agglomeration
- Fast, frequent, and reliable connections between our economic centres for goods, people and business alongside equally strong outwards facing connections to other parts of the UK and to our international gateways
- Policy changes that will accelerate the decarbonisation of our transport network and reduce car dependency both within and between places
- Safe, reliable and accessible public transport networks, both at pan-regional and local level, which enables access to opportunities for all communities across the North.

Improvements in the transport network need to be considered as part of an overall solution to a complex set of economic, environmental and social challenges facing the North of England. When goods, services, knowledge and skills move more freely, greater collaboration and transformational economic growth will follow. This Plan identifies three connectivity needs for the North:

1. Pan-Northern connectivity, sustainably connecting the economic centres of the North through our seven Strategic Development Corridors and the delivery of the full HS2 and Northern Powerhouse Rail (NPR) network

2. Connectivity between the North and other parts of the UK, recognising the North's critical role in connecting all parts of the UK not least for moving goods

3. Supporting our member authorities to transform local connectivity within all places of the North, including cities, towns, coastal and rural areas.

Poor road and rail connectivity is holding back the North, an issue exacerbated by current deficient performance of our rail network. The result is a dependency on private transport for many in the North, which acts as a barrier to opportunity and hinders efforts to decarbonise travel. The North's economic and social challenges manifest in lower-than-average wages for workers, which subsequently leads to multiple and adverse consequences such as increased benefit dependency, increased health and social care costs and cycles of worsening poverty and inequality.

The way in which businesses and people responded to the pandemic highlighted how the need to travel and the way in which we travel can change rapidly. It showed that there is nothing permanent about our current travel choices. Moreover, the evidence is clear. If we are to achieve national strategic outcomes – like decarbonisation – then we must harness such change positively such as new emerging technologies which are transforming the future travel demand and choice.

We recognise that future transport investment programmes must support the need for better outcomes. These include transport decarbonisation, health, inclusivity, biodiversity gain and a sustainable increase in economic productivity. The shift to this 'decide and provide approach' is essential to ensure our integrated transport network is fit for the future.

Our future travel scenarios show how the future travel needs of the North need to be accommodated, particularly in terms of preparing for significant increase in public transport and rail needed to enable growth across the North. This requires integrated solutions across a range of policy areas and sustained investment at a level of place.


CAF
331002

## Our strategic priorities across rail, road and local connectivity

Given the scale of these challenges, investment is required to support both pan-northern connectivity and local transport systems. That investment must recognise:

- Our rail network and wider connections must transform the access to opportunities for millions of people, recognising the need to move beyond the current crisis and take clear steps to create capacity for passenger and freight growth over a sustained period of investment

- Delivery of the full NPR and HS2 network is an essential part of growing our economy and decarbonising the network. This Plan reaffirms TfN's strategic priorities for rail including the need for commitment to our preferred NPR network which includes a new line from Liverpool to Manchester via Warrington, a new line from Manchester to Leeds via central Bradford and significant upgrades to the Hope Valley and East Coast Main Line routes to ensure effective services through to Sheffield, Hull and the North East

- The critical importance of the North's highway network to our economy and supporting our modern society. Roads are a multimodal asset and provide the public space we all use to move around, whether that be on foot, by bike, bus or car, as such they are an essential community asset. We need to choose how the space available is used in order to meet needs to decarbonise, maintain access for freight and encourage active travel and only focus investment where truly needed

- The importance of local connectivity and multimodal integration in providing door-to-door sustainable transport for people and goods. There is a need to invest in improving local connectivity, to help address the extent to which our current transport system too often acts as a barrier to opportunities and how this represents an opportunity to decarbonise transport

- We need to ensure we maintain and grow an efficient multimodal freight network by improving gaps in connectivity including to newly designated freeports, and enable growth in freight flows. Delivered holistically, this will allow the economy of the North to be more productive, efficient and sustainable while at the same time improving the environment, health and wellbeing of northern residents

- Increasing the North's international connectivity to perform on a global stage can attract and facilitate businesses and entrepreneurs to work together and reach customers and suppliers across the North, the UK and the rest of the world. This will encourage outward and inward overseas trade and investment, which will facilitate economic growth.

## A place based approach

The successful delivery of our strategic ambitions and headline objectives can only be achieved through a collective effort nationally, regionally, and locally. This can be achieved through effective transport planning and ensuring a strong golden thread through key policies and implementation at a national, regional and local level.
Our policy and place framework uses TfN's extensive evidence base and expertise to identify what policies might best support different types of places in the North to achieve our collective vision and objectives. Ensuring that pan-Northern connectivity and local transport systems can be designed in a complementary way to maximise the benefits to users.

## Implementation

Since being established in 2018, TfN has created a compelling reputation for clear forward thinking on transport issues, industry-leading technical expertise, local knowledge and relationships. The implementation of this ambitious and challenging Plan will require a concerted sustained effort across the North.

This Plan demonstrates the scale of change needed to deliver the required outcomes the North wants to see, as well as the significant challenges faced by the current state of the transport system. Creating a virtuous circle of investment leading to mode shift for people and goods, more efficient use of road and rail networks, and greater public transport patronage, while delivering better outcomes for the North's places and communities requires a fundamental change in approach.

The evidence base assembled within this Plan demonstrates how investment in the North's infrastructure contributes to achieving agreed outcomes on reducing carbon emissions, improving health and achieving sustainable economic growth. This will require, at a minimum, alignment of decision making in transport investment with that in energy systems and digital connectivity. TfN's ground-breaking work on Electric Vehicle (EV) charging infrastructure demonstrates how we can build strategic partnerships to affect change.

The Plan sets clear metrics through which progress on critical issues, such as accessibility, clean air, road safety and performance, can be measured. We are proposing to closely monitor trends in use of public and private transport for passengers and freight using the "right share" approach. We will work with our delivery partners, businesses, the transport industry and government to support the delivery of schemes, influence policy and ensure over the next parliament we are on track to deliver on our intermediate 2030 targets and long term 2050 objectives.

Tackling the transport challenges in the North will also require considerable reform of the transport system, and while significant progress has been made by TfN, government and local transport authorities (LTAs) since 2015, there is more to do.

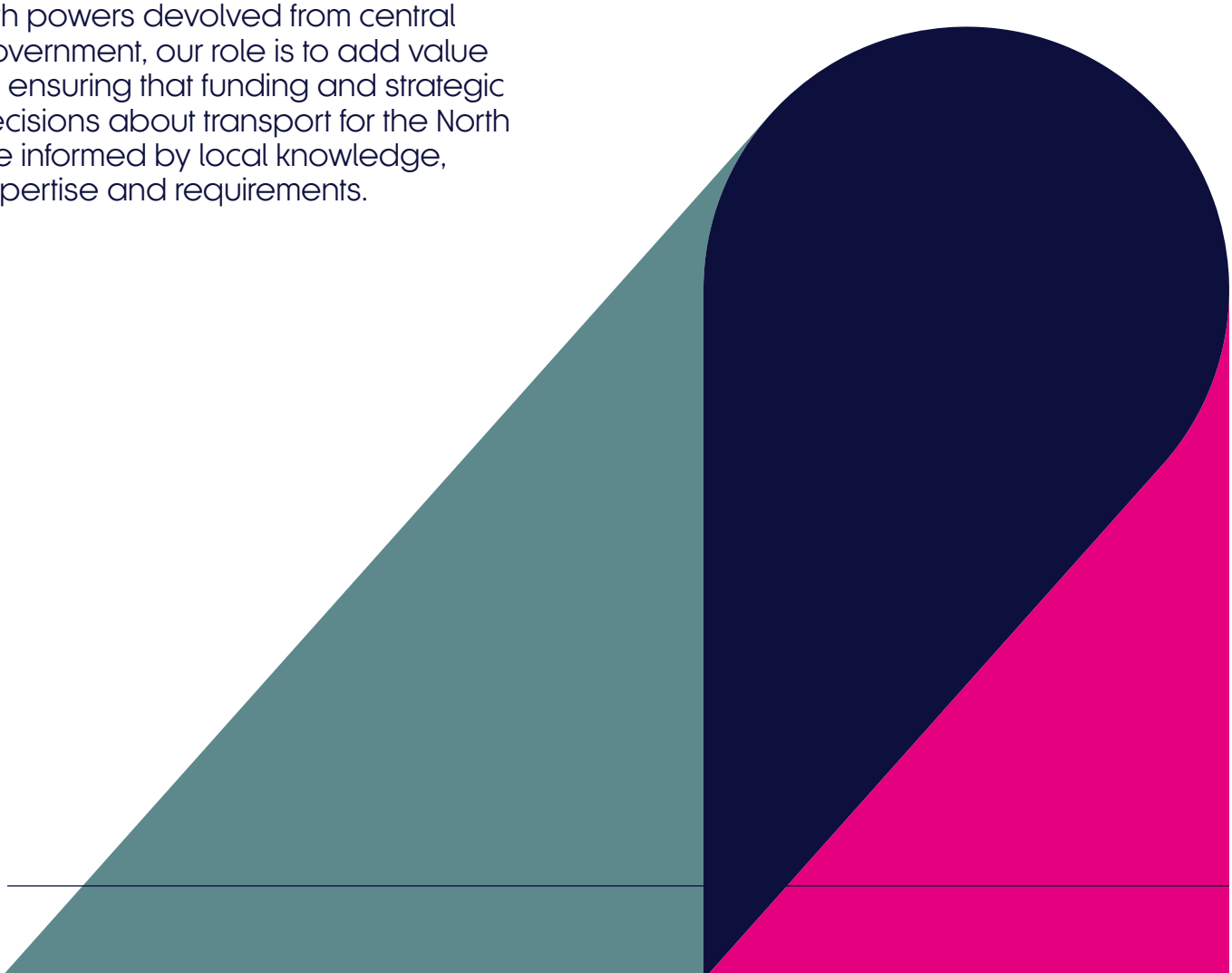
To achieve the agreed strategic outcomes for the North there is a need for targeted investment in transport, as identified in this Plan, combined with complementary policy and investment focused on education, health and on supporting key sectors of the economy. The Northern Powerhouse Independent Economic Review (NPIER) demonstrates how a consistent long-term public-sector approach to policy and investment would lock in private sector capital and generate a positive return on government investment through additional tax revenues and lower spending on health interventions and welfare funding by 2050.

To support strategic planning of transport as part of a systems approach, TfN recommends that a five-year regional indicative funding envelope is established, within which statutory advice on strategic infrastructure and service priorities is prepared and which complements simplification of funding at the local level. An indicative five-year funding envelope, accompanied by longer term notional envelopes and built into existing regulatory and statutory processes, would bring significant opportunities to accelerate decision making, reduce uncertainty and avoid duplication of effort at national, regional and local level.

# 2.

# About Transport for the North

Transport for the North (TfN) is the voice of the North of England for transport. We are a statutory body of elected and business leaders from across the North, who collectively represent the region's 16m citizens and 1.1m businesses. Complementing the work of existing **local transport bodies (LTBs)**, and with powers devolved from central Government, our role is to add value by ensuring that funding and strategic decisions about transport for the North are informed by local knowledge, expertise and requirements.



## 2.1 Our role as a statutory body

Established in 2018, our statutory role (as set out by Government) requires us to develop and implement a **Strategic Transport Plan (STP)** that communicates pan-Northern priorities to the Secretary of State for Transport and explains how we will act as a statutory partner in delivery of infrastructure and services on behalf of the North's 21 local transport authorities (LTAs).

We work at a regional level, focusing on improving strategic connectivity for and within the North. This STP sets out the case and priorities for better connecting the places and economic centres of the North to unlock economic potential, increase opportunity and decarbonise our travel choices. Our work explicitly recognises that it is the whole 'door-to-door' journey that matters for people and goods. For our transport systems to work efficiently and effectively, it is crucial that pan-Northern road and rail networks are well integrated with local roads and public transport, as well as walking and cycling networks. While interventions to support local roads, local public transport networks, walking and cycling will mostly be made at a local level, these can reduce congestion, help decarbonise our communities and enable access to pan-Northern transport networks.

This is why we work closely with local transport partners to help create a more integrated, healthy, and resilient overall transport system. We also work nationally with Government, other Sub-national Transport Bodies (STBs), the devolved administrations and North's cross-border authorities to ensure that investment in pan-Northern transport enhances connectivity across the UK.

## 2.2 Our stakeholder partnerships

### Department for Transport, National Highways and Network Rail

We are a partner of the **Department for Transport (DfT)** and provide statutory advice on strategic infrastructure priorities to the Secretary of State using powers defined under the Local Transport Act 2008. TfN was established with the general functions:

- **A** To prepare a transport strategy for its area
- **B** To provide advice to the Secretary of State about the exercise of transport functions in relation to its area (whether exercisable by the Secretary of State or others)
- **C** To co-ordinate the carrying out of transport functions in relation to its area that are exercisable by different constituent authorities with a view to improving the effectiveness and efficiency in the carrying out of those functions
- **D** If TfN considers that a transport function in relation to its area would more effectively and efficiently be carried out by TfN to make proposals to the Secretary of State for the transfer of that function to TfN
- **E** To make other proposals to the Secretary of State about the role and functions of TfN.

Jointly with DfT, we oversee rail services covering Northern and TransPennine contracts as part of the Rail North Partnership. We co-sponsor the Northern Powerhouse Rail (NPR) Programme which TfN co-designed with DfT and Network Rail. We also provide advanced analytical services to DfT in support of NPR business case and scheme development.

We work closely with **Network Rail** and contribute to long-term strategic planning for the railways in the North. Network Rail also participates in the Rail North Partnership, which helps ensure that service and infrastructure development are aligned. We are working closely with Network Rail, DfT and the Great British Railways Transition Team on the opportunities for reforming the rail system for both passengers and freight.

We work collaboratively with **National Highways** to inform and influence the Road Investment Strategy. National Highways is responsible for the effective operation, maintenance, and improvement of the Strategic Road Network (SRN) in England. Their objectives, performance indicators and targets are reviewed and agreed on a five-year cycle through the development of Road Investment Strategies.

A joint engagement framework and action plan identifies areas for collaboration and ensures that the views and objectives of TfN and National Highways are recognised and considered in the development and delivery of each organisation's respective plans. As Chapter Five sets out, the approach to the SRN complements that for the Major Road Network.

Our pan-Northern role means we are involved in many non-statutory partnerships to ensure we take a "systems approach" to transport planning. Our strategic partnerships, which we continue to maintain and develop to ensure our plans and those of our LTA partners are informed by evidence, include:

- Regional economic strategy and development, through the NP11 and northern local enterprise partnerships (LEPs) who represent the business perspective on the TfN Board. We are supporting regional economic development, the Northern Powerhouse Independent Economic Review (NPIER), decarbonisation, and green growth activities.

- Other pan-Northern bodies including Homes for the North, the Northern Powerhouse Partnership, the Northern Gas Network and other energy providers. We are represented on the Yorkshire Climate Commission, and have close links to bodies with a strategic interest in physical, digital and spatial planning.

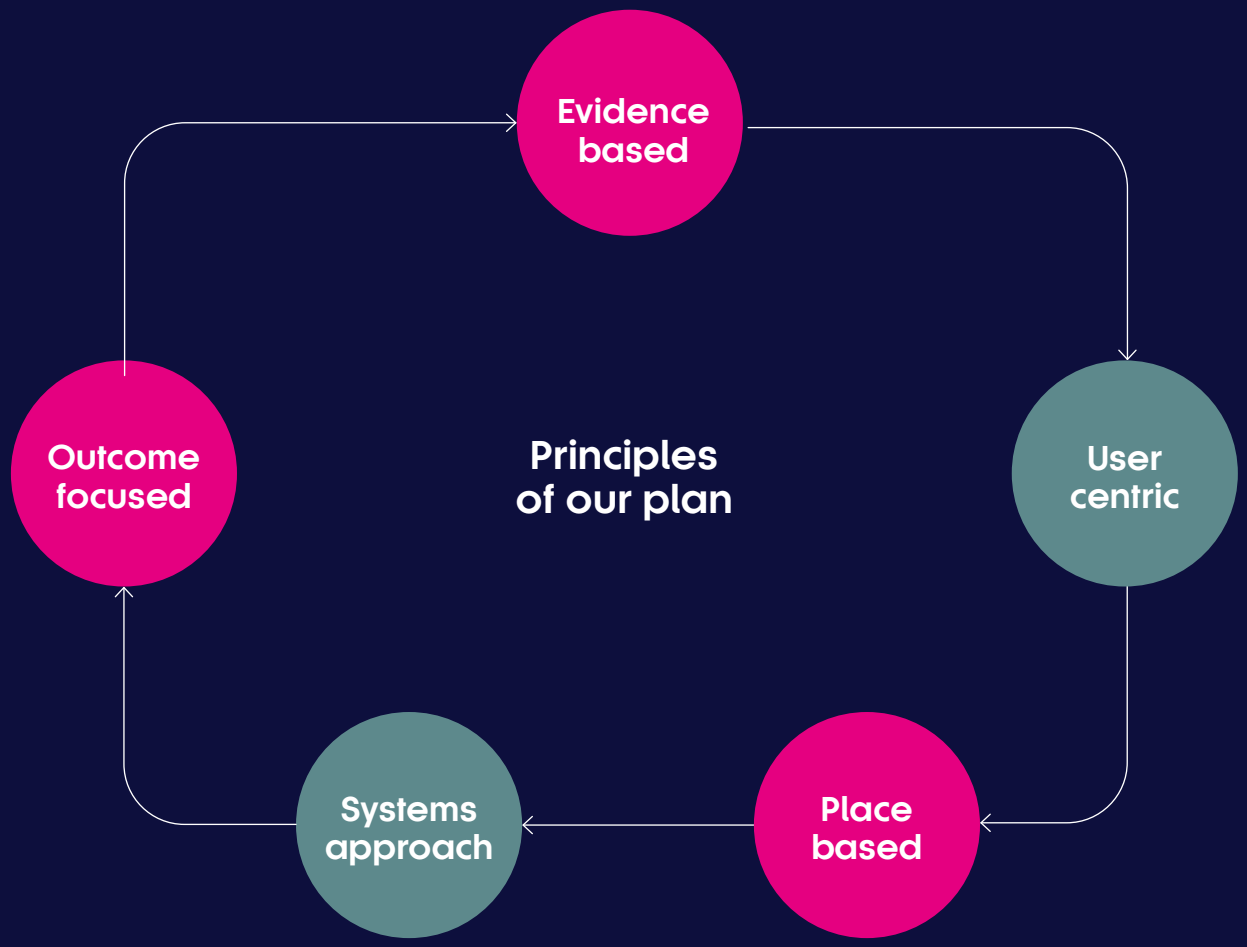
- Our UK wide role as the largest Sub-national Transport Body (STB), including our formal and strategic partnerships with Transport Scotland, Transport Wales and the other STBs across England. We have close links to the National Infrastructure Commission, Rail Industry Association, Logistics UK and Rail Freight Group.
  Our links to academics and research through the N8 and partnership with the Institute for Transport Studies as part of the Decarbon8 programme, as well as Herriot Watt and Durham Universities on Hydrogen and IPPR North on wider social issues. We established and chair the Northern Transport Academic Forum which brings together research interests to discuss key issues.

## 2.3 About the Strategic Transport Plan

Our Plan sets out the opportunities and challenges facing the North of England's economy, people and communities, and demonstrates how improved transport links can help the North achieve its true potential. The Plan recognises the North's diverse and unique people, places, transport infrastructure and business landscape. It sets out how better connecting the key economic centres across the North can transform economic performance, open opportunities for people, businesses and communities, and facilitate the rapid decarbonisation of our transport network while recognising the impact of our transport choices on the environment.

Investment in the transport network must be considered as part of the solution to a complex set of economic, environmental and social challenges. This is why we are outcome-focused and place-based in our thinking to ensure that the transport network of 2050 is planned and delivered as part of a coherent ecosystem. Transport can be a catalyst for change in people's lives, bringing opportunity and choice to communities and businesses. Our Plan therefore aims to maximise the opportunities of an integrated, decarbonised, and more productive North by delivering a modern, efficient, accessible, and affordable transport network. This Plan has been developed in response to that opportunity and is built on five principles:

Figure 2.1




**Evidence based**

Ensuring our plan and its asks are grounded in robust evidence.

**User centric**

Recognising that people and businesses need different things from the transport system.

**Place based**

Recognising that the North's geography is diverse and therefore the transport solutions available, scale and pace for change will vary.

**Systems approach**

Recognising that transport alone won't achieve our collective vision, so we need to work with a range of partners to find appropriate solutions and overcome barriers to delivery.

**Outcome focused**

Including a clear set of headline SMART objectives & targets / end states.

The Plan builds on the original vision in the 2015 Northern Transport Strategy and the first Strategic Transport Plan in 2019 of "a thriving North of England, where world class transport supports sustainable economic growth, excellent quality of life and improved opportunities for all" with a renewed focus on decarbonisation and social opportunity. This Plan builds on the evidence, analysis, strategy development and policy thinking we have done since that time, which is summarised in Figure 2.2 below.

**Figure 2.2: Hierarchy of TfN Strategies, Reports and Policy**

**Three "strategies"**


March 2023


Dec 2021


April 2023

**Three "mode specific reports" and the Future Travel Scenarios**


Dec 2020


Dec 2021


Nov 2022

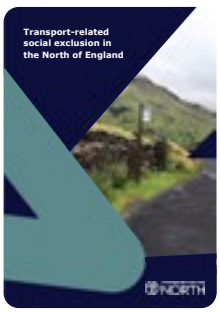

May 2023

**Policy positions and evidence**

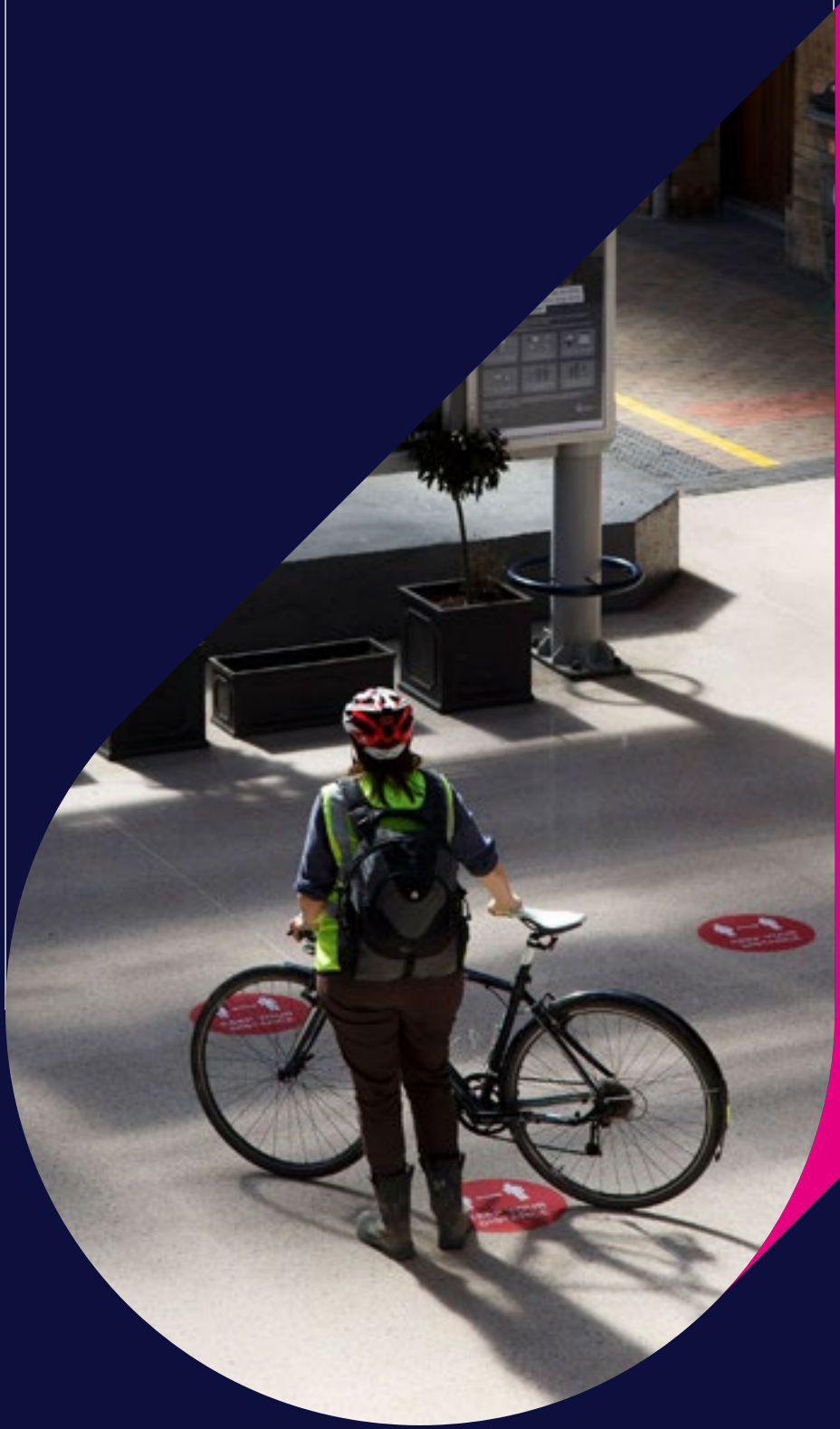

March 2022


May 2022


Sept 2022




Sept 2022



# 3.

# Our vision and strategic ambitions

## 3.1 Our vision

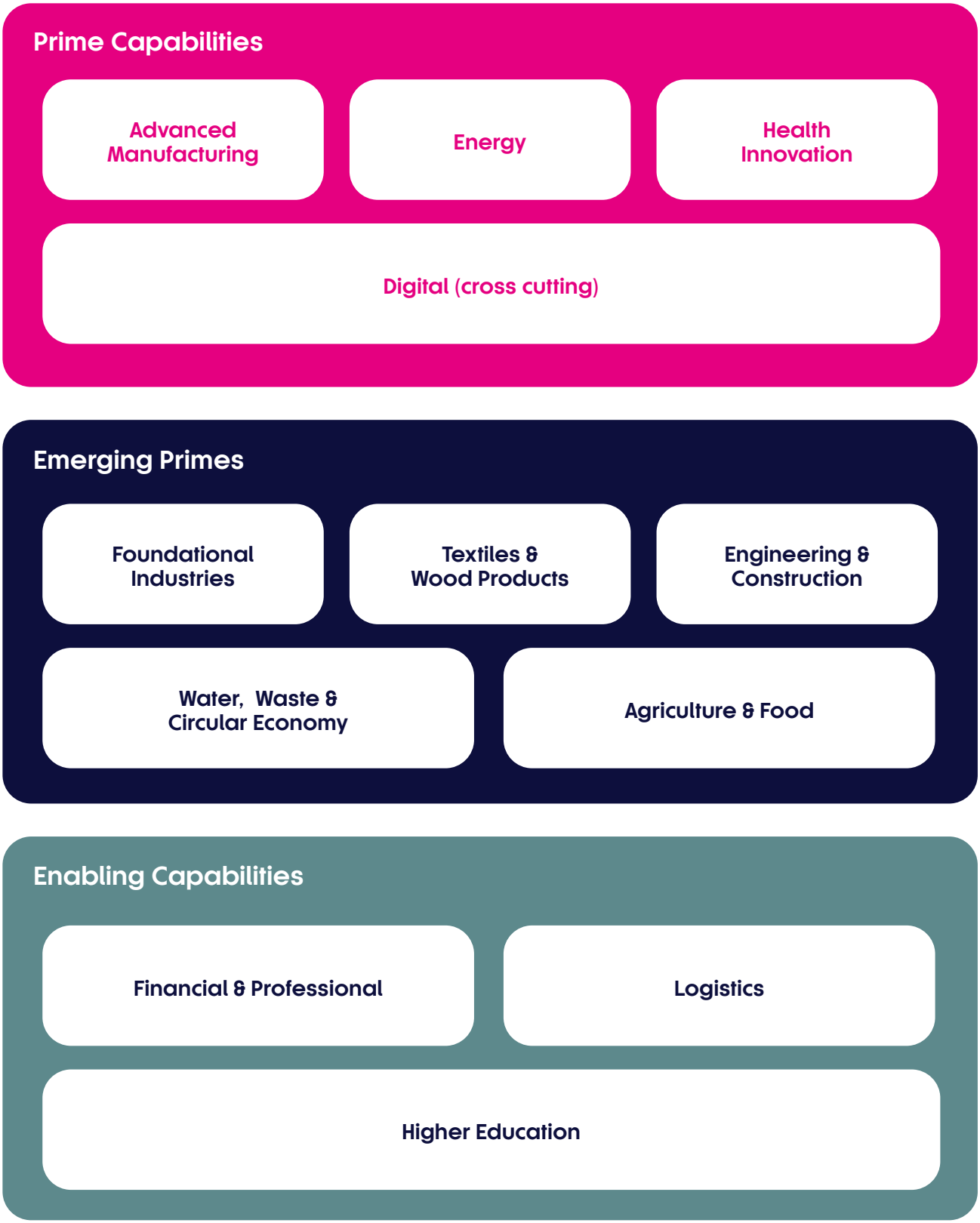
By 2050 the North of England will have become a thriving, socially inclusive region. Our communities, businesses and places will all benefit from sustainable economic growth, improved health and wellbeing and access to opportunities for all. This will be achieved through a transformed zero emission, integrated, safe and sustainable transport system, which will enhance connectivity, resilience, and journey times for all users.

Enabling the North to grow its economy, decarbonise its transport networks, and bring prosperity and wellbeing to its communities is a multi-decade project. It requires a clear, long-term, and sustained vision to frame the choices and investment decisions across future political cycles. Our vision and strategic ambitions have been informed by our extensive evidence base, including the 2016 **Northern Powerhouse Independent Economic Review (NPIER)**, which was our first strategic long-term assessment of the North's economy. This review identified seven key sectoral capabilities in the North that have the potential to support transformational growth through sustained investment in transport connectivity, skills, research and development (R&D), graduate retention, and inward investment.

The NPIER was instrumental in framing the scale of economic opportunity in our first STP. It provides the strategic economic context for this Plan, and is embedded in the transport plans and economic strategies across the region.

An update of the NPIER scenarios has been undertaken to support the development of this Plan. The new assessment confirms the opportunity from and continued importance of the seven "prime and enabling capabilities" of the North's economy, as well as emerging and wider sectoral strengths, including engineering and construction, food and agriculture. The North's foundational economy is also significant, estimated to currently employ 67% of the North's workforce and generating 63% of all economic output. The foundational economy describes businesses and organisations that provide essential goods and services, including transport infrastructure, services such as health and social care and food production.

**Figure 3.1: The North's economic capabilities as identified in the NPIER.**

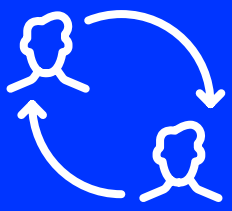


TfN's **Future Travel Scenarios**, which were developed and agreed with our partners, supports our adoption of the "decide and provide approach" to long-term strategic planning, building on the NPIER. These scenarios enable a better understanding of the challenges and opportunities ahead and therefore help inform the activities and outcomes needed to meet the vision and strategic ambitions in this Plan. For this reason, they are an integral part to TfN's decision-making and are used in conjunction with our analytical framework to help shape, test, and refine transport interventions and solutions with our partners.

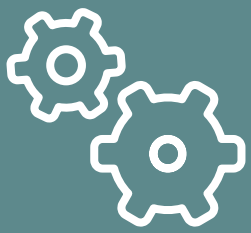
The scenarios consider plausible future uncertainties from today to 2050, including:

**National Environment Policy**

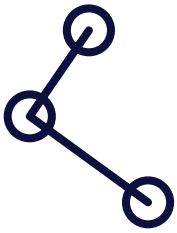
**Economic Growth**



**Behavioural Change**



**Technological Change**



**Spatial Planning and Economic Distribution**

By building an understanding of future uncertainty, we can explore the impact on the future travel patterns of people, businesses and goods. This, in turn, enables us to test the actions we might take, including potential policy levers. This approach aligns with the Government Office for Science Futures Toolkit[1].

**Table 1.1: TfN's four Future Travel Scenarios**

**Just About Managing**

This scenario sees a state of inertia, although this should not be taken as neutral. It sees a future where people do not alter their behaviours much from today, or give up certain luxuries, although there is a gradual continued trend towards virtual interaction. Economic growth continues at a moderate rate, but it is largely consumption-led and unequal, lacking agility and vulnerable to shocks. This scenario is led by markets, without much increase in political direction, with its biggest driver being economic.

**Digitally Distributed**

This scenario sees a future where digital and technological advances accelerate, transforming how we work, travel and live. In general, we embrace these technological changes and the move towards a distributed, service-based transport system. Long-term climate change targets are met, but there is slow progress in the short-term due to a general preference for individualised mobility over traditional public transport. This scenario is led by technology, with the biggest drivers being technical advances and a willingness to embrace mobility-as-a-service and shared mobility in the long-term.

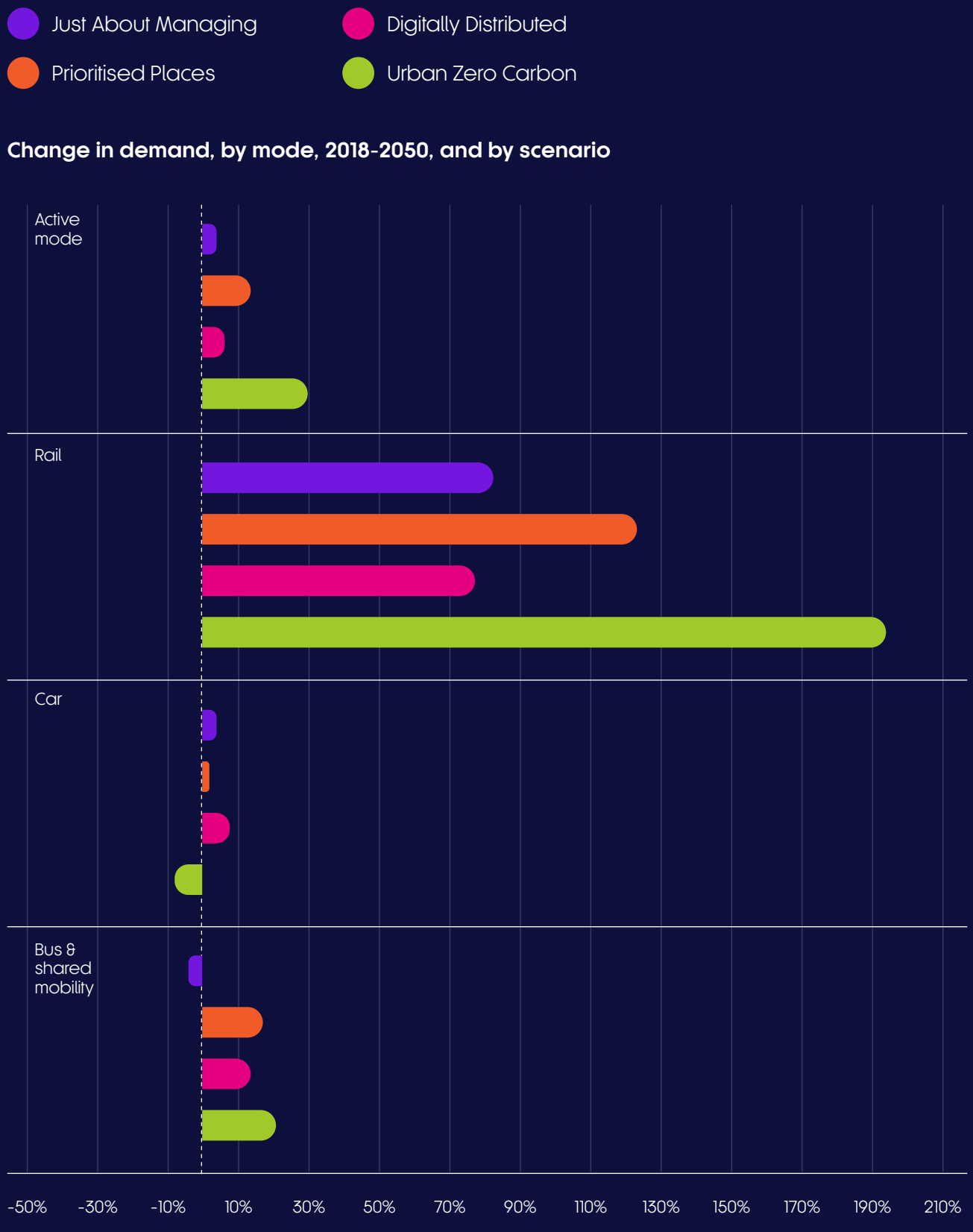
**Prioritised Places**

This scenario sees a significant shift in political and economic direction to ensure that no place is left behind. Every area, including cities, towns and rural and coastal areas, has a bespoke local economic strategy, supported by investment in local assets, specialisms and economic and social infrastructure. Community, localism and place-making across the North is applied to build a sense of local identity to improve local economies. There is a focus on work-life balance and social equity within and between places. This scenario is led by a change in priorities, with its biggest driver being the push for a fairer redistribution of economic prosperity.

**Urban Zero Carbon**

This scenario sees a significant shift in public attitudes towards action on climate change, and strong national Government response to meet it. There is a boost to economic productivity to levels consistent with the NPIER, primarily through a combination of urban agglomeration and place-making. Transport users demand and embrace publicly available transit and active travel options, as there is a blurring of the line between 'public' and 'private' with increasing shared mobility systems online. This scenario is led by attitudes to climate action and urban place-making, with the biggest drivers being strong Government policy and trends of urban densification.

## Figure 3.2: Change in demand, by mode, across TfN's Future Travel Scenarios (2018-2050)



The modelling results show the scale of change in how and why we travel that we need to prepare for, especially the need for improved pan-regional connectivity. This includes:

- Preparing for significant increases in rail travel between now and 2050 for passengers and freight
- Recognising that mode shift from car to rail for inter-urban trips will be essential for both our decarbonisation and growth ambitions. While the car is likely to remain a dominant mode for much of the North, particularly for rural communities, we must find the right balance that can work for different communities and places
- Our freight flows need to grow significantly under all scenarios, reflecting both the opportunity to make greater use of the North's spare aviation and port capacity, as well as the growth in demand under the NPIER scenarios

- Consistent with the NPIER, infrastructure, technology and service improvements alone are unlikely to achieve outcomes we need without significant national policy interventions and the right incentives in place to facilitate and encourage behaviour change
- We need to take a place-based approach to developing solutions. While connectivity can be a major enabler of change, the non-transport policy levers may be more important in certain situations and places.

## 3.2 Our strategic ambitions

Our vision is supported by three strategic ambitions for the North:

- → Transforming economic performance
- → Rapid decarbonisation of our transport network
- → Enhancing social inclusion and health.

Each ambition is transformational change for the North, requiring a combination of investment, policy change and behavioural shift to be achieved. To be successful, we must develop and agree holistic solutions across policy areas.

### 3.2.1 Strategic ambition: transforming economic performance

The North has a historical productivity gap with the rest of England. The NPIER identified the lack of agglomeration as a key weakness of the North's economy, and identified poor transport connectivity as a key barrier to creating integrated labour markets that can drive sustainable productivity growth. Since 1981, the North's economic value per person (measured as GVA) has been typically 10-15% below the average for the rest of England, excluding London. The most recent available data reveals that gap remains 10.6% below the rest of England average (excluding London).


The updated NPIER scenarios align to the work of the 2070 Commission[2], which concluded that addressing regional inequality through creating a stronger North benefits the whole UK economy.

The NPIER recognises the fundamental need for transport investment to provide faster passenger and freight connections between the North's economic centres, as well as to other parts of the UK and international gateways, to unlock sustainable economic growth. However, it also highlights a widening of the productivity gap between the North and other parts of the UK since 2016. The challenge has got bigger, but the potential opportunity remains as strong as ever. Alongside a baseline "business as usual" scenario in the updated NPIER, the four other scenarios are:

- **A** A net zero scenario with a strong focus on green innovation and growth
- **B** Technology transformation, supporting research and innovation and entrepreneurialism and technology adoption
- **C** Inclusive productivity, interventions to support the health, well-being and skills of the Northern workforce
- **D** Development supply, designed to boost the supply of commercial property and domestic housing.

When modelled together (in the fully transformational scenario), if adopted, the ambition for the North surpasses the scale of the ambition for GVA growth and job creation in the 2016 work and also the level of productivity by 2050 of the rest of England (excluding London). This would result in an economy in the North that would be £118bn per annum larger by 2050 than current forecasts. Significant additional investment could result in strong economic and fiscal returns to the UK economy and the public purse. The return on investment, excluding the wider societal benefits of achieving net zero, would be around 2.8 times the investment, with additional revenue back to the public purse of around £720bn.


Dec 2021

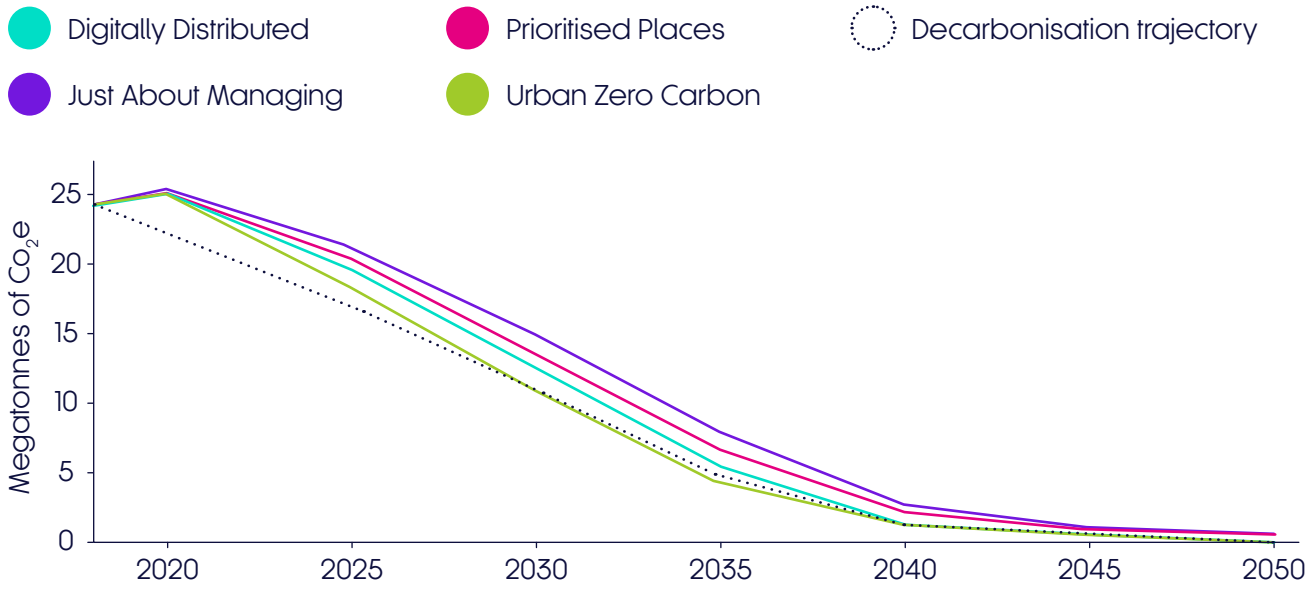
### 3.2.2 Strategic ambition: rapid decarbonisation of surface transport

We are committed to a regional near-zero carbon surface transport network by 2045. The North is ambitious in tackling carbon emissions, and wants to go further and faster than Government policy.

The benefits of transport decarbonisation extend far wider than reducing greenhouse gas emissions and the effects of climate change. Decarbonising our transport network can drive clean economic growth, as well as unlocking health, natural capital and wider social value benefits.

TfN and our partners have committed to a regional near-zero carbon surface transport network by 2045, allowing about 300 mega-tonnes of $CO_2$ equivalent (e) to be emitted by our close-to-zero date of 2045. We have set interim milestones including a 56% reduction in emissions by 2030 and a 96% reduction by 2040. Our projections show that without immediate action to reduce surface transport emissions faster than our current rate, we will exceed our carbon budget from around 2030. The level of commitment that will be needed to achieve our trajectory, in relation to the key areas of transport decarbonisation policy, is highlighted within our decarbonisation strategy[3].

**Figure 3.2: Total emissions by scenario compared to the decarbonisation trajectory**




Many of our partner authorities have committed to achieving close to zero or net zero carbon targets prior to 2045. West Yorkshire Combined Authority and Greater Manchester Combined Authority have committed to a 2038 whole economy net zero target, York and North Yorkshire Local Enterprise Partnership by 2034, while Leeds City Council and Blackpool Council have adopted 2030 dates.

Taking a systems approach to decarbonisation means we make best use of existing infrastructure and systems, ensuring the prudent use of natural resources and minimising the embodied carbon in our system. Where new infrastructure is required, it will be important to maximise the re-use and recycling of materials. While the North wants to go further and faster, that must be delivered in a fair way, reducing levels of car dependency and facilitating modal shift to public and active travel modes. It is why this Plan provides a policy framework for interventions that can reduce private vehicle mileage in the context of place, to achieve the societal and environmental outcomes a prosperous North requires.

Furthermore, we must continually reassess how carbon and climate change effects are considered within scheme appraisal to ensure sufficient value is placed on these factors. A zero-carbon transport network must be at the core of public policy making and investment decisions. We want to ensure that new infrastructure is designed to minimise any adverse impacts on the natural, historic and built environment. It needs to deliver an environmental net gain through aiding local nature recovery, improving our green and blue infrastructure and developing nature-based solutions for reducing emissions and increasing our infrastructure's resilience to the effects of climate change, recognising that access to the natural environment can improve physical and mental health too.

### 3.2.3 Strategic ambition: enhancing social inclusion and health

This Plan must deliver for everyone who lives and works in the North by delivering better access to opportunities, key services, the natural environment and community life. 3.3 million people in the North of England live in areas in which there is a high risk of transport related social exclusion (TRSE). This is 21% of the population of the North, compared with 16% of the population in the rest of England. These issues have a fundamental affect on everyday life, such as limiting access to good quality work, education and healthcare services, and, by placing excessive time, monetary and wellbeing costs on people.[4]

Bringing the North's transport system into line with other parts of England will reduce the number of people living in areas at high risk of TRSE by one million and reduce the number of people living in areas with a very high risk of TRSE by 370,000 by 2050.

Our socially inclusive transport strategy has helped us understand the types and levels of transport infrastructure and services that are needed to deliver an inclusive transport system. We need greater investment and faster improvements in areas where there is a high TRSE risk. Our research tells us that high levels of car dependency is the key driver of TRSE in the North. This has been exacerbated by declining bus service provision, which has reduced the travel choices for the most vulnerable people in our communities. This trend has been amplified by the impacts of the COVID-19 pandemic, which has dampened demand for (and therefore the commercial viability of) many rural and some urban bus services.


April 2023

The impacts of TRSE include the cost and time entailed in using the transport system, the linked stress and anxiety and how it acts as a barrier to jobs, training and healthcare. Together, these impacts can contribute to a vicious cycle of poverty, isolation and poor access to basic services.

To address TRSE we need to transform the quality, availability and cost of our local public transport services, alongside the rollout of safe, convenient, and accessible routes for walking, cycling and wheeling that connect communities to key destinations. A co-ordinated approach is required to ensure strategic and local transport investment programmes are aligned towards this aim, including complementary planning and digital connectivity policies. Equally, more opportunities for safe active travel, brings not only health and wellbeing benefits from more physical activity, but also greater economic opportunities. If people feel safer on a bus route or riding their bicycle to work, it could encourage behaviour change and open up more employment options.

TRSE is geographically concentrated, reflecting the combination of poor access to key destinations with the transport options available, high levels of inequality of access between transport modes, and high levels of vulnerability to social exclusion among the population. That risk is greatest in rural towns and urban fringes, with 35% of those living in these areas at a high risk of TRSE. Smaller cities and larger towns, outside of the major conurbations, have elevated levels too. Fragmentation, unreliability, and the affordability of public transport are contributory factors, with poor conditions for active travel, meaning these places see more forced car ownership.

As well as geographical concentrations, TRSE is also concentrated among specific population groups. Those on low incomes and in insecure work, people with disabilities and long-term health conditions and carers are particularly likely to be affected. These populations face greater constraints on their transport choices, greater consequences when their journeys go wrong and often need to travel in ways that differ from the best served commuter routes.

Our ambition is to reduce the inequalities entrenched in our current transport system, and to move to a system that delivers for all areas and communities across the North. The place-based approach that underpins this Plan is key to reducing TRSE across the North – with a framework of policy and investments required to tackle social exclusion at a local user level.

This means eliminating transport poverty, targeting investment in parts of the North with the greatest need, and enabling modal shift away from car dependency and towards enhanced public transport and active travel options. These enhancements require a combination of improved coverage, frequency, affordability and reliability, the transformation of car-dominated environments, and ensuring that the system is accessible from end to end. This will deliver sustainable increases in income levels, longer and healthier lives, and higher levels of community integration and wellbeing.

A linked challenge is the need to reduce the health inequalities and poor health outcomes linked to the transport system, which disproportionately impact deprived areas and communities. We want to eliminate harmful levels of nitrogen dioxide pollution on the major roads network, so removing the need for air quality management areas linked to nitrogen and particulate pollution from transport, transforming levels of uptake of active travel, and eliminating deaths and serious injuries on the network. This will address the key drivers of poor health that come from the transport system, delivering improvements to the deprived areas and communities that are currently most impacted.

## 3.3 Our connectivity priorities

The North has several strong economic, social and environmental assets that are inter-linked and inter-dependent, so we need them to work together to realise the opportunity for the North and the wider UK. Achieving transformational growth that is socially inclusive and meets the legal requirement to decarbonise the economy will require a strong focus on green innovation and growth, technological transformation, labour market participation, wellbeing and skills.

However, as the evidence shows, our current transport system is holding us back. Poor connectivity is constraining the movement of people, goods and services around the North and with other parts of the UK. While at a local level, our transport networks do not provide our cities, towns and rural communities with sufficient access to jobs, health and leisure without owning a private car.

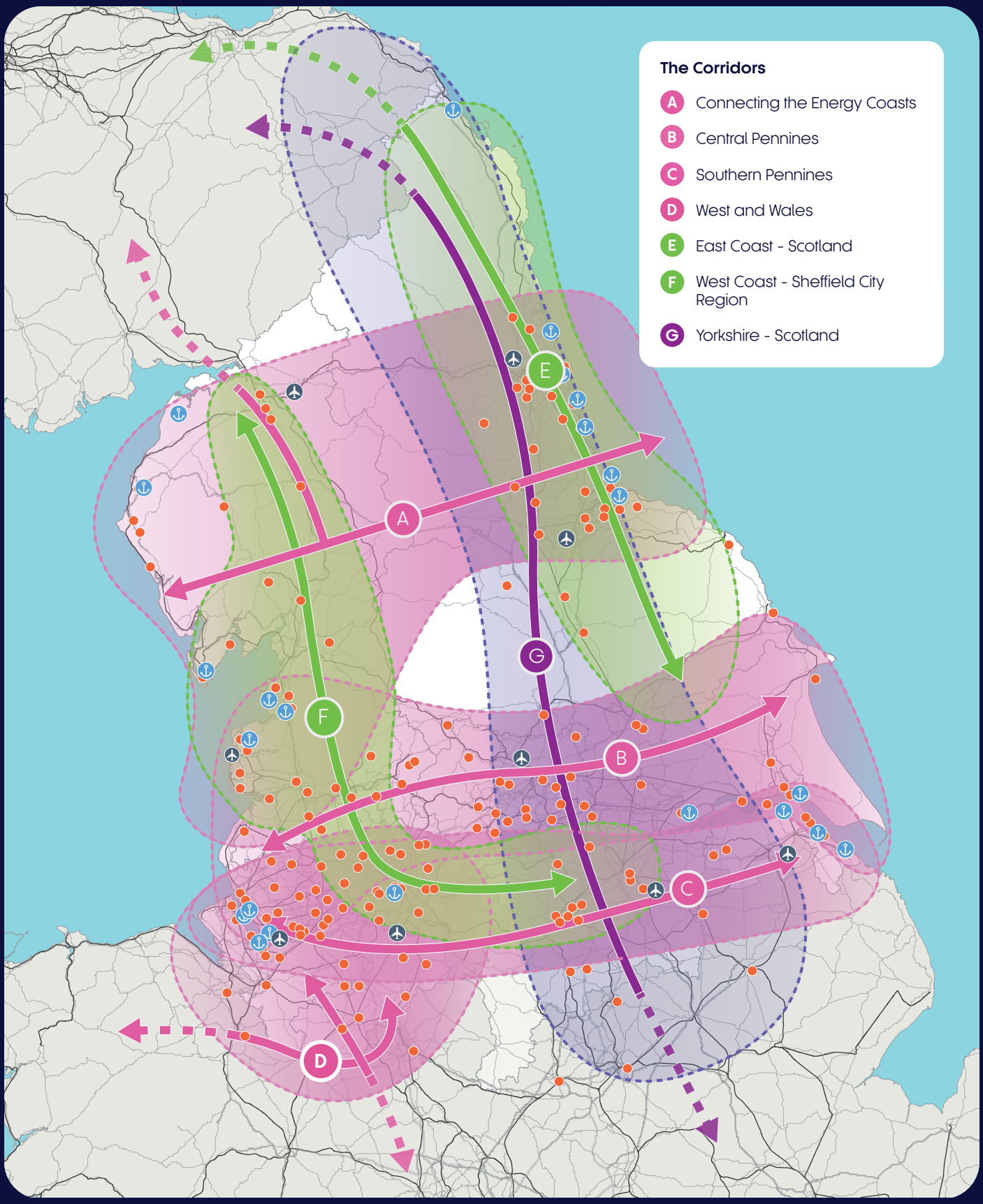
To achieve our vision and strategic ambitions, we need to address these connectivity challenges by creating a transport system for the North that enables:

- Strong interdependent and integrated labour markets, working collectively to drive up productivity and growth through agglomeration
- Fast, frequent, and reliable connections between our economic centres for goods, people, and business; with equally strong outwards facing connections to other parts of the UK and to our international gateways
- Policy changes that will accelerate the decarbonisation our transport network; as well as reduce car dependency both within and between places
- Safe, reliable and accessible public transport networks, both inter-city, intra-city and locally to open access to opportunities for all communities across the North.

**TfN has three connectivity priorities:**

- Pan-Northern connectivity
- Connectivity between the North and other parts of the UK
- Local connectivity within places.

**Connections across the North.** We have identified seven Strategic Development Corridors (SDCs) which connect communities to the key economic assets and clusters in a sustainable manner.



Each corridor represents an area where our evidence identifies investment in transport infrastructure will unlock and enable transformational economic growth – interlinking Local Transport Plans with regional, national and international connectivity.

Our SDCs are individually designed to meet the needs of people and businesses from a regional perspective. They present multimodal economic ecosystems that, with major multimodal transport investment, are best placed to deliver transformational growth according to our evidence base. This approach means TfN and partners can maximise the benefits of any significant new strategic infrastructure investment, ensuring that the pipeline of transport interventions aligns with national policy, and local transport and spatial plans including housing.

| Stragic Development Corridor | Assets connected |
|---|---|
| **Connecting the Energy Coasts** | – **Low-carbon energy and research assets**<br>– **Visitor destinations** |
| **Central Pennines** | – **Major economic centres**<br>– **Aerospace manufacturing cluster**<br>– **Ports**<br>– **Airports** |
| **Southern Pennines** | – **Major economic centres**<br>– **Visitor destinations**<br>– **Ports**<br>– **Airports**<br>– **Low-carbon energy and logistics (e.g. Energy Estuary in the Humber)** |
| **West and Wales** | – **Economic centres and assets**<br>– **International and key national transport hubs** |
| **East Coast Mainline – Scotland** | – **Advanced manufacturing clusters**<br>– **Logistics assets**<br>– **Energy industry** |
| **West Coast Mainline – Sheffield City Region** | – **Advanced manufacturing clusters**<br>– **Visitor destinations** |
| **Yorkshire to Scotland** | – **Economic centres and assets**<br>– **Airports**<br>– **Rail hubs**<br>– **Intermodal freight terminals** |

In advising the Secretary of State, TfN will focus on aligning investment using these corridors.

## Connections to and through the North with the rest of the UK

As well as improving pan-Northern and local connectivity, in order to realise the North's economic potential we must also ensure we are performing on the national and global stage, making it easier and more attractive for businesses and entrepreneurs to work together, and reach customers and suppliers across the North, the UK and the rest of the world.

TfN recognises the importance of our cross-border communities and economic areas, as highlighted through many of our SDCs, which extend into Wales (Cheshire, Warrington and Liverpool), Scotland (with Cumbria and Northumberland), and the Midlands (South Yorkshire, East Riding, Lincolnshire and Greater Manchester). The North is unique in having direct surface and sea connections with all three other countries of the UK, as well as providing the conduit for much of the traffic and goods that come from Scotland, Northern Ireland and north Wales. Tackling key northern bottlenecks and building capacity for growth can unlock wider benefits for Scotland, Wales, Northern Ireland, the Midlands and other English regions.

The Union Connectivity Review (UCR) has shown how improved transport connectivity across the UK can support economic growth and quality of life in all parts of the UK. Like our SDCs, the UCR supports a multimodal corridor-based approach for network planning, connecting the major cities, economic regions, airports and ports across the nation. TfN supports the recommendation of the UCR to create a UK wide multi-modal strategic transport network.

## Local connectivity needs

Our previous STP outlined the importance of local connectivity and multimodal integration in providing door-to-door sustainable transport for people and goods. There is a need invest in improving local connectivity and how this helps address the extent to which our current transport system too often acts as a barrier and how this represents an opportunity to decarbonise transport.

There is also a clear need for public transport modes to work together in an integrated way that creates a genuinely attractive alternative for car use for a wide range of journeys. The importance of investing in surface access to international gateways for passengers and freight, recognising our ports and airports as key economic assets and the need to align investment across our transport system to achieve an integrated, affordable and connected network. That requires a mix of technology, behavioural changes and mode-shift solutions.

# 4.

# The case for change

## 4.1 The North today

To successfully plan for our region's future and unlock its full potential, we must first understand how it looks today. The North of England currently has over 15.6 million people[6], 23.2% of all people in the UK. The North is a hugely diverse region in terms of both built and natural environments, as well as the types of communities and businesses that are found here. It is home to some of the largest conurbations in the UK, as well as large rural areas, with a mix of communities of diverse backgrounds and circumstances found in both. Diverse places and communities means diversity of transport-related needs, challenges and opportunities.

The North has outstanding natural assets and physical geography, as well as being home to a wide range of valuable landscapes, townscapes, coastlines and cultural heritage features. It has five of the UK's 15 national parks, five UNESCO world heritage sites, 170 listed blue flag beaches, 309 registered parks and gardens, over 5,000 scheduled monuments and nearly 70,000 listed buildings. Large areas of ancient woodland can be found in the North, particularly in Cumbria, the Peak District and North York Moors. The North's cities and historic towns are renowned for their culture, heritage, sport, leisure, and events offer. The North boasts several cities of culture including Liverpool (European Capital of Culture 2008 and Eurovision host 2023), Hull (UK City of Culture 2017), Leeds (Year of Culture 2023) and Bradford (UK City of Culture 2025).

The Pennines play a defining role in the region's physical and economic geography, creating the dramatic landscapes of our national parks and areas of outstanding natural beauty (AONBs). They also shape the North's polycentric economic structure, its transport networks and its links to other parts of the UK. The North's towns and cities are almost unique in their size and spatial proximity when compared to concentrations in other countries . Indeed, the North of England is arguably one of the most polycentric regions in Europe. Furthermore, with the Pennines acting as a geographical barrier to road and rail routes, the region's physical geography splits it into east and west.

## The North's people typology

| **Segment** % of the North's population | **Key demographics** | **Key property / geography characteristics** | **Key travel characteristics** |
|---|---|---|---|
| **Rural Residents** 8% | Older, married, better educated. Working in primary industries. | Rural, less dense, detached houses. | High car ownership and car commuting. |
| **Small Town Suburbs** 13% | Older and without children. | Outside metropolitan areas. Detached/semis majority owner occupied. | Travel more, travel further, less public transport. Greater car ownership & travel further by car. Significantly less bus. |
| **Urbanites** 15% | Employed full-time in middle occupational roles. Families with children & couples with no children. | Smaller towns and outer fringes of larger cities. Semis and terraces, majority owner occupied. | Travel more, travel more by rail, less bus. Own car and greater propensity to commute by rail. |
| **Hard Pressed Living 1** 13% | Families with children. High percentage with no qualifications. Working in manufacturing. | Smaller towns and outside metro areas. Terraces houses and semis - around half rented. | Travel less, shorter journeys, considerably less by rail but much higher bus. Greater car ownership. |
| **Constrained City Dwellers** 9% | High percentage singles, divorced or widowed. High percentage with no qualifications, unemployed and long-term sick. | Densely populated, large towns and cities. High percentage social rented & flats. | Fewest trips, shortest distance, much more bus, much lower rail. More than 50% no car. High walking/ bus commute. |
| **Inner City Cosmopolitans** 3% | ~50% students. Young, well educated, single. | Dense inner cities, private rented flats. | Significantly above average rail. Low car usage and ownership - almost 50% no car. |
| **Multi-culturals** 11% | High percentage families with children. Younger with more children in households. | Larger towns and cities. Around half rented. | Travel less, shorter journeys. Much higher bus. Almost 50% no car. |
| **Metro Suburbs** 13% | Older, employed in high occupations. More likely to be employed full-time and aged 45-59 | Outer suburban areas of metropolitan areas. Majority owner occupied. Semis/ detached. | Travel more & further by car and rail. Much lower bus. Car ownership higher. More likely to have 1-2 cars in household and travel to work by car. |
| **Hard Press Living 2** 15% | Families with children. Lower occupations in public admin & education. Relatively high percentage no qualifications. | Inner suburbs and small towns within metropolitan areas. Approximately half owner-occupied, living in terraces of semis. | Travel less and shorter distances. Slightly higher rail and much higher bus. ~30% no car. Commute more likely by bus & rail. |

Source: TfN's User Insights into pan northern travel report (pen portraits), February 2019, available here

The following section introduces **fictionalised personas** for each of the North's nine distinct people types. The personas have been developed to illustrate and bring to life the key characteristics of each people type. They are based on data and evidence from TfN's User Insight research which provided the basis for TfN's people typology.

## Rural residents

Malcolm, 65, lives with his wife in a detached house in a hamlet a short drive away from Appleby-in-Westmorland in Cumbria. Malcolm has recently retired after working in forestry for most of his working life. His wife continues to work part-time as a mental health support worker. Malcolm experiences a lot of aches and pains and is not always able to walk long distances, so relies mostly on driving for everyday journeys, as does his wife. The couple are concerned about the rising cost of motoring but continue to rely on their car to get around, as the local bus services are very infrequent, and so feel expensive and much less reliable than travelling by car. Malcolm would like to socialise more now that he is retired but feels somewhat limited by the remoteness of their location and being dependent on the car to get around. The couple usually opt for the car for longer distance journeys as it is the mode of travel that they are most familiar with.

## Small town suburbs

Jane, 53, lives with her husband and daughter (who is back home after finishing her degree) in an owner-occupied semi-detached house in Stockton-on-Tees. She works full-time as a medical secretary in a GP surgery and travels to work by car. She is busy balancing her job, looking after the household, as well as having quite a busy social life. She is often out in the evenings and weekends, and goes on longer trips by car to Newcastle and Leeds to go shopping and to visit family members and friends. Locally, she usually travels around by car, although sometimes also uses taxis and very rarely buses. She feels that local buses and trains for longer journeys are too expensive and less comfortable than travelling by car.

## Hard pressed living 1

Jamie, 30, lives in a rented terraced house in Hull. He has two young children who live with their mother but often come to stay over. He works as a factory operative and travels to work by car. He also uses the car when taking the children out for the day as for him this is the most convenient, comfortable and low-cost option. He occasionally travels by bus when he is on his own and meeting up with friends, but generally tries to avoid having to get the bus if possible. He rarely goes on longer-distance trips outside of his local area, except occasionally to visit family in other parts of Yorkshire.

## Urbanites

Laura, 34, lives with her wife in an owner-occupied semi-detached house in Harrogate, North Yorkshire. She works full-time as a project manager and travels to Leeds for work by rail once or twice a week, working from home the rest of the time. Her wife works full-time as an accountant and travels to work by car, while also regularly working from home. The couple have a busy social life and often go out in the evenings and at weekends, sometimes meeting up with friends or family. They often travel by rail for longer distances to go on city breaks or to meet with friends living in different parts of the country. More locally, they travel almost everywhere by car and rarely use buses. They are quite reliant on their car despite experiencing congestion and high parking costs, although they sometimes walk for very short trips.

## Constrained city dwellers

David, 49, lives in a social rented flat in Newcastle. Over the last few years, he has worked on and off in customer service roles but is not working currently due to increasingly poor health.
He lives alone but has some family members living in and around the city. He is financially under pressure and increasingly relies on welfare support to help ends meet, even when he is in work. He does not own a car, and predominantly uses buses and the metro to get around the city, though he finds public transport fares very expensive. For these reasons, he travels very little overall and feels constrained in the transport options available to him.

## Multiculturals

Zarah, 32, lives with her husband and three primary school-age children in a rented terraced house in Preston, Lancashire. She has a part-time clerical job and usually relies on buses to get to work, as she is not a confident driver, and the family don't currently own a car. Zarah's husband works in retail on the outskirts of the town and travels to work by bus, or sometimes gets a lift from a colleague. He recently decided to sell his car as it was getting too expensive to run. Zarah has parents and siblings living nearby so is sometimes able to get lifts from family members, however she feels the lack of a car prevents her and her husband from doing many activities such as going on days out with the kids.

## Inner city cosmopolitans

Kemi, 22, lives in a rented flat in Sheffield with a flatmate. She is in her final year of studying for a law degree and she also works part-time in a shop. She doesn't own a car and usually gets around by walking and cycling, or occasionally taking the tram or bus for journeys slightly further afield. She frequently goes on long-distance rail trips to visit friends in other cities across the country, or to visit her family in London. She finds long-distance rail travel almost prohibitively expensive though, so she always buys tickets several weeks in advance and uses her 16-25 Railcard. After completing her training, she would be willing to move to a different city for the right job opportunity.

## Hard pressed living 2

Danielle, 27, lives with her young son in a rented terraced house in St. Helens. She works full-time as a make-up artist from her home-based studio. She doesn't own a car and relies on walking or buses to go shopping and visit family and friends who live nearby. She finds the local buses expensive, but a necessity to get around locally. Her days are busy with work and childcare, so she doesn't spend much time travelling long distances for leisure purposes, her free time is usually spent exercising or taking her son to the park. Finances are always an issue, and she is motivated to expand her business to be able to earn more and provide for her son.

**Metro suburbs**

Mark, 44, lives with his wife and two teenaged children in an owner-occupied detached house on the outskirts of Bury. He works in IT and used to regularly commute to Manchester by car for work, however, he now mostly works from home. Mark's wife works as a pharmacist and uses a car to travel to work. Despite Mark no longer needing a car for commuting purposes, the family have retained two cars, as their daughter is currently learning to drive. They regularly travel by car to go on days out at the weekends, and to visit family members. They also often travel by rail for longer distances on trips to other parts of the country. Mark and his wife rarely use buses, and rarely walk or cycle, apart from occasionally walking or cycling for exercise purposes.

## 4.2 The North's economy

In 2020, the North contributed almost £368bn Gross Value Added (GVA), equivalent to almost 19%, to the UK economy[9]. Over the last decade (2010 to 2020) the North's economy has grown by over £83bn GVA, and the region continues to contribute strongly to the UK economy.

The region is home to around 1.1 million businesses[10], and the number of businesses increased by around 5% or 50,000 in real terms between 2015 and 2021. In that period, the North's growth in total businesses outperformed the rest of the UK.

Employment creation has been strong over the past decade, with around 750,000 jobs added to the economy since 2012, and employment is expected to continue to grow in the coming decades. At present 7.25m people are in employment across the North[11]. TfN's research on labour markets and connectivity shows the limited access to skilled employment opportunities faced by many Northern graduates, compared to the millions of opportunities within the London and South East labour markets. According to 2021 data, just 37.4% of the North's population are qualified to level four and above, compared to an average of 43.5% across England as a whole. Employment growth may have been strong in recent years in the region, but many of these jobs are in relatively unproductive and low-wage sectors such as accommodation, food, service and hospitality along with parts of the care sector.

The North's economic strengths, as captured in the NPIER, are four prime and three enabling capabilities. These are highly productive and highly skilled sectors that with the right investment could deliver stronger growth and even higher productivity.

**Figure 4.1: The prime and enabling capabilities of the North**

**Prime capabilities**

### Manufacturing

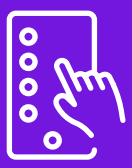
The North has strengths in advanced manufacturing, including through highly productive, automated and digital manufacturing techniques and processes. There is also a strong presence of automotive manufacturing in the North. These include expertise in textiles, research and design, and metallic and non-metallic production processes.

### Energy

More than 40% of England's energy is generated in the North, and in 2015, the North generated 31% of the UK's total renewable energy. The North's energy strengths include offshore wind, nuclear research and processing, new technologies, including biomass and hydrogen and electricity distribution. Developing new technologies for energy security, production, distribution and storage is also crucial.

### Health Innovation

The North has a strong health innovation presence, with pioneering clinical research particularly in life sciences, cancer and ageing.



### Digital

The North has strengths in cognitive computation, simulation/modelling, financial technology, cyber security, high performance computing, data analytics (big data) and media. Seven of the UK's 27 key tech clusters are in the North.

## Figure 4.1: The prime and enabling capabilities of the North (continued)

**Enabling capabilities**

### Financial and professional services

This sector provides key business, legal, insurance and financial services that support the North's prime capabilities and perform important day-to-day functions which keep the wider economy functioning.

### Logistics

Through significant private sector investment and innovation, airports, ports, and wider logistics are delivering a more efficient Northern infrastructure. The North has existing capacity to relieve demand, drive economic growth and enhance Great Britain's international connections and trade links.

### Education (primarily higher education)

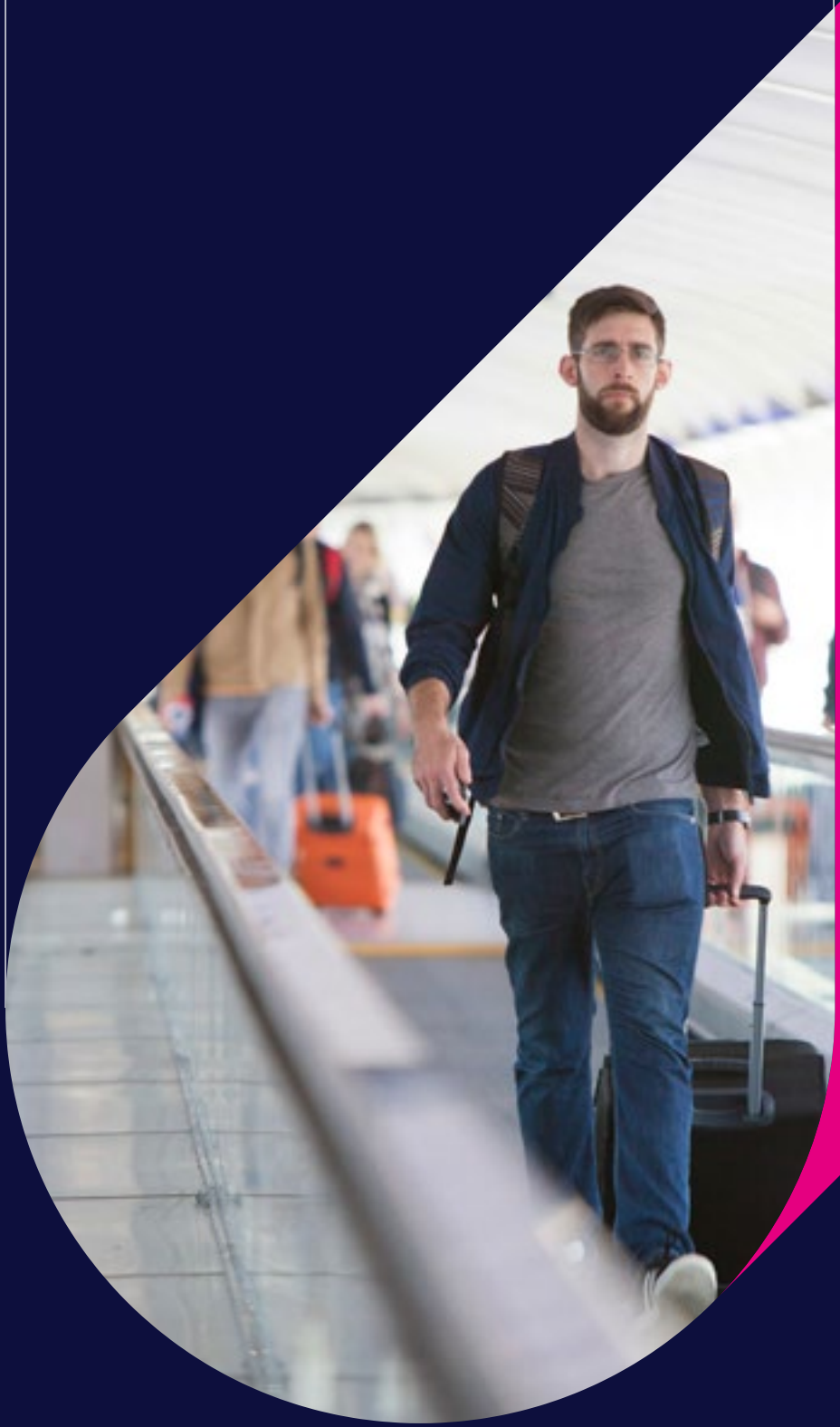
Research capability and technical expertise that underpins the prime capabilities, provides access to global education and research networks, provides a supply of skilled labour and attracts overseas students who maximise education providers' income.

This highlights the importance to the North's economy of its energy sector, particularly supporting green growth through green generation of energy, low carbon technologies and the development of carbon capture and storage solutions.

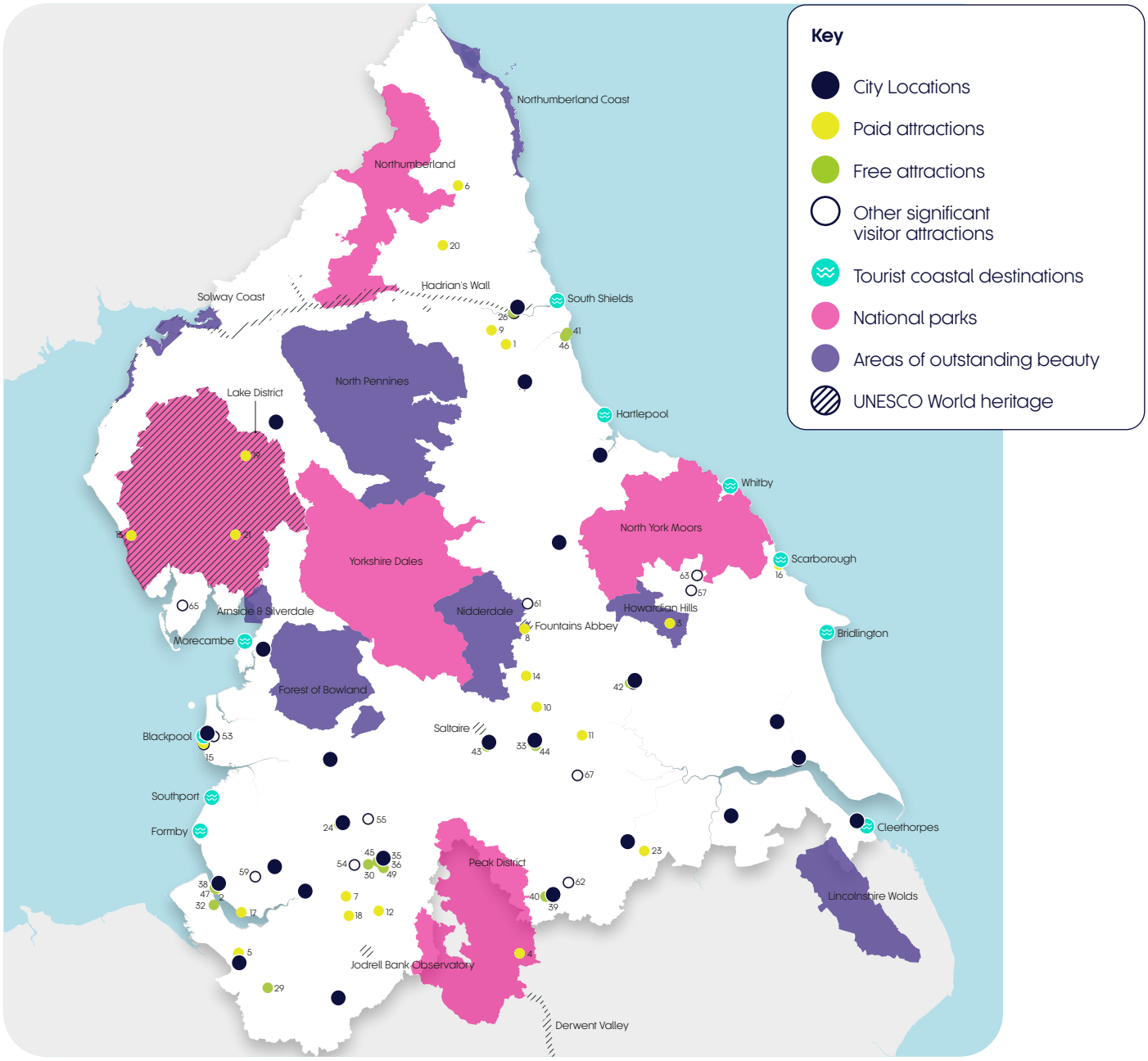
Research and innovation have been integral to the North's economic growth in recent decades. Over 20 universities across the North support research and innovation, as well as collaborate with public and private partners in areas like chemistry, materials, textiles, and process engineering[12]. The eight most research-intensive universities in the region collectively employ 116,000 people and attract £1.26bn to the North in annual research funding[13]. However, while the North has significant research capability, it lacks a significant regional collaboration hub as seen in other parts of the UK including the South East and Midlands[14], which could unlock further economic opportunities.

International connectivity is a key driver for economic growth in the UK and for the North. In 2018, aviation contributed £22bn to the UK economy while air freight and its supporting businesses contributed £7.2bn. TfN's International Connectivity Report[15] identified that international passenger connectivity contributed £5.5bn towards the North's GVA. More recently, Visit Britain data from 2019 shows there were four million visits to the North by international visitors, generating expenditure of £2bn[16]. The North's seaports are also important for international freight connectivity, with further opportunities arising from the newly designated Freeports.

Alongside these prime and enabling capabilities in the North is our visitor economy, recognising the range of cultural, historical, and natural assets we have across our diverse physical landscape. These not only enhance the quality of life for residents in the North, but means the region attracts high levels of visitors. The North's vibrant and varied visitor economy comprised approximately 39,000 businesses employing approximately 579,000 people in 2019, while also supporting additional businesses and jobs through the supply chain. It attracted 420m visits in 2019, with visitor spend of £21.05bn, generating a total net GVA contribution to the North's economy of £12.33bn[17], There are other benefits too, such as improving the recognition and image of the North nationally and internationally, encouraging inward investment and facilitating improvements to local amenities, urban realm and transport links which benefit residents and businesses as well as visitors.



## Figure 4.2: The North's main visitor economy assets




Source: Atkins and The Leisure Consultancy (2021) Visitor Economy and Transport in the North of England, available here

| National Parks | Areas of Outstanding Natural Beauty | UNESCO World Heritage Sites |
|---|---|---|
| Lake District | Arnside and Silverdale | Derwent Valley Mills |
| North York Moors | Forest of Bowland | Durham Castle and Cathedral |
| Northumberland | Howardian Hills | Hadrian's Wall |
| Peak District | Nidderdale | Jodrell Bank Observatory |
| Yorkshire Dales | North Pennines | Liverpool – Maritime Mercantile City* |
| | Northumberland Coast | Saltaire |
| | Solway Coast | Studley Royal Park |
| | | The English Lake District |

* At the time of this study (January – July 2021), Liverpool – Maritime Mercantile City remained designated as a UNESCO World Heritage Site

# The North's Visitor Economy Assets

| Paid attractions (>200,000 visitors per year) | | Free attractions (>200,000 visitors per year) | | Other significant attractions, without published attendance figures | |
|---|---|---|---|---|---|
| **Number on map** | **Attraction** | **Number on map** | **Attraction** | **Number on map** | **Attraction** |
| 1 | Beamish - The Living Museum of the North | 24 | Bolton Museum, Aquarium and Archive | 51 | Blackpool Pleasure Beach |
| 2 | The Beatles Story | 25 | Customs and Excise National Museum | 52 | Blackpool Tower |
| 3 | Castle Howard | 26 | Discovery Museum | 53 | Blackpool Zoo |
| 4 | Chatsworth | 27 | Durham Cathedral | 54 | Chill Factore |
| 5 | Chester Zoo | 28 | Great North Museum: Hancock | 55 | East Lancashire Railway |
| 6 | Cragside House, Gardens and Estate | 29 | The Ice Cream Farm | 56 | Fantasy Island |
| 7 | Dunham Massey Hall | 30 | Imperial War Museum North | 57 | Flamingo Land |
| 8 | Fountains Abbey | 31 | International Slavery Museum | 58 | JORVIK Viking Centre |
| 9 | Gibside | 32 | Lady Lever Art Gallery | 59 | Knowsley Safari Park |
| 10 | Harewood House Trust | 33 | Leeds Art Gallery | 60 | Life Science Centre |
| 11 | Lotherton Hall & Gardens | 34 | Leeds City Museum | 61 | Lightwater Valley Theme Park |
| 12 | Quarry Bank Mill and Garden | 35 | Manchester Art Gallery | 62 | Magna Science Adventure Centre |
| 13 | Ravenglass and Eskdale Railway Co Ltd | 36 | Manchester Museum | 63 | North Yorkshire Moors Railway |
| 14 | RHS Garden Harlow Carr | 37 | Merseyside Maritime Museum | 64 | SEA LIFE Blackpool |
| 15 | Sandcastle Waterpark | 38 | Museum of Liverpool | 65 | South Lakes Safari Zoo |
| 16 | Scarborough Cliff Railway | 39 | Museums Sheffield: Millennium Gallery | 66 | The Deep |
| 17 | Speke Hall, Gardens & Estate | 40 | Museums Sheffield: Weston Park | 67 | Xscape |
| 18 | Tatton Park | 41 | National Glass Centre | | |
| 19 | Ullswater Steamers | 42 | National Railway Museum | | |
| 20 | Wallington House, Gardens & Estate | 43 | National Science and Media Museum | | |
| 21 | Windermere Lake Cruises, Bowness | 44 | Royal Armouries Museum | | |
| 22 | York Minister | 45 | Science and Industry Museum | | |
| 23 | Yorkshire Wildlife Park | 46 | Sunderland Museum and Winter Gardens | | |
| | | 47 | Tate Liverpool | | |
| | | 48 | Walker Art Gallery | | |
| | | 49 | Whitworth Art Gallery | | |
| | | 50 | World Museum Liverpool | | |

Source: Visit Britain Annual Survey of Visits to Visitor Attractions, 2019; additional attractions identified by desktop research and stakeholder feedback

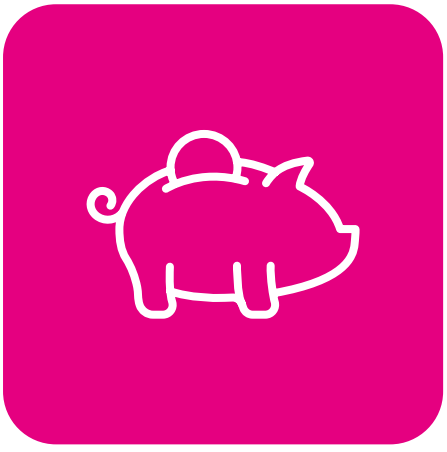
## 4.3 Economic and social constraints

As highlighted above, the North's economic potential is enormous, and there are opportunities to leverage this potential to address social exclusion and decarbonisation challenges. However, the region is constrained by poor connectivity between its economic centres and many of its cities and towns are too small or isolated to fully take advantage of the positive externalities associated with agglomeration and market opportunities. Agglomeration enables firms to access a larger and deeper labour force, share inputs, access supply chains and infrastructure, and learn through the exchange of ideas and information. This matters for both city centre-based service sector businesses and in manufacturing clusters. However, if transport connectivity is poor, then these benefits cannot be realised, resulting in lower productivity.

Lower productivity results in lower wages and living standards. The latest pre-pandemic figures (2019 data) show that Gross Disposable Household Income (total income following tax and redistribution measures) in the North was £18,232, or 82.8% of the average for England as a whole. The figure for the North East was almost £1,000 lower, at £17,266.

This is exacerbated by:

- High levels of poor physical and mental health compared with the rest of England, which contributes to economic inactivity, unemployment, absenteeism among employees and lower productivity. This can form a vicious cycle, with poor economic outcomes also reinforcing poorer health outcomes
- Entrenched socioeconomic and demographic inequalities linked to ethnicity, gender, disability, social class and age. These inequalities, associated with structural factors as well as to discrimination, constrain the ability of many in the North to access high quality education and employment opportunities.



The North's cities, towns, and rural communities are incredibly diverse. The region has an ageing population and some of the youngest cities in Europe. It has some of the most and least economically deprived neighbourhoods in England, and is home to some of the most ethnically and linguistically diverse towns and cities in the UK.

This diversity is a key strength of the North's societal landscape, but significant inequalities are also present. The 2019 English Indices of Deprivation (IMD) show that the North has significantly higher levels of multiple deprivation than the rest of England – 43% of areas are in the most deprived three deciles, compared with 25% of the rest of England.[19] Underlying this are relatively worse outcomes in income, education and employment, the combination of which has accelerated post-industrial decline in many communities across the North.

The underperformance of the North's productivity is closely linked to the poorer outcomes across many indicators including higher levels of poverty, lower skills, poorer health outcomes, life expectancy and low enterprise rates. Lower wage levels, as well as also significantly lower physical, financial and pension wealth than the UK average, are holding back investment and spending of private householders too, impacting communities and places across the region.

In parallel, the North's housing stock is amongst the oldest and least efficient in the UK. Poor energy efficiency and poor housing quality contribute to fuel poverty and greater prevalence of respiratory diseases, particularly for children and older people.

The combination of poor housing quality and deprivation in income and employment feeds into the high levels of health deprivation evident in the North. In the 2019 IMD, 54% of areas fell into the most deprived three deciles nationally on the measure of health deprivation, compared with 20% of areas in the rest of England. At a local authority level, 18 of the 20 most health deprived local authority districts (LADs) in England are in the North. This reflects the combination of lower overall life expectancy and healthy life expectancy, greater prevalence of poor mental health, and a greater overall burden of chronic and acute morbidity[20].

The health challenge present in the North, and the economic and social factors underlying it, are highly entrenched. Indeed, analysis of health inequalities in the decade since the 2010 Marmot Review highlighted that "inequalities in life expectancy have increased since 2010, especially for women", that "there are growing regional inequalities in life expectancy", and that preventable mortality remains the highest in the poorest areas of the country.[21] These impacts are increasingly evident earlier in life, with chronic disease increasingly impacting younger people, forming a vicious cycle of health-related poverty and unemployment. Consistent with this, analysis by the Northern Health Science Alliance estimates that 30% of the productivity gap between the North and the rest of England is caused by poor health, and that poor health is a major contributor to the higher levels of economic inactivity evident in the North.[22]

As well as a growing gap between the North and the rest of England, analysis of progress in the 10 years since the Marmot Review highlights growing inequalities within the North. The gap in life expectancy between the different sub-regions of the North has increased, with the most deprived areas of the North East further behind the most deprived areas of the North West and Yorkshire and the Humber in 2016-18 than they were in 2010-12. This is consistent with the broader patterns of inequality within the North, with the North East affected by higher levels of overall deprivation.


## 4.4 Connectivity constraints

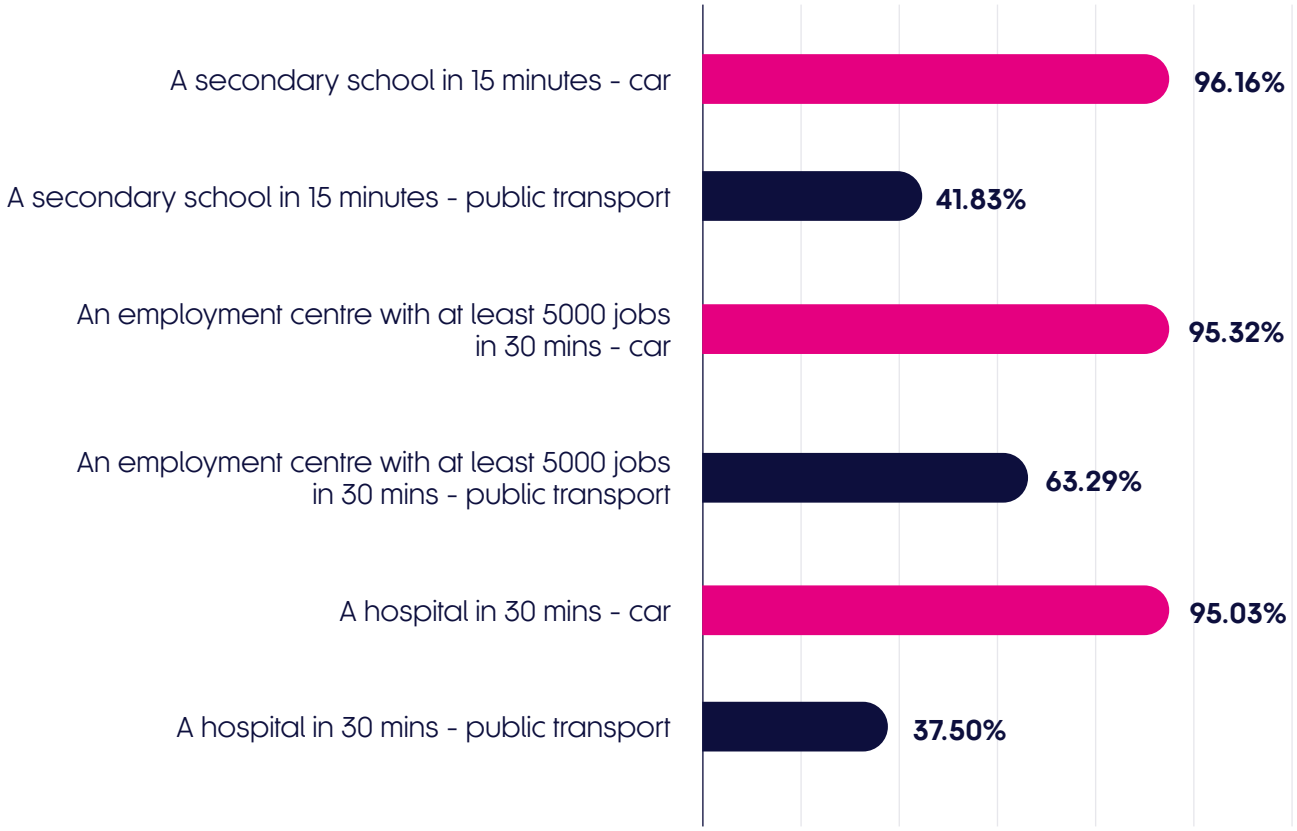
Lifting the region's economic and social performance is critical to unlock the North's potential. But the connectivity challenges on our current transport network must be addressed if we are to achieve our 2050 vision. Our centres of economic and social activity are fragmented by poor transport links, compounded by the physical geography which constrains the movement of people, goods and services around the North and with other parts of the UK. Businesses in the region are also held back by relatively poor inter-city and intra-city connectivity, which restricts access to a wider pool of skilled labour, the frequency and efficiency of business interactions, as well as the movement of goods and services within the North, across the rest of the UK and globally. Together, it prevents the region being a more cohesive functional economic area, which is essential to unlocking its economic potential.

For example, only 27% of the North's population are able to access 500,000 jobs in under an hour by rail – significantly less than other parts of the UK. Analysis of the current transport networks indicates a significant disconnect between the North's major centres. For example, Washington in Tyne and Wear is the largest town in the UK without rail access. While 9.8 million (58%) of people have access to at least one of the North's five largest cities or Manchester Airport within an hour by rail, only 7% of people can access a second destination within that time. This reduces the labour pool available to northern employers and limits opportunities for individuals, constraining productivity at a pan-regional level, and with wider consequences for social connections, education and the visitor economy.


Similar problems with connectivity are evident at a more local level. Only 63.3% of the North's population can access an employment centre (such as a town centre or industrial estate) with at least 5,000 jobs within 30 minutes by public transport, compared to 95.3% by car. Inequalities in car ownership compound this issue– with 38% of those in the lowest income quintile having no access to a car or van, compared with just 15% of those in the middle-income quintile. This means that poor access to jobs by public transport has a disproportionate impact on those on lower incomes, constraining access to secure and high-quality opportunities, and with this the chance for increased incomes and quality of life.

Accessibility to healthcare and other key services to non-employment sites is also often very poor: only 37.5% of the North's population can access a hospital within 30 minutes by public transport. Given the well-established link between poor health, disability and poverty, and from poverty to car access, this acts as a significant constraint on access to healthcare among populations in need. It is essential that these key services are accessible through the region's public transport system, and that access should be by both sustainable and affordable means. The current accessibility gap reinforces car dependency and forced car ownership and constrains resilience and choice.

**Figure 4.3: Access to services for North's population**
**% of the population in the North able to access**




## 4.5 How do people in the North travel now?

Alongside access to jobs and opportunities, the availability of travel options is a challenge in the North. Around 97% of all personal journeys are made using our roads, amounting to 88% of distance travelled, with 70% of all trips by car, bus and taxi equating to 126bn vehicle kms per year.[26] This compares unfavourably with other parts of the UK and highlights the constrained nature of the North's travel markets. For example, the average mode share (by passenger km) for car in England was 89% in 2019 (pre pandemic).

This over reliance on the car, which is driven by a lack of reliable alternatives, has significant implications for carbon emissions. Cars, buses, vans and HGVs within the North of England accounted for about 25 mega-tonnes (95%) of CO2 emissions in 2018. Nearly one quarter of the UK's total emissions from road users fall within the North of England.[27] Over half of our road emissions are generated by cars, with 28%, a relatively high proportion compared to the UK, generated by HGVs. Out of the 8m registered cars in the North in 2018, nearly 25% were large cars or SUVs, generating typically higher emissions[28]. Emissions from bus and rail represent just 5% of emissions, which more closely reflects the national picture.

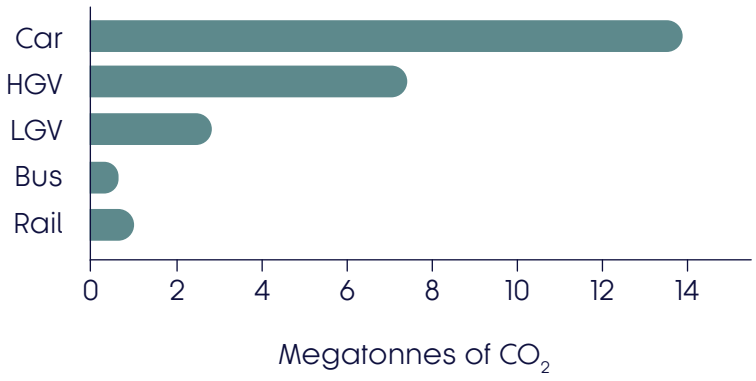
Around 97% of all personal journeys are made using our roads, amounting to 88% of distance travelled, with 70% of all trips by car, bus and taxi equating to 126 billion vehicle kms per year.[26]

The development and deployment of low carbon technologies, such as electric vehicles and hydrogen fuel cells will significantly reduce emissions from road transport as the low and zero emission share of the vehicle fleet grows. Prior to and during this transition, however, substantial modal shift and management of road vehicle demand will be necessary to reduce emissions in the short to medium term, to stay within our carbon budgets.

## Figure 4.4: Surface transport emissions in the North in 2018.[29]

**25** million tonnes of $CO_2$

### Total megatonnes of $CO_2$e by vehicle type

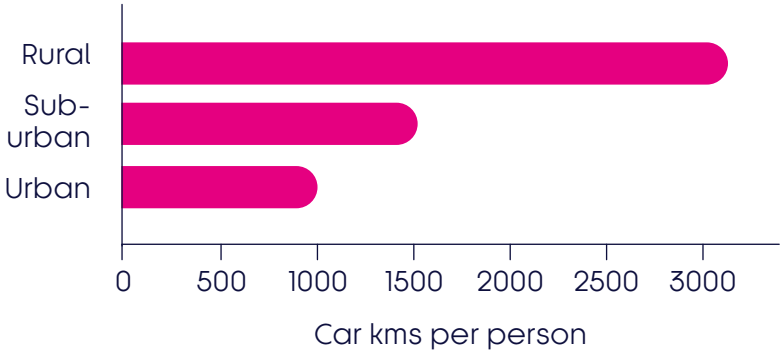



**6%** of total UK emissions

**23%** of UK road emissions

**126** billion vehicle kms

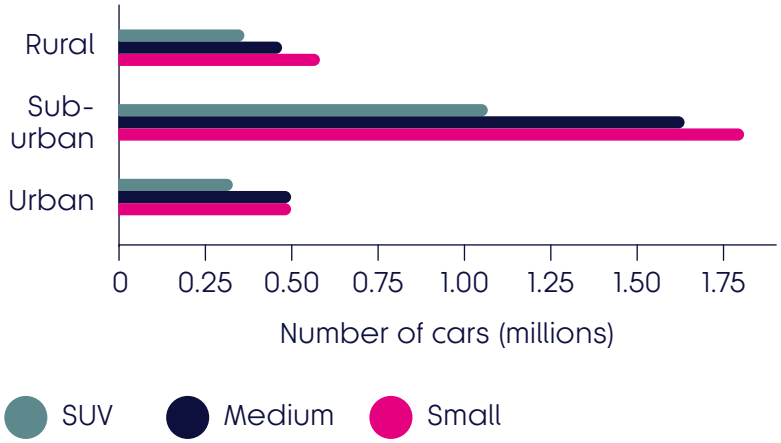
### Car kms per person by area type




**23%** of vehicle kms in the UK (cars, LGVs and HGVs)

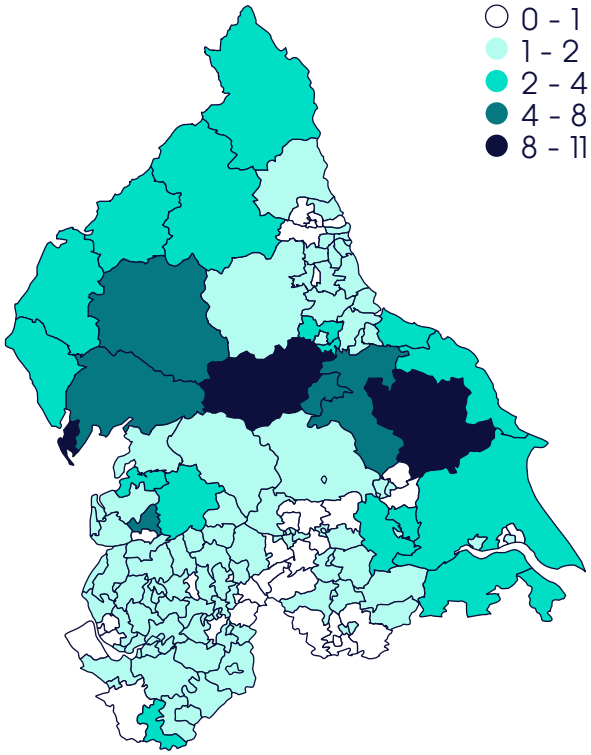
**8** million registered cars

### Car ownership by area type and segment




**23%** of registered cars in the UK

**$CO_2$ Emissions (tonnes) per head of population**




Despite the significant proportion of our regional emissions emanating from car use, there has been no evidence of modal shift away from car use over the last decade, as shown in Figure 4.5. In fact, the number of car trips taken per person increased slightly and the number of public transport trips taken per person decreased, driven by the decline in bus patronage.

**Emissions Intensity ($gCO_2$/km)**

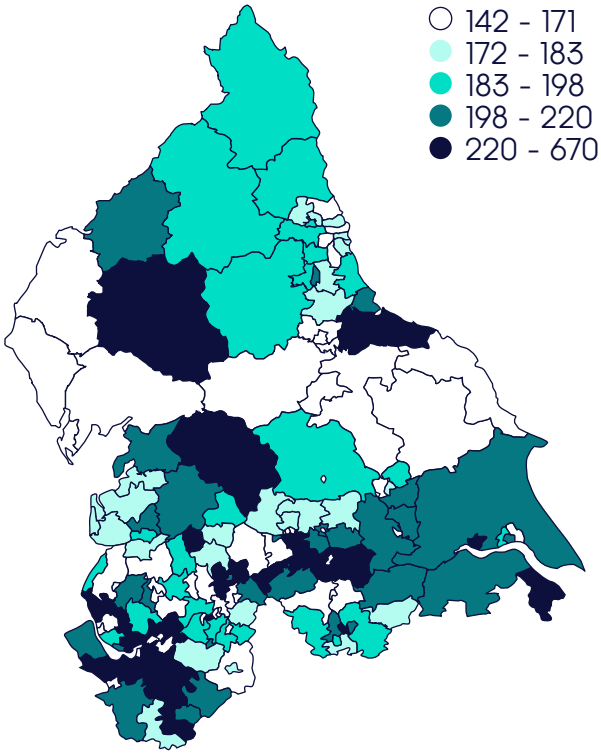
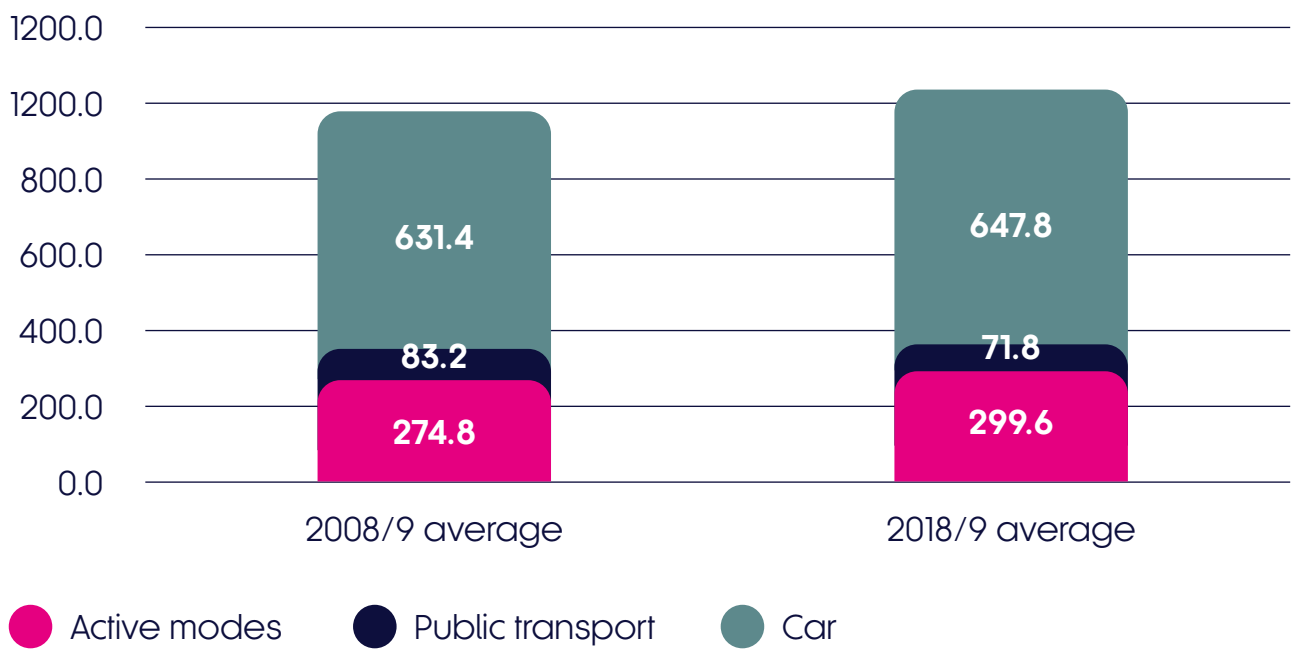


**Figure 4.5: Average by number of annual trips by modal category**




Given the underlying socioeconomic and demographic inequalities within the North, it is those on low incomes and in insecure work, those with disabilities and long-term health conditions, and those with caring responsibilities that are most likely to be excluded by issues on the transport system.

Indeed, over half of the areas in major conurbations in the North face high levels of deprivation in income, employment and education. By contrast, rural towns, villages and dispersed communities are on average less affected by these multiple aspects of deprivation. But they face a combination of poor transport connectivity, digital exclusion and social isolation. The fragmentation of local public transport services and reductions in bus services have impacted relatively more rural areas, with many communities lacking viable connectivity.

## Air quality, health and wellbeing

Air pollution from transport – particularly road transport – is a significant contributor to asthma, diabetes, lung cancer and dementia. Nitrogen dioxide and PM2.5 pollution is respectively estimated to cause 1.14 million and 1.33 million additional cases of disease across England between 2017 and 2035. Within the North, approximately 5.88m people live in areas where nitrogen dioxide pollution poses an increased risk of early death. DEFRA estimates from 2019 reveal that background nitrogen dioxide concentrations in the North, align with those areas with the highest vehicle mileage and emissions intensity. The vast majority of Air Quality Management Areas in the North (132 out of a total of 138) are in place because of nitrogen dioxide emissions from road transport.

In addition to air pollution, there are a number of other ways in which the transport system impacts the health and wellbeing of people in the North. The following impacts are rigorously measurable across the North of England:

- **Incidents and safety:** Between 2017 and 2021, 2,041 people were killed and 28,519 were seriously injured in road traffic incidents in the North of England. Of those killed or seriously injured, 38.9% were drivers or passengers in cars, 23.7% were pedestrians, 18.2% motorcycle riders or passengers and 14.5% were cyclists. Together, this represents a significant burden of mortality and morbidity, with a disproportionate impact on those travelling actively. The most common cause of death among those walking, wheeling and cycling is collisions with cars, while nearly 40% of fatalities among car occupants and motorcycle riders are single vehicle incidents[30]

- **Access to healthcare:** Approximately 390,000 people in the North cannot access a GP surgery within 30 minutes by public transport and approximately 510,000 cannot access a hospital within an hour by public transport. Poor access to healthcare can cause delays in seeking diagnosis and treatment, increases the level of missed healthcare appointments, and limits patient choice[31]

- **Noise pollution:** Noise pollution has a range of physiological and psychological impacts, and chronic exposure to noise pollution increases the risk of heart disease, high blood pressure and depression. These effects occur at a relatively low level of noise, with chronic exposure to traffic noise of only 55 decibels robustly linked with increased levels of coronary heart disease and hypertension. This is equivalent to the level of noise from normal conversation or background music. Modelling undertaken for TfN indicates that approximately 2.5 million people in the North are impacted by harmful levels of road traffic noise, the vast majority of whom are in large urban centres. Noise associated with rail is also likely to contribute to poor health,[32] however the impacts are significantly smaller in scale and more diffuse across the North

- **Physical inactivity:** Physical inactivity is among the largest contributors to mortality, and increases the risk of heart disease, diabetes, musculoskeletal conditions and cancer.[33] The combination of poor-quality active travel infrastructure, car-focused urban design, road traffic incidents, perceptions of safety and high levels of car dependency is a significant limiting factor in levels of physical inactivity[34].

## 4.6 Challenges of a changing climate

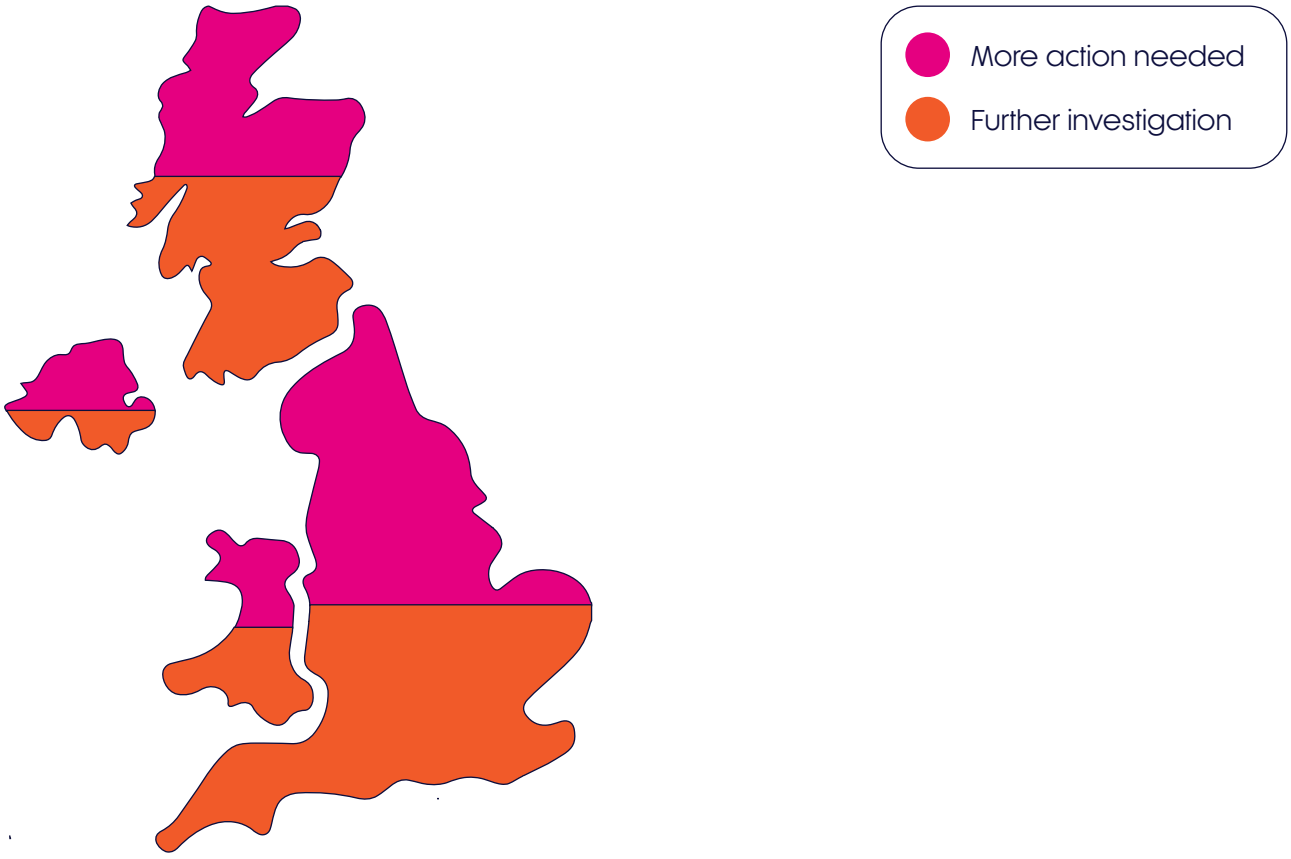
The final challenge is arguably the most fundamental. The Intergovernmental Panel on Climate Change's (IPCC) Sixth Assessment Report indicates that the Earth's average surface temperature is set to reach 1.5°C-1.6°C above pre-industrial levels by the early 2030s under all its modelling scenarios, and potentially up to 4.4°C by the end of the century under the highest emission scenarios[35].

Increased extreme rainfall events, storm surges and rising sea levels lead to impacts on transport infrastructure situated near rivers and along our coasts and estuaries, susceptible to direct flooding as well as ground movements caused by soil saturation and erosion. Major transport disruption associated with these types of effects have already been experienced on our road and railway networks in recent years, particularly in Cumbria, North Yorkshire, Cheshire West and Chester, and the Yorkshire East Coast.

Equally, extreme weather events, on top of already higher average summer temperatures will see an increase in the number and severity of heatwaves, similar to that experienced across England in the summer of 2022. Increased thermal loading of highway bridges and surfacing can affect their operational structure, while extreme heat can lead to rail buckling and overhead power cable sagging on our rail network. Extreme temperatures could also affect maintenance schedules, with staff being unable to work outdoors.

The world is already seeing extreme weather and climate change cause large economic and societal disruption through impacts upon our built environment, natural resources, markets and supply chains. The IPCC warn of the danger of multiple climate hazards occurring simultaneously and interacting with non-climatic risks, 'cascading risks', compounding the overall effects, and making them increasingly difficult to manage. The latest UK Climate Change Risk Assessment (CCRA3)[36] highlighted how such risks could affect our transport networks, for example by preventing repair of other critical infrastructure, or, alternatively, failures in energy transmission cascading back into transport failures. Similarly, the Climate Change Committee's Independent Assessment of UK Climate Risk (2021)[37], developed for the UK's third Climate change Risk Assessment (CCRA3) starkly outlines the risk to transport infrastructure within England as a whole (Figure 4.6), with all identified risks urgently requiring increased levels of investigation and action to start reducing those risks.

## Figure 4.6: Average by number of annual trips by modal category




| Risk or opportunity | England | Northern Ireland | Scotland | Wales |
|---|---|---|---|---|
| Risk to infrastructure networks (water, energy, transport, ICT) from cascading failures (1) | ● | ● | ● | ● |
| Risks to infrastructure services from river, surface water and groundwater flooding (12) | ● | ● | ● | ● |
| Risks to infrastructure services from coastal flooding and erosion (13) | ● | ● | ● | ● |
| Risks to bridges and pipelines from flooding and erosion (14) | ● | ● | ● | ● |
| Risks to transport networks from slope and embankment failure (15) | ● | ● | ● | ● |
| Risks to subterranean and surface infrastructure from subsidence (17) | ● | ● | ● | ● |
| Risks to transport from high and low temperatures, high winds, lightning (12) | ● | ● | ● | ● |

The North has unique environmental and heritage assets. While these pose some challenges for both the operation of existing transport systems and the development of new infrastructure, it also provides the opportunity for deploying robust nature-based solutions to combat the effects of climate change. Such opportunities could also have local economic, health and wellbeing benefits for local nature recovery.

### Local nature recovery and nature based solutions

The North's natural places are not only vital for our wildlife but also the health and wellbeing of our communities. They provide an opportunity to learn about nature, take part in sport and recreation, or simply relax. 20% of the North's land area[38] is covered by national parks, and the region has a large number of protected landscapes including six Areas of Outstanding National Beauty (AONBs), as well as a large number of nationally and internationally designated habitats.[39] There are also a range of sites of nature conservation value designated at local authority and community level, including local nature reserves.

Although the North covers only a quarter of the total land area of England, it accounts for 70% of all wetland areas, 71% of all moor and heathland, 28% of all forests and 49% of all water courses (rivers and streams)[40].

The North's peat bogs (which comprise 88% of England's peatland) help moderate our climate by storing away vast amounts of greenhouse gases, while those same bogs, along with our forests, wetlands and green spaces, play a vital role in improving our resilience against the worst effects of climate change: attenuating flood waters, providing soil stability and shade.

Therefore, it is unsurprising that, alongside the global climate crisis – and critically interlinked with it – there is a global ecological crisis. The North of England is no exception to this global phenomenon and the Environment Act 2021 gives it greater policy focus. The level of environmental protection enshrined within the Act is relevant to our transport system, such as setting a requirement for achieving biodiversity net gain when developing new transport infrastructure, and the need to utilise existing practices and transport estate to help build a nature recovery network across the country.

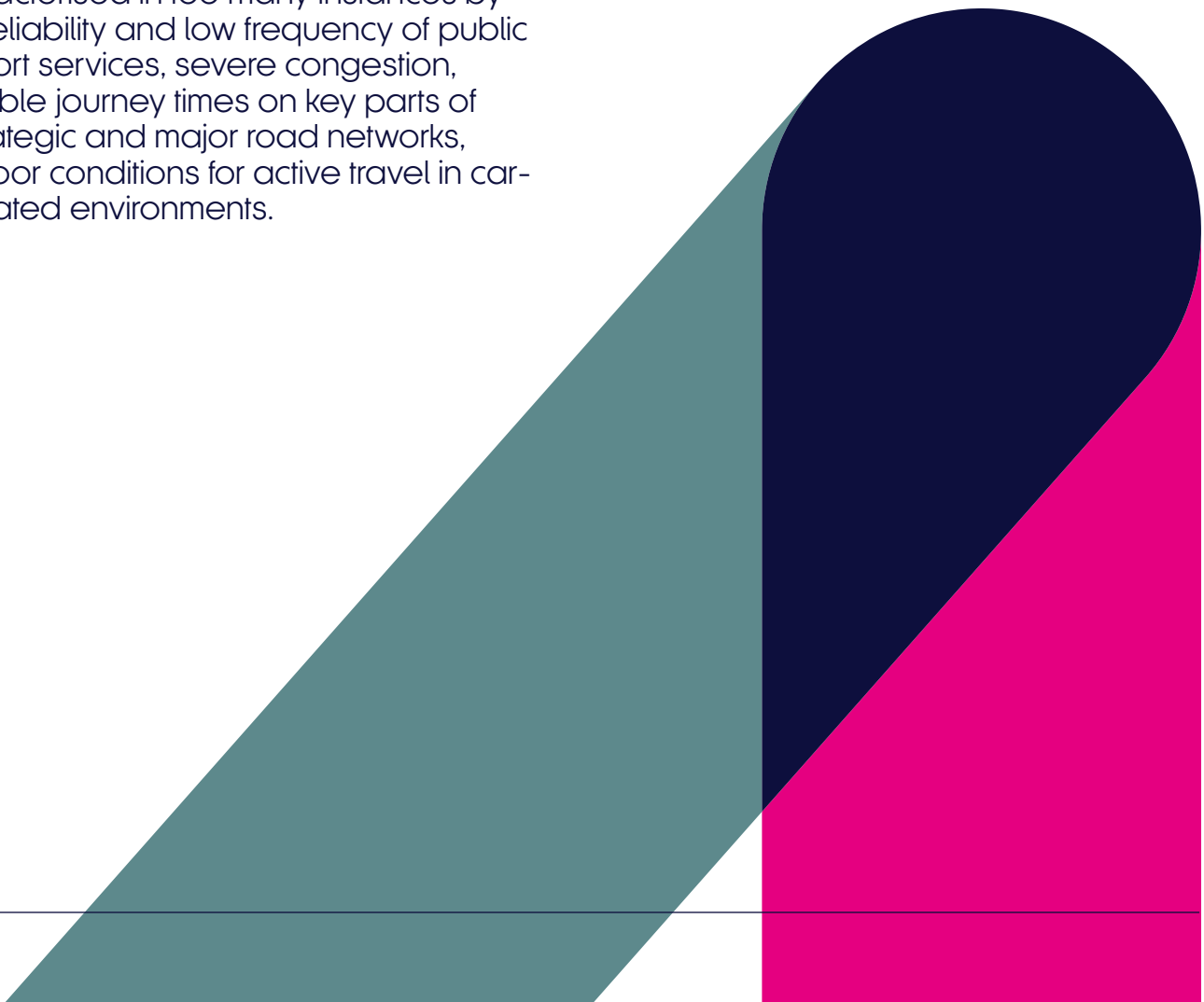
Regional initiatives such as Nature North[41], the Northern Forest[42], Great North Bog[43], and Wild Ingleborough[44] are already creating new green jobs, enhancing our resilience to climate change, improving the quality of our water, supporting our wildlife and the mental and physical wellbeing of our communities. A step change is now needed in the way we utilise and maintain the significant amount of green and blue infrastructure within the transport estate, with the aim of not just mitigating harm, but also boosting our region's natural capital and create linkages between our partners' local nature recovery areas.

Change is also required to ensure greater levels of access to nature for all, across the North, and to reduce inequalities in access to nature. The same decline and fragmentation of local bus services in rural areas and urban fringes that is a key cause of transport-related social exclusion is also relevant to access to national parks and other green spaces. Income inequalities linked to car ownership means that these declines have particularly impacted on the ability of those on low incomes to access nature, further reinforcing health and wellbeing inequalities linked to income.

# 5.

# Our strategy for the North's transport system

Unlocking the economic, social, and environmental opportunities requires a sustainable, inter-connected transport system. The North's transport system today is characterised in too many instances by poor reliability and low frequency of public transport services, severe congestion, unreliable journey times on key parts of the strategic and major road networks, and poor conditions for active travel in car-dominated environments.




May 2023

## 5.1 Our strategy for rail

An efficient and reliable rail network across the North is fundamental for connecting people to jobs, health, education and leisure opportunities, connecting businesses to each other and employees, and allowing the sustainable movement of goods and materials.

Prior to the COVID-19 pandemic, the rail system in the North accommodated more than 200m rail trips per annum, accounting for 1.1% of all trips in the North, and around 7.4% by distance travelled, emphasising the importance of rail to longer distance travel. Over the past 20 years, the number of rail passengers travelling entirely within the North has grown at a rate of 6.3% per year (over 2% higher than the national growth rate of 4.2%), with the number of passengers increasing three-fold in this time.[45]

Rail should be the fastest, most reliable and most sustainable option for many inter-urban journeys to carry significant numbers of people directly into city centres and economic clusters, and over longer distances. Rail is often the mode of choice for higher-skilled workers, who make seven times as many long-distance rail trips than other occupations[46], and younger people (some of whom travel double the distance by rail compared to any other group)[47]. But is also important in accessing social, employment and education opportunities, as well the key destinations across the North which drive the visitor economy.

Rail demand has recovered strongly in the North[48] with capacity and overcrowding already returning to many services. The composition and timing of rail journeys in the North has changed too, with fewer commuters and greater use of off-peak and leisure travel.[49] The consequences of this change has meant a reduction in

demand during the traditional morning and late afternoon peaks, and an increase in the relative importance of weekend rail travel, rising from 16% of the total in 2019 to 21% in 2022[50]. Rail commuter travel has shifted towards Tuesdays to Thursdays, reflecting the increase in hybrid flexible working[51].

Current indicators for train frequency, rail journey times, performance and physical accessibility at stations across the North are unsatisfactory and acting as a significant barrier to our meeting our economic, social and environmental ambitions.

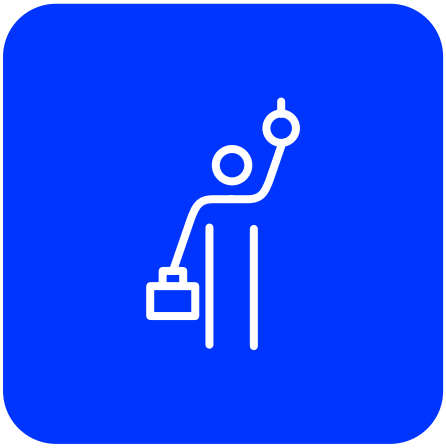
Capacity constraints impact on the potential for more frequent services, and on the viability of new services to areas not currently served. They also affect the resilience and reliability of existing services, particularly on crucial east-west links and at critical station hubs. On both the East and West Coast Main Lines, without additional investment in improving capacity, there is limited scope for growth in passenger or freight services, particularly once the need to accommodate HS2 services is considered.

Connectivity between the North's centres, in terms of passenger service frequencies, direct linkages and journey times is too often poor, extending the perceived distance between centres and acting as a barrier to travel[52]. Services in the North are typically hourly and usually a two to three car train. Meanwhile, only four in ten of stations in the North (where frequent services would be feasible) are served by at least two trains per hour in each direction.

Performance (defined by the proportion of

trains arriving on time) has been historically poor and now declined to unacceptable levels which has led to wider economic consequences for the North. In early 2020, all but one of the eight Train Operating Companies (TOCs) operating in the North (locally managed Merseyrail being the exception) had a lower "on time" percentage than all but one of the 15 TOCs operating outside TfN's geography. Delays, cancellations, overcrowding and poor on-board facilities add to the challenges faced by passengers.

Poor performance is a deterrent to rail use, for both existing rail users and potential users and is causing modal shift from rail that may be hard to recover, compromising rail's ability to support growth in the North. Rail station accessibility is also a concern for passengers and a constraint to growth.



Data gathered by Northern in 2017 had indicated that out of 543 stations at which their services call, 46 had no step-free access at all to any part of the station, while a further 210 enjoyed only partial step-free access[54]. TfN's assessment of 600 stations' facilities concluded that:

- Only 288 (exactly 48%) had adequate step-free access to all areas, and the proportion of fully accessible stations is lower still
- 77 (13%) have level access by ramps and lifts to all areas
- 225 (38%) have adequate physically accessible waiting shelters
- 521 (87%) have a fully adequate level of lighting
- 497 (83%) have customer information systems showing departing trains (needed by customers with hearing impairments)
- 463 (77%) have a public address system (needed by customers with visual impairments).

Accessibility is also a significant deterrent for non-users, with investment required to make the North's railway network fully inclusive. Network Rail's "Access for All" is a DfT-funded programme aiming to provide an obstacle free and accessible route onto and between train station platforms. With further funding there is an opportunity to make faster progress.

## Our strategic priorities

The North requires a fit-for-purpose rail network with strong North–South and East–West connections acting as the backbone of a high-quality, reliable, resilient, and equitable passenger network, capable of supporting the future growth of rail patronage, but which also provides the critical capacity and capability to adapt to modern freight requirements. That means:

- **Better connectivity:** Including frequency and journey time improvements, combined with better integration of different rail services and between rail and other transport modes, which bring the North's economic assets and neighbouring regions closer together
- **More capacity:** A 7-day railway providing the required services and capacity to meet existing and future passenger requirements, recognising the demand shift in use for leisure, as well as freight demand.
- **Improved customer experience:** A passenger network that is easy to navigate, accessible and predictable, with consistent and integrated fares and information available before and throughout journeys
- **Greater opportunity for freight:** A network with improved reliability and punctuality, and the capacity, capability and flexibility to meet the fast-paced changing needs of the industry
- **Supportive of communities:** A railway that delivers upon the social fabric needs of the of the communities it serves, providing integrated and seamless journey opportunities, addressing transport related social exclusion and enhancing public realm to create dynamic and attractive places
- **Cost-effectiveness:** An equitable, inclusive and affordable railway for all stakeholders, maintaining and enhancing the North's railway without compromising the quality of the service
- **Integrated:** our rail network must be seamlessly integrated into our region's wider public transport and active travel networks, facilitating sustainable multimodal door-to-door journeys. We also want integration of fares and ticketing, as well as timetabling, with multimodal hubs providing a crucial role in enabling connectivity
- **Sustainable:** Equally important is enhancing rail's wider role in society and reflecting our global responsibilities, including the reduction of greenhouse gas emissions, the transition to sustainable energy sources and reducing the pollution caused by transport activities. Rail produces significantly less emissions than car travel, producing around 28% of the emissions of a car for a single traveller, and lower if electric trains are used.  so electrification of the North's rail network is critical

- **Accessible:** TfN has developed minimum and desirable standards for station facilities as part of the Northern England Station Enhancements Programme. This includes requirements for multimodal and integrated access to stations as gateways such as bus interchanges, walking and cycling routes, cycle and car parking and taxi ranks. Our ambition is to make all stations accessible and in line with our required standards by 2050.

To achieve the changes required, three major programmes need to be delivered:

- **Trans-pennine Route Upgrade (TRU)**, being delivered now, will deliver faster, greener, and more reliable journeys, enhance passenger experience, capacity and accessibility, and crucially, unlock pan-Northern freight enabling intermodal container trains to cross the Pennines more efficiently, significantly reducing journey times and costs

- **High Speed 2 (HS2)** in full, will provide transformational journeys, with a major uplift in seating capacity, better connecting local and regional markets, and release capacity on other routes for freight and passenger trains

- **Northern Powerhouse Rail (NPR)** in full, ensures that the major cities of the North are connected to each other, and to Manchester Airport with fast frequent services through a combination of new lines and significant upgrades.

  Together, HS2, TRU and NPR are fundamental to delivering our vision of a thriving North of England, where world class transport supports sustainable economic growth, facilitating the connections between key economic centres, and creating the interconnected labour markets required to fully develop the North's most productive sectors, opening up access to new opportunities for millions and creating a viable alternative to private transport for longer distance journeys.

The TfN preferred NPR network is the agreed vision of the North and comprises:

- A new line to be constructed from Liverpool to Manchester via the centre of Warrington and Manchester Airport
- A new line to be constructed from Manchester to Leeds via the centre of Bradford
- Significant upgrades and journey time improvements to the Hope Valley route between Manchester and Sheffield
- A combination of new lines (including the new station at Leeds), significant upgrades, and new stations at Rotherham and Barnsley Dearne Valley, to improve the network between Sheffield and Leeds
- Significant upgrades and electrification of the rail lines from Leeds and Sheffield to Hull
- Significant upgrades of the East Coast Main Line (ECML) from Leeds to Newcastle (via York and Darlington) and restoration of the Leamside Line (providing an alternative route from the ECML south of Durham into Newcastle).

## Figure 5.1: Northern Powerhouse Rail: TfN Preferred Network


Existing Network

Full HS2 Network

Transpennine Route Upgrade

Northern Powerhouse Rail Lines

Leamside Line

The full HS2 project including links to Leeds and York and to the West Coast Main Line to serve Lancashire and Cumbria, alongside the TfN preferred NPR network, combined, are the foundation of driving real change across the whole of the North.

TfN welcomes the commitments set out by government in the Integrated Rail Plan and see those as the foundation on which to build the delivery of NPR and HS2 in full. TfN will work with government, using the adoptive pipeline approach set out in the Integrated Rail Plan to do this.

Reaping the full benefits of TRU, HS2, and NPR will require upgrades to existing rail infrastructure which is not directly on these routes. In particular, a significant capacity enhancement is required on the ECML north of York, which forms part of the extended routes served by all three major programmes. This route is vital for connecting the North East and Tees Valley areas to the North West and West Midlands as well as Yorkshire and the South East, so TfN and Transport North East have already funded development work on enhancing capacity in this area.

A clear pipeline of network interventions is required to realise our ambitions for rail across the North. Alongside the major schemes, there is urgent need for investment in current capacity reliability and resilience – including the need for electrification of passenger and freight services – as part of a rolling programme of work through the next decade. This needs to include the schemes that will flow from the Integrated Rail Plan (including HS2 services to Leeds and Sheffield), and delivery of major schemes in hand, such as TRU, as well as those investments needed to accommodate the growth and increase the capability of the North's rail network. TfN will continue to champion the case for this overall plan with industry partners and DfT ahead of the formation of Great British Railways. This must be informed with a shared understanding of how rail services will evolve in coming years, ideally with a 'single version of the truth', as well as to improve the accessibility, connectivity and user experience of our region's stations. TfN will support industry in developing this, including through our extensive evidence base and continuing to act as broker for partners' priorities where necessary.

This could also include the South Yorkshire priority of Midland Mainline electrification and the need for an integrated NPR/HS2 approach between Dore and Sheffield.

**The North's strategic rail priorities**

| | |
|---|---|
| **Manchester Piccadilly area (including Deansgate, Oxford Road, Slade Lane Junction and Ashburys)** | The Manchester Task Force, led by DfT, is developing solutions to performance issues in the Castlefield Corridor (Deansgate to Piccadilly) area, and more broadly considering timetabling and infrastructure options around Manchester. |
| **Leeds area (including Whitehall, Armley, Methley and Engine Shed Junctions)** | Immediate issues are being addressed by Network Rail's Leeds Area Programme. DfT are developing terms of reference for a study to examine the area's long-term capacity issues and the integration of HS2. |
| **Sheffield area (including Holmes Junction, Meadowhall, Dore Station Junction and Totley Tunnel East)** | Network Rail have developed the Sheffield Single Rail Strategy and is about to submit it to DfT. |

| | |
|---|---|
| **East Coast Main Line (North) (York to Alnmouth)** | Network Rail is developing a programme of measures to enhance capacity on the ECML North following the April 2020 Church Fenton to Newcastle Strategic Advice. This has been funded by TfN and Transport North East. |
| **West Coast Main Line (North) (Winsford to Carlisle)** | Network Rail is undertaking a study of long-term capacity along this route. A number of the measures identified in TfN's Reliability and Resilience Delivery Plan would improve performance in this area. |
| **Trans-Pennine route (Stalybridge to Dewsbury)** | Network Rail's TransPennine Route Upgrade (TRU) programme will address long-term capacity on this route, including the provision of major infrastructure enhancements (e.g. 4-tracking around Ravensthorpe). |
| **Manchester Victoria area (including Salford Crescent)** | The Manchester Task Force is examining timetable and infrastructure options in the wider Manchester area. |
| **Doncaster area (including Hexthorpe Junction and Loversall Carr Junction)** | Long-term planning for this area is being considered as part of the ECML Blueprint which TfN has commissioned Atkins to undertake. |
| **Crewe area (including Sandbach and Madeley Junction)** | Network Rail are undertaking a study of long-term capacity along this route. The area to the south of Crewe has already been examined by the West Coast South study. |
| **Stockport area (including Cheadle Hulme and Hazel Grove)** | Network Rail are undertaking a study of long-term capacity in the Manchester South area. |

We also recognise that transformation of passenger experience requires reform alongside investment, and are working closely with both Network Rail and Great British Railways Transition Team to bring greater visibility and accountability through regional business units. We will continue to advocate strongly for "double devolution" with decisions made at City Region or other local area level where appropriate.


Dec 2021

## 5.2 Investing in our road network

As set out in our Major Roads Report, our highways and roads are at the heart of our communities, made up of a combination of footpaths, cycle ways and roads, enabling our residents and business to go about their daily lives.

As every journey involves a road at some point, roads need to be reliable, resilient, safe, be conducive to active travel options and reduce their environmental impact.

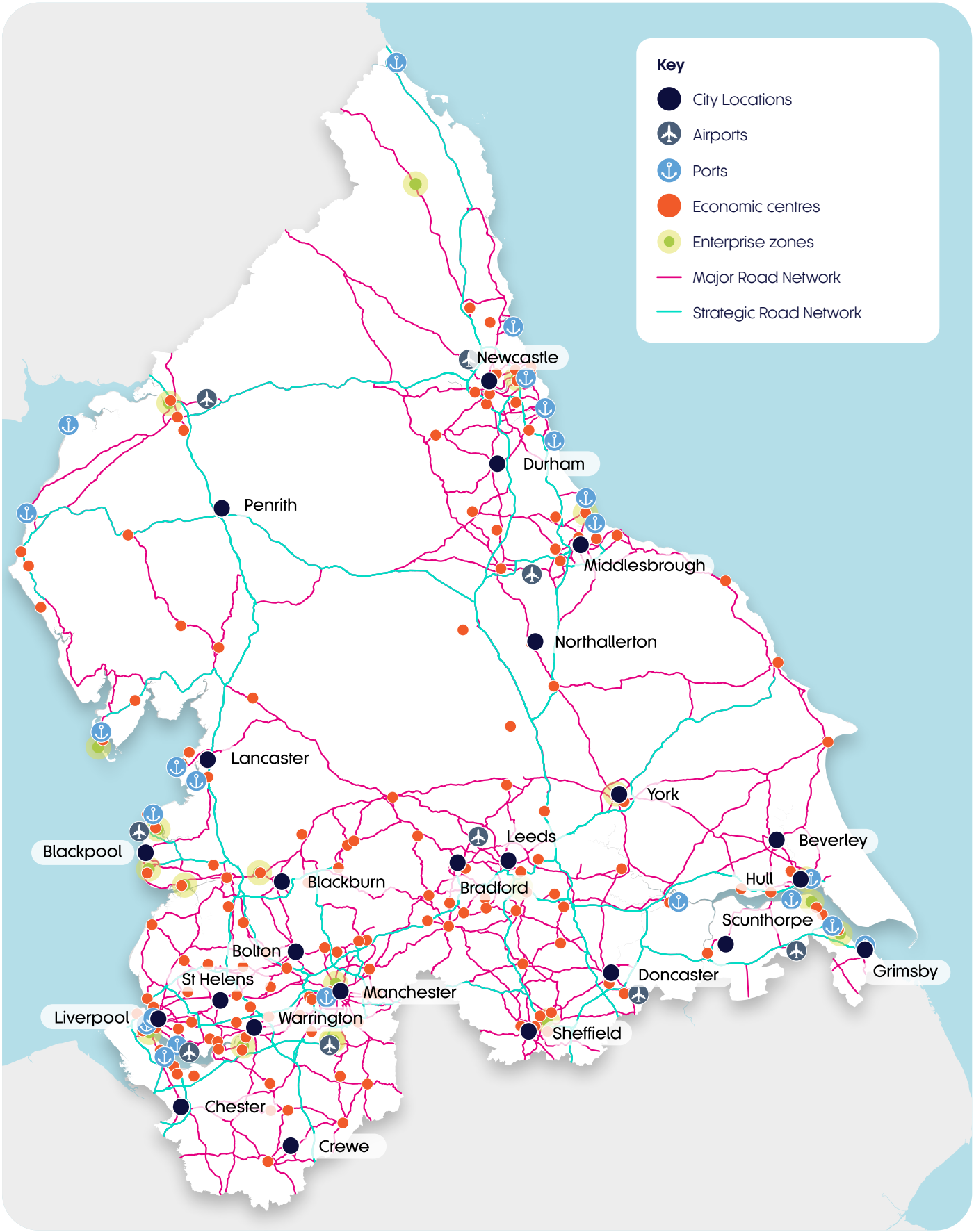
The Major Road Network for the North (MRN) is more extensive than the DfT's MRN defined network and with the Strategic Road Network (SRN)[57], and accounts for approximately 7% of the roads in the region. The Strategic Road Network (SRN) of motorways and significant 'A' roads, operated by National Highways makes up 2% of these roads, with the remainder comprising of 'A' roads managed by local authorities. 69% of all distance driven takes place on the MRN[58].

On the road network, traffic growth and reliance on a few key strategic routes is placing increasing strain on journey time reliability, particularly on sections of the M1, A1, A19, M62 and M6. However, there are hotspots with poor journey time reliability across the network, with impacts on freight, travel to work and the visitor and leisure economy. Around a third of the North's roads experienced poor journey time reliability for at least one hour during weekday peak times (34.8% for weekday morning peak and 33.8% for weekday evening peak). With 83% of sections of the Network experiencing poor journey time reliability for at least one hour at the weekend[59]. This has knock-on impacts for all users, including freight traffic and on bus users due to its impact on the reliability of bus services[60].

Poor road connectivity is also an issue in some areas of the North, for example, even outside of peak times communities in West Cumbria, parts of East Lancashire and East Yorkshire suffer from relatively slow and unreliable transport connections to the core road and rail networks.

Latest traffic flows are now at around 96% of pre-pandemic levels, with HGV and LGV freight flows now at around 102% of 2019 levels[61]. The pandemic accelerated the existing growth in road freight traffic, with much of this attributed to the increasing number of National Distribution Centres (NDC) and Regional Distribution Centres (RDC) in line with the increase in online retailing and the move towards next-day delivery of a wide variety of goods.

## Figure 5.2: Map of the North's Major Roads



Wider challenges for the major road network include:

- The **urgent requirement to decarbonise our transport system**, with road transport responsible for the vast majority of transport related carbon emissions. In 2018, cars were responsible for 14.46 megatonnes (Mt) of CO2 equivalent greenhouse gas emissions in the North, HGVs 7.21 Mt and LGVs 2.71 Mt, compared to just 0.63 Mt for bus and 0.77 for rail[62]. Planning for future road investment, including the approach to business case appraisal, must be aligned with policy commitments to achieve close to net zero carbon emissions and based on evidence such as used for the DfT's Transport Decarbonisation Strategy and TfN's Transport Decarbonisation Strategy

- The **need to improve safety, reliability and resilience for all travel modes** using the MRN and wider road network. The cost of road traffic on the UK economy has been estimated at 1.6% of GDP or £31.9 billion per year, including through increased collision risk, noise, local air pollution, trip suppression and reduced accessibility[63]. In 2021, 2,634 car occupants, 892 cyclists and 1,396 pedestrians were killed or seriously injured on the North's road network. These harms fall disproportionately on vulnerable road users – particularly those travelling actively – and in the vast majority of cases involved collisions between or with vehicles[64]

- The UK is seeing a **growing number of electric vehicles (EVs) on the road**, with EV's accounting for more than one in four new car registrations in August 2022. However, both the pace of transition to EV and availability of charging infrastructure is lagging other parts of the UK. Current data indicates the North has an average of 35 installed public charging devices per 100,000 of population, well below the UK average of 52 devices per 100,000 population[65]. Our assessment is that 162,000 charging points will be required by 2030 and 177,000 by 2050

- The **importance of maintaining and renewing existing highway assets**, ensuring our roads are safe and resilient, in particular adapting to the impacts of climate change which will be essential in mitigating for increased frequency and severity of severe weather events. The Environment Agency estimated the UK-cost of the 2015-16 floods alone as £121 million for rail and £220 million for road[66] and National Highways highlights the need to prepare for increased risks of erosion, floods, embankment failure and temperature damage[67]

To achieve our 2050 vision, we need the MRN to act as a seamless network of roads, enabling safe, reliable and resilient multimodal journeys. We want better outcomes for communities living alongside major roads, biodiversity gains and faster action towards achieving a fair transition to near net zero for transport. That means:

- **Enabling sustainable growth** in key employment and housing growth sites. Supporting agglomeration economies by providing rapid and reliable journeys to bring people and businesses closer together

- **Enabling efficient journeys** across multiple transport modes, contributing to improving access to opportunities for all citizens of the North. Our strategy recognises that in car and wider technologies offer huge opportunities for improving the customer experience, for better integration across transport networks and for more efficient and effective management of our transport networks

- **Encouraging and facilitating mode shift** to sustainable modes, reducing traffic flows, relieving congestion and reducing car dependency to unlock social benefits. This could include increasing provision for and giving priority to pedestrians, cyclists and public transport encouraging more sustainable travel behaviours

- **Enabling international connectivity** through providing good access to airports, ports and associated economic clusters

- **Being resilient and adaptive** to mitigate for severe weather events, improving network resilience

- **Delivering substantial improvements in safety** for all travel modes using the network. TfN commits to a vision for zero deaths and serious injuries on the major and strategic roads networks in the North by 2050, and to reducing the disproportionate impacts of road danger on older and younger people, people with disabilities and people living in deprived communities. Prioritising improvements in road safety, particularly in severely congested and rural areas, will be key for increasing active travel uptake

- **Enabling the rapid transition from internal combustion engine** to low and zero emission vehicles. The North's road and energy networks are critical key enablers in meeting our net zero carbon transport targets. The growth of clean energy opportunities in the North will contribute to increasing efficiency, reliability and resilience of the road network. Consequently, we will support the decarbonisation of road transport by providing intelligence and supporting collaboration towards the roll-out of Electric Vehicle (EV) charging infrastructure

- **Delivering net gains in biodiversity, improving air quality, lessen noise impacts and reduce the severance effects** of heavily trafficked major roads, recognising that the transition from internal combustion engine to low and zero emission vehicles, alongside other improvements will also contribute to inclusivity, health and access to opportunities through improved air quality, physical health and mobility levels.

Future investment in the MRN should therefore be considered as part of a 'whole journey' and 'total network' approach to improving transport outcomes, encompassing all travel modes and integrating local and strategic highway planning. This would open opportunities to optimise the benefits of investment through shared ownership of a locality-based strategy, delivering complementary policies and investment. This will ensure that investment in new road capacity is targeted only where the evidence shows it is essential, for example enabling access to new employment and housing growth sites, improving safety and resilience and/or providing vital transport links for industries and businesses dependent on good road connectivity.

While there may still be instances where we need to invest in additional highway capacity to realise our economic ambitions for the North, those economic ambitions primarily need to be achieved through changing the way we use our highways – especially as we look to accelerate decarbonisation.


Sept 2022


Nov 2022

## 5.3 Freight and international connectivity

Our Freight and Logistics Strategy explains the sector's importance to the North's economy, with our transport network playing a vital enabling role for our industries and businesses, particularly those in our prime economic sectors of advanced manufacturing and health innovation. Our international connectivity policy position then articulates the economic opportunity of connecting our ports and airports sustainably into our transport network.

Today, over 33% of goods enter through the Northern ports and airports, while 25% of national freight starts in the North, with the same proportion of journeys ending in the North. By 2050 the sector could be worth over £30bn and employ more than 500,000 people, providing the backbone for economic growth and decarbonisation across a range of industries and sectors[68].

The North of England's freight transport network encompasses rail, road, inland waterways, sea and airport infrastructure, in addition to a significant volume of warehousing. Combined, the North boasts a wealth of freight assets that underpin our region's strong multimodal freight capabilities and provides increasingly important capacity at a national level.

Airports in the North serve a range of destinations both domestically and internationally, with Manchester Airport being the busiest outside of London, based on passenger numbers. Manchester Airport is well connected by European carriers serving Europe, as well as various long haul operators serving locations including America, the Middle East and Asia. Commercial air services to Europe and other parts of the UK also operate from a network of airports across the North, including Newcastle, Liverpool, Leeds Bradford, Teesside International and Humberside International. Both Newcastle (Emirates) and Liverpool (Lufthansa) also support interchange to key international hubs, facilitating global connectivity for passengers and freight. Several airports in the North also support access to offshore energy infrastructure in both the North and Irish Seas, including at Humberside International and Blackpool.

The major Northern ports serving Hull and Humber, Teesport/Hartlepool and Port of Tyne provide global connectivity. The largest UK port by tonnage is Port of Immingham which is well served by highway and rail links but is constrained by access onto the East Coast Mainline.

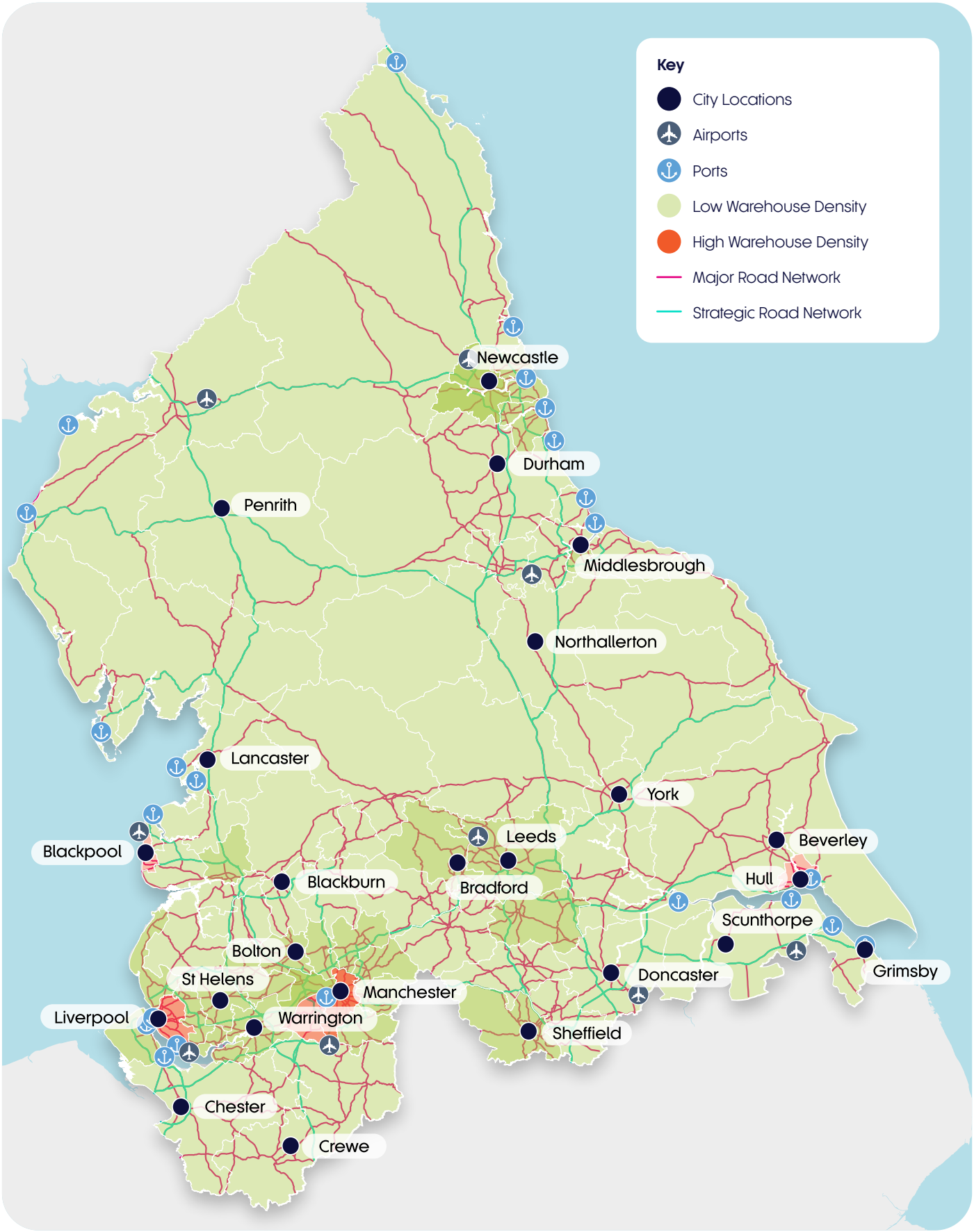
Recent expansion of the Port of Liverpool means the North can serve calls from larger post-Panamax vessels which has increased freight volumes, while also maintaining connectivity with Northern Ireland, Ireland and the Isle of Man.

Peel Ports, who run the Port of Liverpool, have recently made acquisitions in the area, expanding their reach into Ellesmere Port which can offer additional bespoke cargo solutions which reduces road mileage in cargo transport.

The North has a network of inland waterways, from which the Manchester Ship Canal and the Aire and Calder navigation are the areas of most opportunity. Proposals to expand these operations are being explored. Manchester Ship Canal offers opportunity to reduce the reliance on road-based transport from Merseyside and the Wirral into Manchester. The Aire and Calder offers the opportunity to move bulk and aggregates from the Humber Port complex into Leeds. Investment along the Aire and Calder would ensure the bridges are tall enough for Euro 2 barges to transport containers on the navigation.

Highways play a critical role in moving goods, with road transport by far the dominant mode for the movement of freight with an 87% mode share by tonne km by road in 2016[69]. The North is also an important hub for rail freight, with 56% of UK rail freight passing to, from, or within the North[70]. There are some branch lines in the North of England which are specifically used for the movement of goods, such as to the Port of Immingham or Swinden Quarry, North Yorkshire.

## Figure 5.3: TfN ports, airports and warehouse density



### Issues and opportunities for our freight network

Despite these extensive assets being available, many are not being fully utilised and therefore our region's economic, environmental and social potential is being constrained. This is due to:

- A lack of joined up infrastructure – particularly in rail connectivity where gaps in gauge clearance, track capacity or electrification are limiting timely and direct freight journeys. This presents a challenge, because most rail freight runs on lines where passenger and freight services run together
- There are bottlenecks in the network, particularly through Manchester, the West Coast Main Line between Crewe and Weaver Junction, the West Coast mainline north of Golborne, the ECML two track section through Durham, and the Midland Mainline through Sheffield. These are already heavily congested passenger service routes, leading to limited freight paths and delays in services
- 80% of road freight in the North is domestic traffic, most of which is short haul (making it difficult to justify the use of rail on commercial or efficiency grounds), which places a heavy burden the strategic road network[72].

Access to ports and airports by rail is constrained by limited capacity for passenger and freight services. For example, having more rail paths available on the ECML would open more opportunities to transport freight by rail allowing ships to make ports of call in the North and using rail to access the national markets. Improved rail access could see the east coast ports reduce the pressure on the southern ports and the Channel Tunnel.

As both air and sea bourne freight and passenger journeys are currently carbon intensive, our decarbonisation strategy identifies the important balance between the growth and opportunity for Northern development and production of alternative fuels, with requirement to reduce air, noise and vibration pollution associated with their activities. In addition, rail freight moved by diesel trains currently produces 76% lower CO2 emissions[73] than road freight, so encouraging mode shift by alleviating bottlenecks and improving price competitiveness would bring large decarbonisation benefits.

Increasing the North's international connectivity to perform at a global stage can attract and facilitate businesses and entrepreneurs to work together and reach customers and suppliers across the North, the UK and the rest of the world. This will encourage outward and inward overseas trade and investment, which will facilitate economic growth.

TfN supports better utilisation of the existing unused runway capacity at northern airports to cater for growth as part of a national strategy for rebalancing use of existing capacity. We also recognise that increases in aviation demand need to be accommodated within a national cap on demand growth of 25% by 2050. A predominantly technology led approach to reducing aviation emissions (as per national Government's current policy) is unlikely to deliver material emissions reductions prior to 2035 and introduces a significant level of risk to aviation decarbonisation should those technological options not fully deliver.

To maximise the impacts of our freight and logistics sector in delivering sustainable economic growth we require an efficient and integrated multimodal freight network, directly linked to our ports, international gateways and well-connected warehousing and consolidation sites. We also need investment in rail freight, both capacity and capability, which will support economic growth, create capacity on routes to ports and strategic rail freight interchanges and remove HGVs from our region's roads.

Our strategic priorities are:

- Developing port to port zero-carbon multimodal corridors, with a focus on maximising the economic potential of freeport status to ports and their hinterlands, as well as the potential to produce and use green fuels in our ports including HGVs, rail and maritime

- Three northern ports - Humber, Teesside and Liverpool City Region - were successful in bidding for Freeport status. They are expected to bring huge economic benefit for the areas selected, will support growth in the logistics sector, help us achieve our net zero carbon trajectory and we will work with the ports and companies located within the areas to support their development and growth

- Improving the multimodal North-South and East-West connectivity across the North, particularly focused on rail. This means increased electrification (including infill) and gauge clearance of the network, including the full delivery of the TRU and the development of rail alternative freight priority routes as well as investment from freight operating companies

- Optimising the efficient flow of goods on our road networks through improved flow of traffic supported by technology as well as decarbonise road haulage through increased usage of zero carbon and low emission fuels

- Supporting effective spatial planning, development and benefits mapping of well-connected warehousing, freight consolidation and local distribution networks consolidation sites. Reducing the impact of air pollution and noise from freight movements on the health of local communities, working with local transport authorities to develop multi modal hubs

- Maximising the utilisation of our rail and inland waterway networks, improving multimodal connectivity and local distribution hubs to improve efficiency, and encouraging modal shift from road to rail/water, to support decarbonisation and improved air quality.

## 5.4 Local connectivity

Local connectivity includes bus, light rail and active travel modes, integrated via multi-modal hubs and connected mobility (smart travel) technology, designed to deliver sustainable and integrated door-to-door journeys to match user needs. A place-based approach is especially important when developing strategic transport interventions at a local scale.

Opportunities for improving local connectivity is driven by each place's context, location and scale linking social, education, health, and economic amenities brings differing challenges across neighbourhoods, towns, cities and rural communities. All these places have similar objectives to ensure areas maximise the destinations people can reach in a reasonable amount of time at modest speeds, via all modes. Moving beyond urban areas, car dependency increases as people and places are further apart.

TfN defines local connectivity as ***"the way in which people and freight move around a localised area across all modes of transport."***


March 2022


March 2022


May 2022

Buses account for the majority of public transport journeys across the North of England[74]. Buses are the foundation of our public transport network, providing accessible, affordable and sustainable access to jobs, learning and local services. A fast, frequent and integrated bus network is vital to the North's economic success. Buses also play a key role in reducing social isolation and catalysing social mobility in rural communities, alongside supporting low income, young/old and disabled passengers.

However, too often bus journeys can be confusing for users, acting as a barrier to usage. Passengers often require multiple tickets, even on the same routes, as operators do not accept each other's ticketing products or facilitate cross local authority boundary trips. Timetables are not integrated, particularly with the wider rail network, leaving gaps in services and elongated journey times.

Increasing traffic congestion has made bus services slower, journey times unreliable and more expensive for operators to run. Compounded by a reduction in patronage following COVID-19, there has been a significant reduction in the North's bus network coverage, as less routes can operate on a purely commercial basis. This is of most significance for rural and sparsely populated areas who often have no viable public transport alternative.

A safe and inclusive transport network is also a fundamental requirement, determining how people use and perceive the transport network, especially when encouraging more people to feel confident to switch to using sustainable active modes. However, many of our areas are starting from a low base when implementing active travel schemes. This includes a lack of consistent cycle facilities at public transport hubs and a lack of consistent rules for taking bikes on trains/trams and between different operators. This combination often means that active travel infrastructure does not offer the safe, direct, accessible and consistent journey experience users require.

Our strategic priorities are then to work with our partners on the following issues:

**Buses present the quickest, easiest and most effective way to enact radical changes to our public transport system.** Bus routes can be rapidly reconfigured to match user travel patterns, support sustainable access to new housing or employment developments. Demand responsive services can dynamically fill network gaps to meet user needs outside of traditional operating hours and across rural communities, while reallocation of existing road space for bus priority can unlock significant time savings and user benefits. Many partner authorities, particularly in Mayoral Combined Authority areas are taking the first steps towards greater control of their bus networks.

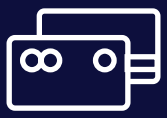
**Active travel** should be a natural choice for shorter journeys up to five miles, particularly for trips to and from public transport interchanges to integrate with public transport for longer journeys. Safe, accessible and consistent cycle and walking routes to transport links and central hubs, together with regular joining points, as well as having safe and secure lockers for bicycles or allowing bikes on public transport where possible. This ensures a seamless travel experience for the passenger throughout their whole journey. Active travel can play a key role in the physical health and mental wellbeing of our communities, while also delivering on the wider agenda to decarbonise the North's transport networks.

Utilising our analytical framework and evidence base, we will work with Active Travel England and Government to promote and unlock sustained investments, which enhance the provision, accessibility and safety of active modes to deliver modal shift. This will enable local transport authority partners, who have responsibility for local transport strategies and their delivery, to implement more ambitious and longer-term schemes.

**We will support an accelerated transition to a fully zero-emission bus network** that is essential to meet national Government, TfN and partners', decarbonisation targets. Buses provide the fastest and most significant opportunity to decarbonise road transportation.

TfN will support local partners to identify and invest in opportunities for **multimodal hubs** (including bus park and rides, interchanges and car clubs), supporting efforts to increase the number of multimodal journeys in the North. Well located and designed hubs can be critical in enabling sustainable trips across the North, transforming and revitalising communities through supporting increased density and mixed-use development, and enhancing the attractiveness of public and active transport trips across all parts of the North.

**Integrated and smart ticketing is key to encouraging sustainable travel.** Our Connected Mobility Hub is providing LTAs with additional specialist capacity in developing and deploying digital and ticketing initiatives at a local level. The hub supports our primarily non-Mayoral Combined Authority partners in delivering on their ticketing, digital and fares improvements outlined in local Bus Service Improvement Plans. The current pilot will provide support for at least 5 key connected mobility workstreams/projects in up to 5 transport authority areas, including the development of new Multi-Operator Ticketing arrangements and facilitating greater access to and use of Bus Open Data.



**Flexible and integrated multi-operator, multimodal and cross border ticketing is an essential requirement, making public transport easier and simpler to use.** Ensuring our bus network is fast, frequent, reliable, affordable and seamlessly integrated within the North's public and active transport networks can provide an attractive and viable alternative to using a private car. This must include proactively supporting the development of simpler fare structures for passengers by being the catalyst for fares reform across the North of England, as well as exploring the viability of demand responsive transport versus the viability of traditional bus services in both rural and urban communities.

**Finally, we will work to ensure that rural communities are well connected to places and opportunities across the North.** In rural areas, we will collaborate with DfT and other STBs and local partners to explore reducing car dependency, enhance access to opportunities and understand funding requirements for strengthening the public transport offer in rural areas. We are collating best practice to assist partners to identify schemes and support innovative interventions.

## 5.5 A place based approach

The successful delivery of our strategic ambitions and headline objectives can only be achieved through a collective effort nationally, regionally and locally. This can be achieved through effective transport planning and ensuring a strong golden thread through the following key policies.

- Nationally through government policy, regulation, and legislation
- Regionally through our Strategic Transport Plan (STP)
- Locally through Local Transport Plans (LTPs).

As TfN, our role is to present the collective priorities and ambitions for the North at a strategic level with a specific focus on pan-Northern connectivity. However, for the North to thrive, we require efficient, high-quality local connectivity to create an inter-connected, decarbonised strategic transport network for the entire region. We need to undertake a placed based approach to strategic transport planning. Recognising that the policy priorities for a rural and dispersed area will be significantly different from a large conurbation and that not just TfN but also our partners, through their own LTPs, must represent a multitude of places with different transport challenges.

Our nine distinct place types across the North provide a framework that can be used by our local transport authority partners as evidence to inform their own LTP process. Ultimately, within this policy context, the North's local transport authorities through their own local transport plans will make a final assessment as to what the right mix of policies are for any given area.

For local connectivity, there is a need to balance major infrastructure and long-term investments in road and rail, with local decisions around streets, junctions, stations and service patterns. Therefore, our focus for local connectivity considers all modes of transport across all place typologies, building on existing TfN workstreams in this space, as well as identifying relevant policy gaps in our evidence base as areas for further research.

While many of the policy priorities could be applicable to a range of places in the North, we have strived to identify the principal policies or areas of focus while also ensuring that these are distinctly different for each place type.

In the same way, where there is a need to consider certain environmental aspects for a place type in particular, these have been drawn out within the policy priorities. However it will be important across all place types, where new or updated infrastructure and services are proposed, that the integrity of the historical, visual and natural environment in those places is maintained and delivery authorities consider opportunities for enhancing those environmental assets wherever possible.

This section also outlines the composition of each place type using TfN's people typology introduced in the case for change and describes the potential impacts of the principal policy priorities identified for each place type on the range of people types that can be found in those types of places. The examples provided for each typology are not the only places to fall within the category and several local authorities will fall into more than one category.

Further detail on this and the supplementary policies that underpin each principal policy priority can be found in our Policy and Place Framework.

## Commuter Towns

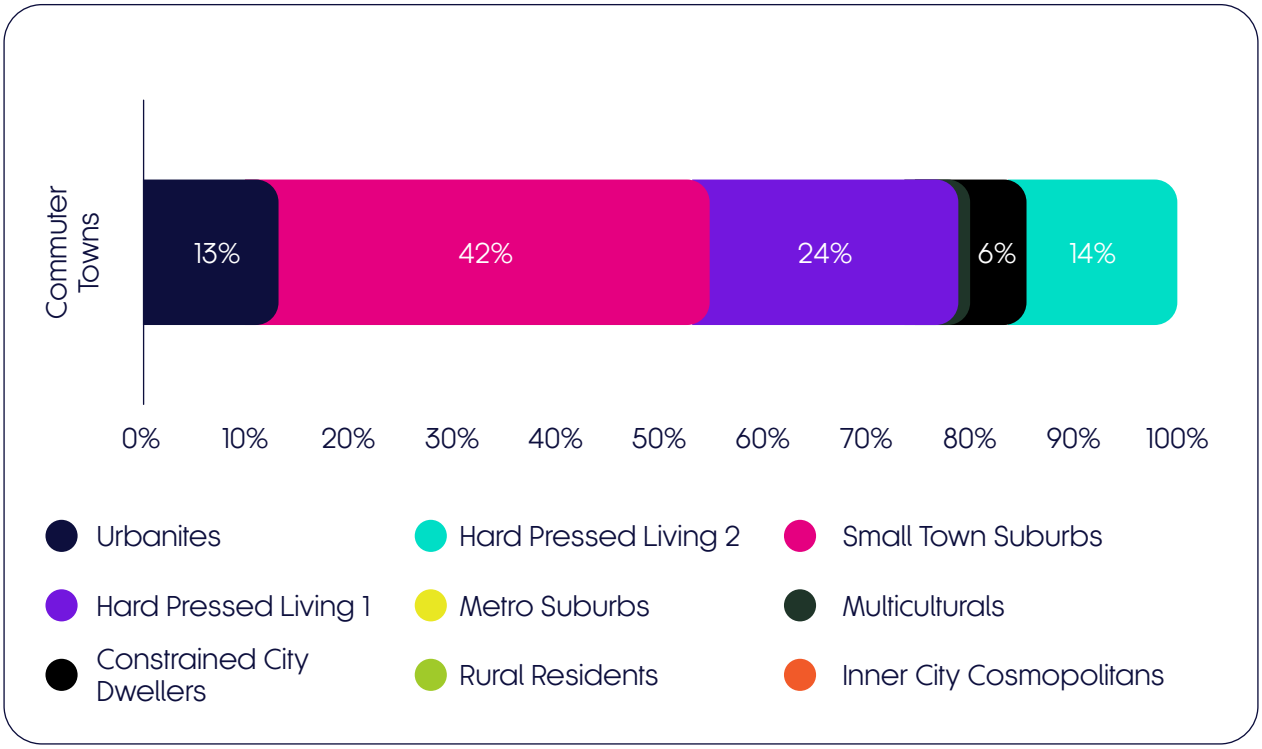
Commuter Towns are highly reliant on transport infrastructure to provide accessibility to employment opportunities across the North, including strong linkages to neighbouring Large Conurbations and strategic employment sites.

Car usage is particularly common for local and commuting trips due to the absence of viable and cost-effective public transport, and longer distances between housing and employment locations. Some commuter towns, such as Warrington, may generate a large amount of outbound commuting trips, but also inward commuting trips from surrounding towns that need to be accommodated by the transport system.

Delivering reliable multimodal hub and spoke transport options will provide sustainable and low carbon access to opportunities to and from Commuter Towns. For short and often multistage journeys within Commuter Towns active travel and reliable bus services should be the natural choice. A holistic approach to spatial and transport planning should seek to reduce car dependency in Commuter Towns with road reallocation, decoupling parking provision from development and new green and blue infrastructure all providing opportunities for change.

Examples: Areas across Lancashire (Preston, Burnley), North Yorkshire (Harrogate, Northallerton), parts of the East Riding of Yorkshire (Howden, Driffield), Warrington and Congleton.

**What impact might these policies have on the North's people?**




Commuter Towns feature a mix of people types, with Small Town Suburbs (42%) and Hard Pressed Living 1 (24%) being predominant. Small Town Suburbs travel further distances overall than almost any other segment, travel some of the longest distances to work and are highly car dependent. This segment would benefit from faster and cheaper public transport options for commuting as an alternative to the car. Improved public transport services and active travel infrastructure would also benefit those in Small Town Suburbs and Hard Pressed Living 1 who do not commute to neighbouring cities, by improving connectivity to local employment opportunities and facilitating essential and leisure journeys, particularly for those who have low qualifications and/or do not own a car.

**Jane**

**Jamie**

**Laura**

**Malcolm**

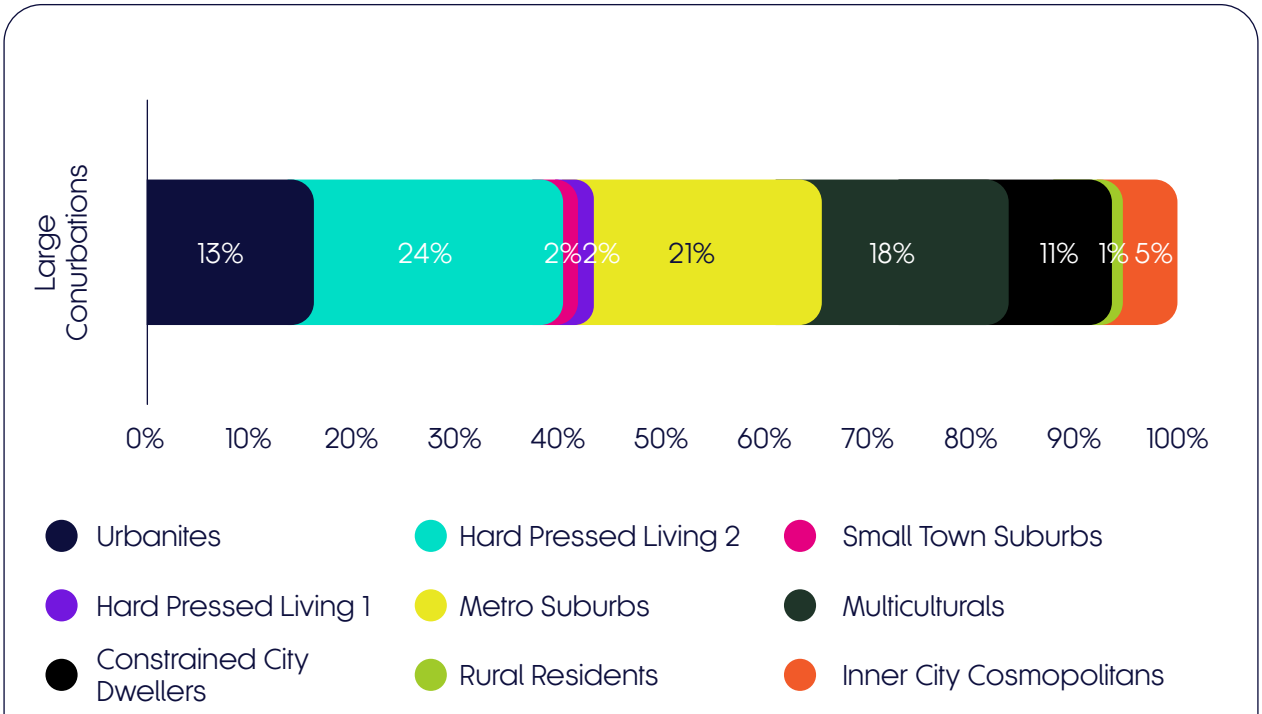
## Large Conurbations

Large Conurbations contain 51% of the North's population, can also be places of great variation and often face challenges around deprivation and poverty. They also benefit significantly from economic agglomeration and generate greater productivity than the northern average.

Large Conurbations increase their public transport demand closer to the city centre, as population density increases. As such, there are many public transport and active travel trips within cities, and a fair share of private vehicle usage to nearby towns, between other towns and to-and-from the city centre. Large Conurbations are also the areas which often face the most acute air and noise quality issues, particularly around arterial routes, and the Strategic and Major Road Networks. Therefore, policies which support viable sustainable transport options and improved connectivity within them should be the priority in Large Conurbations. Our Large Conurbations should be attractive, lively, and exciting places that people want to spend time in, drawing in visitors from across the North to work, shop and socialise. Policies to encourage sustainable transport are critical to supporting economic growth and ensuring equitable development. Integrated and affordable public transport will allow the implementation of demand management policies that can provide short- and medium-term increases in modal shift, away from private car use. Densification can also support reducing travel distances in urban areas. Within urban locations, interventions which promote increased reliability and efficiency across the transport network, as well as shorter travel distances are most likely to benefit businesses in these areas. Decarbonising transport fleets is key for achieving national decarbonisation targets.

Examples: Major cities including Manchester, Leeds and Bradford, Liverpool, Newcastle upon Tyne and Sheffield.

**What impact might these policies have on the North's people?**




Reflecting the fact Large Conurbations contain 51% of the North's population, this place type has one of the most diverse arrays of people segments. Policies which support viable sustainable travel options and improved connectivity in Large Conurbations will therefore benefit a wide range of people segments (including Hard Pressed Living 2, Metro Suburbs, Multiculturals, and Urbanites, among others) by connecting them to employment and education opportunities and facilitating essential and leisure journeys, while reducing congestion, air pollution and noise. Large Conurbations are home to high shares of Multiculturals, Constrained City Dwellers and Inner City Cosmopolitans – segments which have the lowest car ownership (around 50%) and rely heavily on public transport and active travel.

**Danielle**

**Mark**

**Laura**

**Zarah**

**David**

**Kemi**

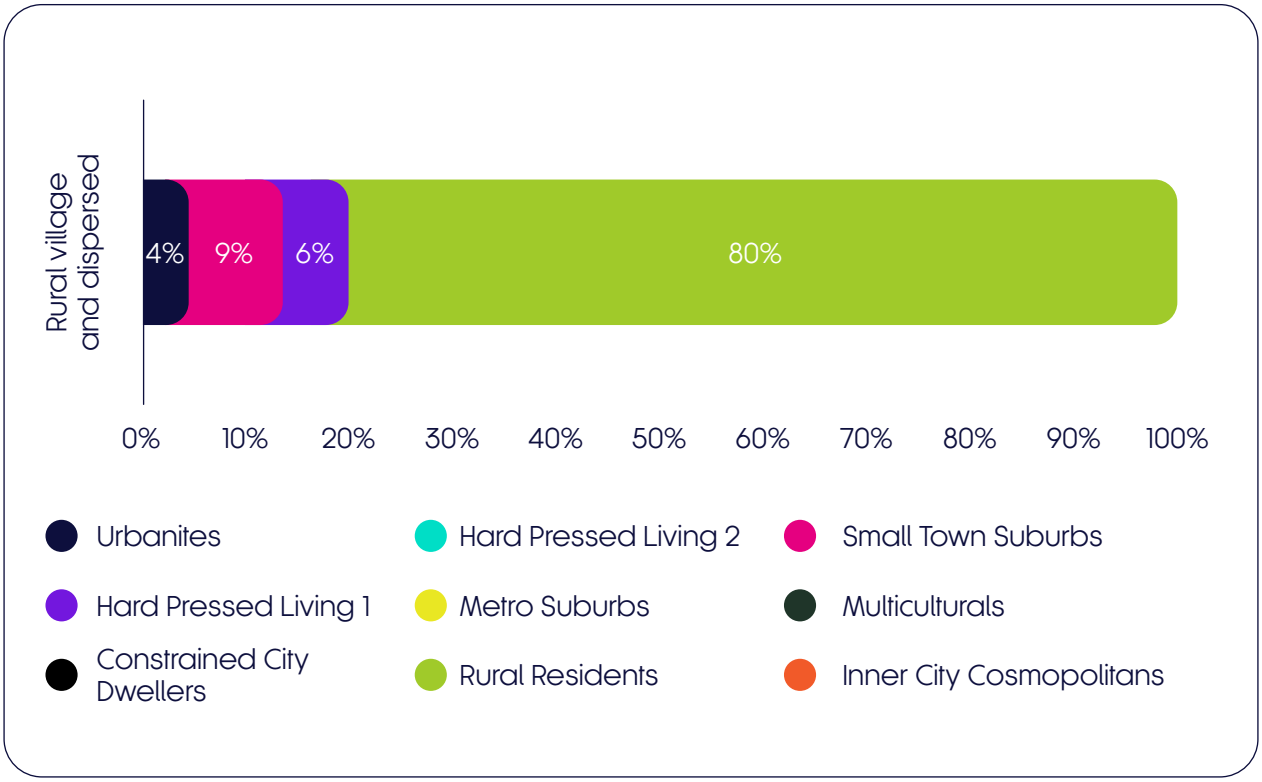
## Rural Villages and Dispersed

Rural Villages and Dispersed locations are generally characterised by long distances, poor accessibility and high levels of car dependence which create difficulties for implementation and encouragement of more sustainable travel modes. The 'right share' for this typology will be different to the pan-Northern target set in the Plan's vision and objectives, as private vehicle is still likely to prevail on the modal share.

Rural Villages need to become places with a wider range of transport options as they have typically not been well-served by public transport. This needs to be addressed through spatial, transport and digital solutions. Public transport needs to be an attractive and affordable alternative to cars, serving the communities favourably in terms of reliability, journey times and coverage. Community based transport will play a key role in connecting rural villages and dispersed with their commuting and leisure needs, and with the existing transport infrastructure, for access to wider services and amenities. Recognising the high private vehicle usage, it is important to ensure an equtiable transition to zero emission vehicles in these places. Policy aims should look to make private vehicle travel more sustainable, for example by switching to electric vehicles, community-led car clubs and goverment to support the shift in agricultural vehicles. Likely to need behavioural nudges to uptake new travel options whilst also encouraging public transport patronage where available. Active awareness campaigns, training and fare incentives should be considered for car clubs, demand responsive transport and scheduled bus services.

Examples: These areas are mostly found interspersed with Visitor Destinations such as Northumberland and Cumbria although they can also be found in sporadic locations including directly north of Liverpool, North Lincolnshire, West Lancashire, and surrounding Carlisle.

**What impact might these policies have on the North's people?**




Rural Villages and Dispersed is the most concentrated place type in terms of the variety of people segments present, with Rural Residents accounting for 80% of the population. Rural Residents travel greater distances than any other segment and are the most car-dependent, with 89% of overall distance travelled by this segment attributed to car travel. A focus on the transition to electric vehicles and community-led car clubs will provide more sustainable options for Rural Residents who travel by car, particularly for commuting purposes, while more extensive and reliable public transport connectivity, demand responsive transport and community-based transport services will provide more options for everyone, encouraging modal shift and providing significant economic and social benefits for Rural Residents without access to a private car.

**Jane**

**Malcolm**

## Rural Town and Fringe

Rural Town and Fringe areas include rural that are within closer proximity to nearby towns and cities. Unlike Visitor Destinations, Rural Town and Fringe areas rely less on the tourism sector for employment, with a broader mix across sectors.

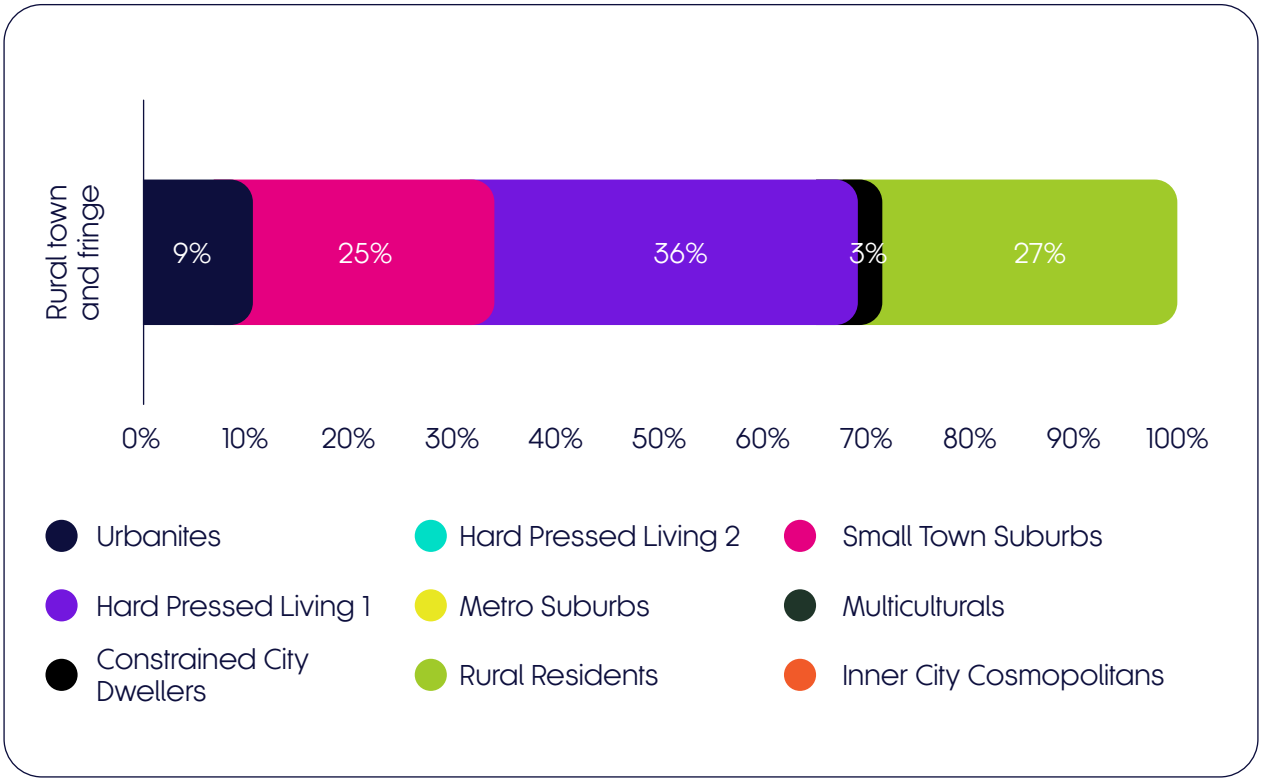
Low population densities pose a challenge to connecting residents to economic and social opportunities. An ageing population is likely to travel less, by all modes, due to physical accessibility and health issues. Consequently, there is a high amount of the population living at high risk of Transport Related Social Exclusion (TRSE). Levels of local transport services, particularly bus services, have declined in the last decade, leading to increased car dependency and severance due to major road infrastructure contributing to the risk for TRSE.

These places are close to other towns and cities. Therefore, they could benefit from improved transport connectivity through demand responsive bus services and integration to urban services. These may need to be publicly funded to maintain the levels of services needed, to support sustainable transport options to deliver net zero in these areas.

Transport has the potential to improve the health of rural communities, through encouragement of active travel primarily for leisure trips rather than commuting given the distances between key centres. Walking and cycling infrastructure should be designed inclusively, particularly considering the ageing population, as car usage decreases dramatically for these groups. Making roads and pavements safer needs to be a priority, particularly for active travellers, as they are the most vulnerable users of the road and considering that across the North, retired people make an average of 19.5% of their journeys on foot. Implementation of new travel opportunities must simultaneously address the reliability and resilience of the road network, as often places in this typology have one road access making accessibility vulnerable to infrastructure failures.

Examples: Selby, North Lincolnshire, Hambleton, Hartford, areas near Hull and areas along the west coast of Cumbria.

**What impact might these policies have on the North's people?**




Rural Town and Fringe place type has a more diverse mix of people segments than Rural Village and Dispersed, including Hard Pressed Living 1 (36%), Rural Residents (27%) as well as Small Town Suburbs (25%). These people segments are highly car-dependent, with a high risk of TRSE for those experiencing forced car ownership due to a lack of viable travel alternatives, and for those without access to a private car. For each of these segments, increasing the range of viable travel options, centred around public transport services and active travel, will provide more sustainable access to a greater range of employment, education and leisure opportunities and key services such as healthcare, both locally and in neighbouring towns and cities.

**Jamie**

**Jane**

**Malcolm**

## Transformational Places

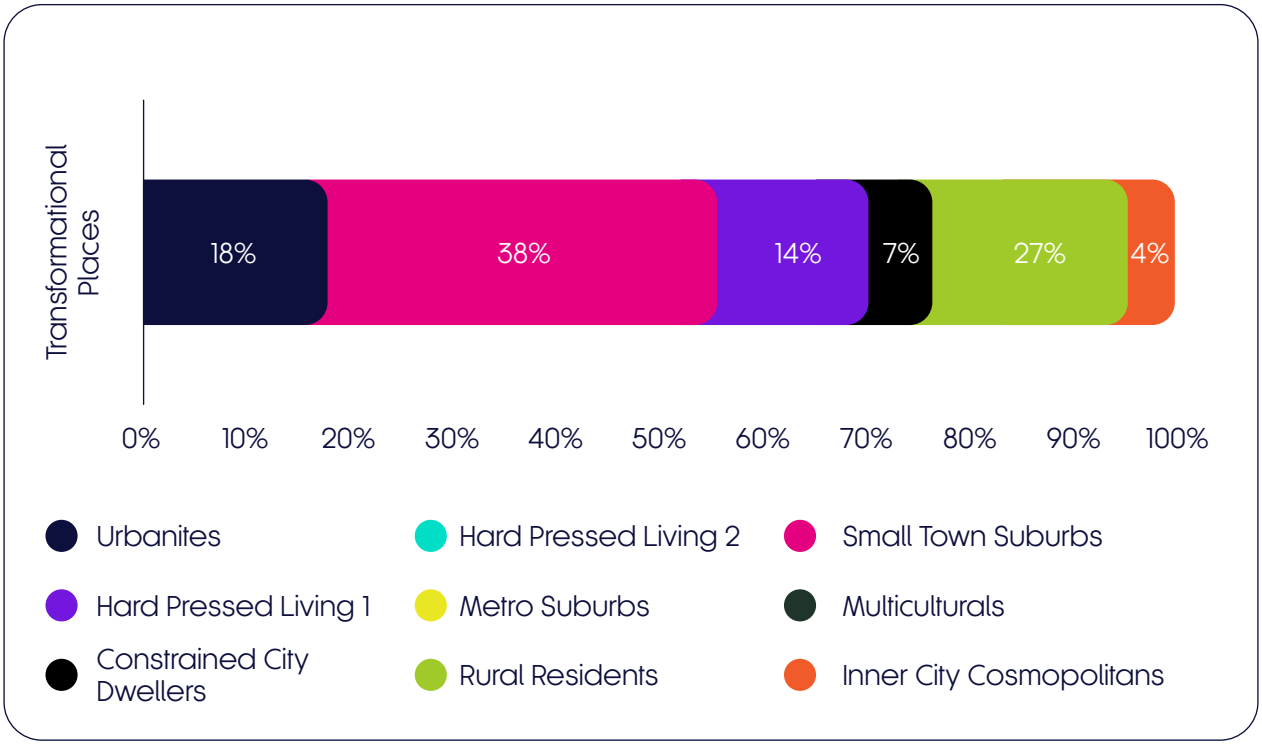
Due to the variation within Transformational Places several represent dynamic and successful local economies whilst other places face a variety of economic and transport constraints, and market failures.

Given their often semi-rural and dispersed geography, Transformational Places are highly reliant on their transport infrastructure. Infrastructure must facilitate sustainable and flexible commuting flows to key employment sites and neighbouring Large Conurbations, as well as catering for high levels of logistics delivery trips due to low population densities. Ensuring that transport connectivity is sufficient to continue to attract investment remains a key issue of many Transformational Places and their economic sectors, particularly improving links to international gateways for export-related firms in advanced manufacturing.

Transformational Places provide a significant opportunity for rapid transport decarbonisation. Transport policy should be focused to reduce car dependency, particularly for new residential and industrial sites, through planning policy that builds active travel and public transport into the fabric of communities. Given the high levels of GVA and high car ownership, policies are required to increase the convenience and attractiveness of public transport, relative to private car use. At the same time, with higher economic outputs, there is a greater propensity for early adoption to electric vehicles, with associated consideration for supporting this transition with adequate charging infrastructure. To support continued inward investment in advanced manufacturing, consolidation centres should be situated adjacent to the strategic rail or road network with direct access to key gateway ports and airports for exports to international markets; helping to reduce unnecessary trips by shortening supply chains.

Examples: York, Cheshire East, Redcar and Cleveland, West Cumbria and South Ribble.

**What impact might these policies have on the North's people?**




Reflecting their variety and wide geographic spread across the North, Transformational Places are home to a varied mix of suburban and rural people segments, including Small Town Suburbs (38%), Rural Residents (19%), Urbanites (18%) and Hard Pressed Living 1 (14%). Most of these segments are highly car-dependent and would benefit from opportunities to take up electric vehicles and/or car clubs to make their journeys more sustainable, particularly for commuting purposes. Better public transport options are also needed to encourage greater use of rail and bus for commuting – Urbanites for example already demonstrate comparatively high use of rail for commuting. For segments such as Hard Pressed Living 1, which have lower levels of qualifications, and travel shorter distances, improvements in transport infrastructure would improve access to economic and education opportunities, particularly with improved access to locally significant employment sites in isolated locations.

**Jamie**

**Laura**

**Malcolm**

**Jane**

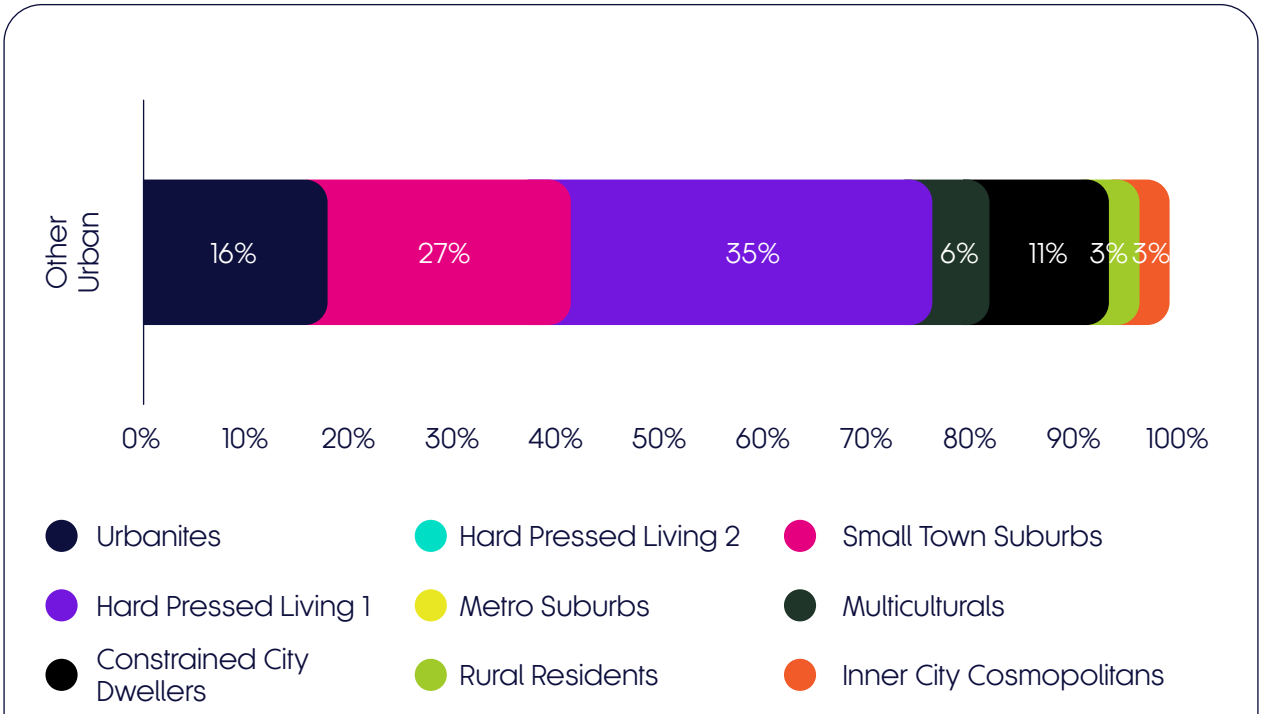
## Other Urban

Other Urban areas have the second highest population density of all the typologies across the North, with lower population growth of 1% compared to the Northern average of 1.5%. They are distinguished from Industrial Places by having a low number of people working in traditional industries (3.4%) and a high number of people working in the Public Sector (38.7%), similar to Towns within Metropolitan Counties. Like Industrial Places and Towns within Metropolitan Counties, Other Urban areas have a low percentage of people with level four qualifications or above, a small percentage of people working in KIBS and have an above average unemployment rate (though not quite as high as industrial areas).

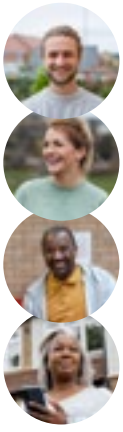
Effectively, they represent a more geographically focussed version of Towns within Metropolitan Counties, with a similar employment breakdown, but are more geographically isolated and further from the Larger Conurbations.

Examples: Near or within smaller cities and larger towns like Carlisle, Workington, Whitehaven, Ellesmere Port and Middlesbrough.

**What impact might these policies have on the North's people?**




In common with Former Metropolitan Counties, Other Urban areas have a mix of predominantly suburban-based, car-dependent people segments, including Hard Pressed Living 1 (35%), Small Town Suburbs (27%) and Urbanites (16%) and share somewhat similar economic challenges to Former Metropolitan Counties and Industrial Places. Policies to complement the existing rail network in Other Urban areas with affordable public transport provision and active travel infrastructure will provide better and more sustainable connectivity to economic and social opportunities for residents and improve their quality of life, particularly when coupled with other urban regeneration initiatives.



**Jamie**

**Laura**

**David**

**Jane**

## Visitor Destinations

While all parts of the North have key visitor destinations or attractions our definition of Visitor Destinations is focused on rural destinations and towns that attract large numbers of seasonal tourists each year. They tend to be within and surrounding national parks and Areas of Outstanding Natural Beauty or areas of historical significance and some coastal resorts.

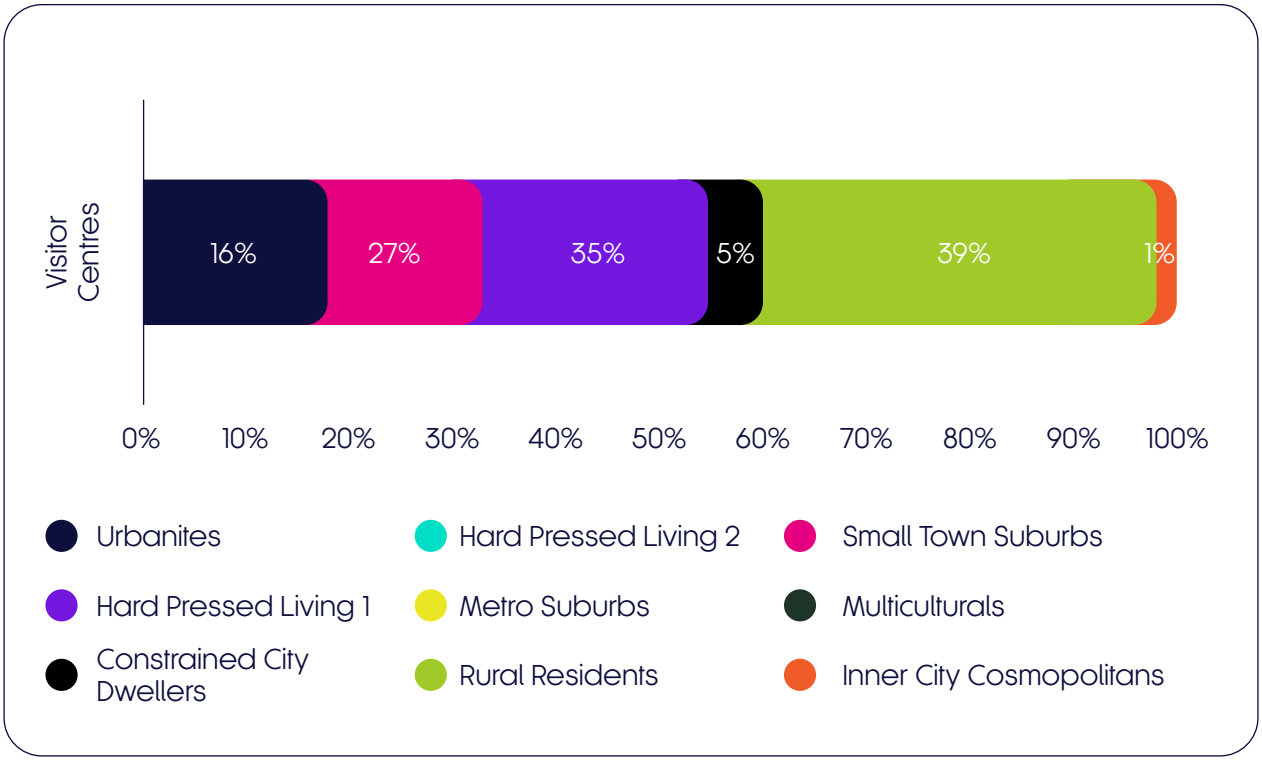
The seasonal nature of visitor destinations requires a careful consideration for the transport infrastructure and modal splits in these areas. Consequently, there are two different but equally significant user groups: tourists and local population. Policies must accommodate the seasonal demand of tourists whilst also supporting the needs of the local population, particularly addressing the above average risk for Transport Related Social Exclusion.

Visitor destinations are attractive places for tourists. Therefore, policies should be mindful of the need to conserve and enhance both the natural and historic environments which generate tourism demand, as well as enhancing local transport provision and encourage local regeneration to benefit residents. Encouraging sustainable first and last visitor mile trips whilst preserving the natural environment, landscape and the historic and cultural assets of visitor destinations. To support this policies should consider safer roads and footpaths for all users combined with better path finding.

Due to high car dependency and low density, the 'right share' for this typology will be different to the pan-Northern target set within this Plan, including different splits between tourists and the local population. However, the policies are aiming to encourage tourists to arrive to Visitor Destinations by public transport.

Examples: Areas near or in national parks, Northumberland, Cumbria, Blackpool and Whitby.

**What impact might these policies have on the North's people?**




In keeping with their predominantly rural character, the most common people segment in Visitor Destinations is Rural Residents (39%), but they also have notable shares of Hard Pressed Living 1 (22%), Small Town Suburbs (18%) and Urbanites (15%). The benefits that these groups of residents could derive from the above policies will therefore be varied, but most will enjoy a better quality of life from the reduction in congestion and negative environmental and social externalities arising from tourist visits. Better transport connectivity within Visitor Destinations and to neighbouring towns and cities will offer broader and more sustainable access to employment and social opportunities, whether locally or further afield, to all segments, with particularly beneficial impacts for the segments with lower qualification levels such as Hard Pressed Living 1.

**Malcolm**

**Jamie**

**Jane**

**Laura**

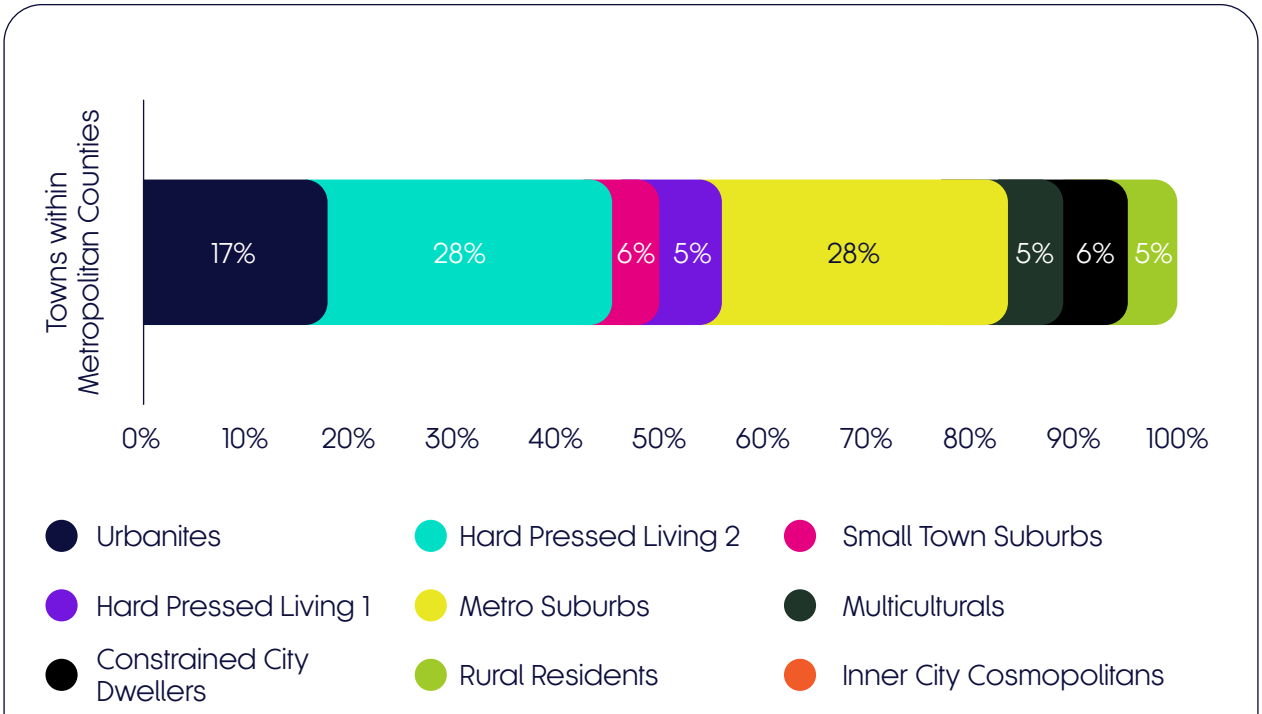
## Towns within Metropolitan Counties


Towns within Metropolitan Counties face a similar set of challenges around both attracting business investment and improving skills as Industrial Places. Due to the major roads near and in towns within Metropolitan Counties, there is severance and negative environmental externalities. There is a strong case for improving their town centres to attract more business investment, increasing job opportunities.

Due to their proximity to Large Conurbations and high percentage of people commuting, there is an opportunity for connectivity to large urban centres (with stronger employment markets) to support labour supply effects and address the risk of transport-related social exclusion linked to basic service access in these areas. More efficient bus services and active travel upgrades can sow the seeds for future densification.  Many towns in these areas already benefit from well-used railway stations. This needs to be balanced with local regeneration and improvement of town centres to avoid excessive amounts of commuting in peak hours and encourage more local trips, hence, the first policy focuses on 15/20-minute neighbourhoods. To further local regeneration in the future, densification should be a long-term goal.

Examples: Keighley, Barnsley, parts of Kirklees and Calderdale, Southport and Doncaster.

**What impact might these policies have on the North's people?**




Towns within Metropolitan Counties are predominantly comprised of suburban-based people segments which are closer to Large Conurbations, including Metro Suburbs (28%), Hard Pressed Living 2 (28%) and to a lesser extent also Urbanites (17%). Among these segments there is a comparatively high prevalence of commuting to neighbouring city centres, and improved rail and bus connectivity to these employment centres would provide residents sustainable access to a potentially wider range of economic opportunities and facilitate better skills matching. At the same time, investment in local public transport and active travel infrastructure would support local regeneration, providing more economic opportunities locally as an alternative to commuting to nearby cities (particularly benefitting groups such as Hard Pressed Living 2 who tend to travel shorter distances to work) and supporting essential and social journeys in the local area for all segments.

**Mark**

**Danielle**

**Laura**

## Industrial Places

Industrial Places are areas where employment is focused around 'traditional' industries, with typically lower levels of productivity and higher levels of economic inactivity and unemployment. Typically located surrounding Large Conurbations such as Liverpool, Manchester and Sheffield, together with other large urban areas such as Hull and Carlisle.

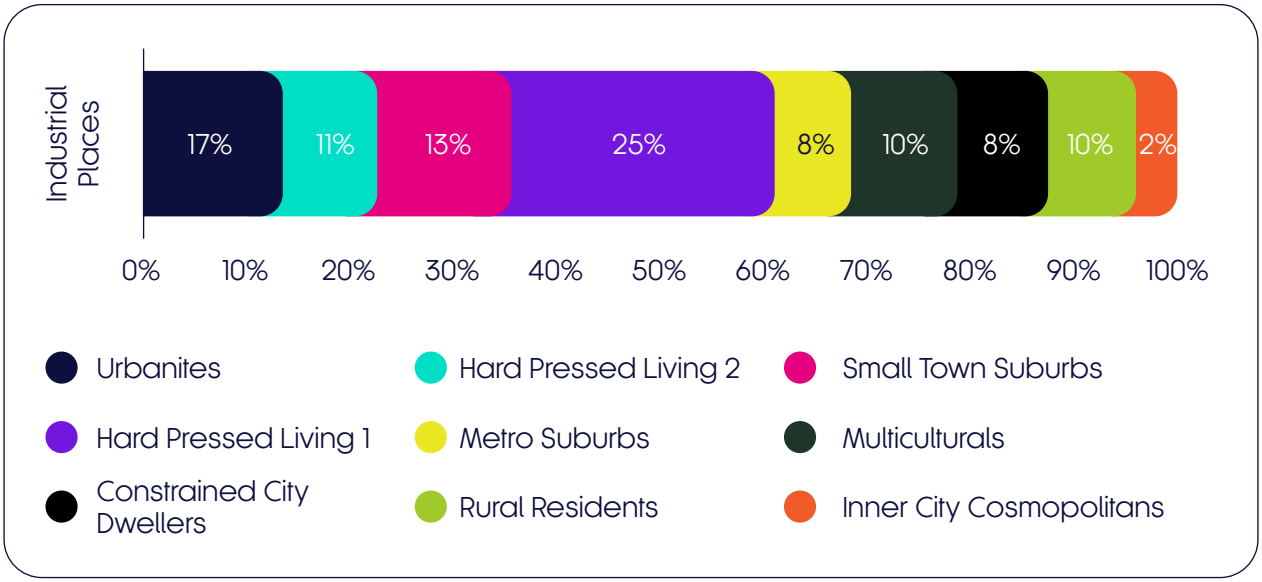
Industrial Places face several challenges around encouraging inward business investment, particularly in their potential strengths in advanced manufacturing and encouraging greater labour market participation. Improved connectivity to employment centres and regenerating neighbourhoods is required to both attract investment where existing accessibility is poor (provided other, complementary investment is made in skills and training), and support labour supply effects where they better connect regions to areas with high employment densities and job vacancies.

These types of places generate significant volumes of business and freight traffic, largely due to a greater proportion of employment within the manufacturing, logistics and distribution sectors which rely on the highway network. Policies focused on protecting, enhancing and improving access to historical assets and townscapes, which form part of the transport infrastructure network such as stations and viaducts, are esential for this place type.

Tackling transport related social exclusion is a priority in this typology as 40.7% of the population lives in high-risk areas. This requires significant investment in local public transport to employment centres, education and health services, including out of town locations. Public transport should operate sufficiently within evenings and weekends, enabling access to work with irregular hours, including shift work. This will ensure everyone, including non-car users and vulnerable groups, are able to access opportunities, which will have economic as well as social and wellbeing benefits.

Examples: Colne, Areas of Barnsley and Calderdale, County Durham, Gateshead, Hyndburn and Doncaster.

**What impact might these policies have on the North's people?**




Industrial Places are the most diverse place type in terms of people segments represented, with a quarter of the population accounted for by the Hard Pressed Living 1 segment and the remainder split relatively evenly across the other segments. This means that the potential benefits from transport improvements will vary depending on each segment's socio-economic characteristics and proximity to economic and social opportunities, however given that over 50% of the population in Industrial Places are in the more economically deprived people segments, these groups would benefit from better accessibility to employment and education opportunities locally and to nearby larger employment centres, coupled with policies intended to encourage local economic regeneration. Investment in sustainable, reliable, and affordable local transport connectivity will also help reduce transport-related social exclusion which many of these segments are at a high risk from.


**Jamie**


**Jane**


**Laura**


**Danielle**

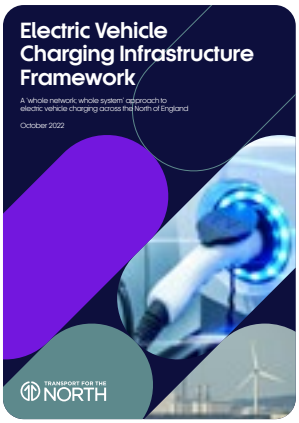

**Zarah**


**Malcolm**

Our place-based approach can help to create more liveable communities facilitating greater opportunities for decarbonisation, and improving health and wellbeing for all. Aligning spatial and transport planning, such as by providing better accessibility to services, is critical to achieving those outcomes.

If we are to harness the opportunities available in a post-pandemic world, we also need to change the way we plan for, develop and deliver transport infrastructure and services. While transport investment can be a catalyst for change, it is not sufficient alone and alignment with investment in other areas of public policy is needed including skills, housing and place making.

We have an enabling role in spatial planning by providing the wider infrastructure context, as to ensure pan-northern connectivity and support cross-boundary development, within which Local Plans can be prepared. Our innovative analytical tools are rapidly opening up new areas of collaboration with the energy, housing and planning sectors.




**Oct 2022**

The opportunity now is to align our spatial plans to ensure they unlock new housing, work and leisure sites that is active and public transport focused.

This Plan reinforces our key role in working across sectors to promote the clean growth opportunities from developing and producing alternative low carbon fuels and emerging low carbon technologies. This includes partnering with our energy distribution networks and industry to understand the feasibility and infrastructure requirements to create a viable low carbon refuelling network for both light and heavy-duty transport users. This is demonstrated through our EV Charging Infrastructure framework and data tool, as well as our ongoing work to visualise a pipeline supplied northern hydrogen refuelling network.

Our spatial planning framework provides a mechanism for partners to consider the transport objectives of the Plan within their own spatial plans and development strategies. We can help by supporting a 'bottom-up' assessment of the development impacts on neighbouring local planning authorities and the level of accessibility of the proposed development via all transport modes. Through using our analytical framework, we can help align strategic planning outcomes and integration opportunities to deliver our combined economic, social and environmental vision, as outlined in the case study opposite.

**Electric Vehicle Charging Infrastructure (EVCI) – triple access planning in action.**

Reducing the environmental impact of road transport is critical if we are to meet UK legal requirements for decarbonisation. Our region's roads are by far the largest transport emitter of carbon emissions (23% of UK road emissions; 6% of total UK emissions)[75].

One of the key solutions to reach transport decarbonisation targets will be the uptake of electric vehicles, supported by a rapid rollout of EVCI, which are more suited in specific places. Our EVCI framework[76] sets out the scale and pace of enabling charging infrastructure deployment required across our region to support a rapid and consistent transition to electric vehicles, which supports our regional decarbonisation trajectory.

Working with the private sector to target the required investment we can help support the case for electric vehicle charging investment and deliver the density and coverage of charge points to meet user needs.

Our whole network, whole systems approach provides the means to make better assessments regarding the many social and spatial considerations associated with electric vehicle charging infrastructure. That is why we have made our EVCI framework openly available and will continue working collaboratively with public and private stakeholders across transport, energy, and spatial sectors to unlock delivery and investment right across the region.

Our innovative analytical and modelling capabilities continue to develop, and we will continue to enhance outputs available from the EVCI Framework which contribute meaningfully to a fair and inclusive decarbonisation of transport.

However, the transport planning system in the UK often struggles to meet these challenges, taking a siloed approach to funding, with limited opportunities for places to plan and take coordinated action as part of a systems approach. At the heart of this challenge is an over centralisation of decision making and investment processes, and a constrained view of future growth. TfN and other bodies such as the National Infrastructure Commission have taken a longer term, holistic view of future connectivity requirements to present a long-term view of what is required.

## 5.6 Conclusion

To deliver our vision, we need our transport systems, whether national, regional or local to work efficiently and effectively together. It is crucial that pan-northern road and rail networks are seamlessly integrated with our national networks, local roads and public transport systems; that spatial planning supports effective multimodal hubs, as well as walking and cycling networks. Fares must be integrated, smart, affordable, and simple to understand.

While interventions to support local roads, local public modes, walking and cycling are primarily the responsibility of our local transport authorities, they are important enablers to reduce congestion, encourage shift to sustainable modes and are essential in creating a more integrated, healthy and resilient overall transport system. As such, they are vital to achieving our collective ambitions and decarbonisation outcomes.

Given the scale of these challenges, investment is required to support both pan-northern connectivity and local transport systems. That investment must recognise:

- Our rail network and wider connections must transform the access to opportunities for millions of people, recognising the need to move beyond the current crisis and take clear steps to create capacity for passenger and freight growth over a sustained period of investment
- The critical importance of the North's road network to our economy and supporting our modern society. Roads are a multimodal asset and provide the public space we all use to move around, whether that be on foot by bike, bus or car, as such they are an essential community asset. We need to choose how the space available is used in order to meet our need to decarbonise, maintain access for freight and encourage active travel
- The importance of local connectivity and multimodal integration in providing door-to-door sustainable transport for people and goods. There is a need invest in improving local connectivity and how this helps address the extent to which our current transport system too often acts as a barrier and how this represents an opportunity to decarbonise transport.

There is also a clear need for public transport modes to work together in an integrated way that creates a genuinely attractive alternative for car use for a wide range of journeys. The importance of investing in surface access to international gateways for passengers and freight, recognising our ports and airports as key economic assets and the need to align investment across our transport system to achieve an integrated, affordable and connected network. That requires a mix of technology, behavioural changes and mode-shift solutions.

To avoid the risk of increase in private vehicle milage, we need to focus on reducing the need for motorised travel and support for a higher proportion of travel by public transport. This will support our transport objectives of reducing congestion, increase operational efficiency, and improve air quality and health.

Following the lead of other transport bodies in the UK, we are proposing a "right share" metric that will support efforts to reduce car dependency and create the capacity required to accommodate growth on our public transport networks, so that:

- → The share of trips made by public transport increases to 15% by 2050 (currently 7%)
- → The share of trips made by active modes increases to 36% by 2050 (currently 27%)
- → There is zero overall regional increase in private car vehicle mileage on the North's road network to 2045, against a baseline of 78.2 billion in 2018.
- → Double the share of freight (measured as tonne km) carried by rail from 8.5% to 17% by 2050.

Through our evidence base and analytical tools, we will provide support to our local authority partners in the preparation of their local transport plans and defining the 'right mix' of modal targets for their different places. Our Clean Mobility vision and Quantified Carbon Reduction workstreams will help to identify those interventions most likely to reduce vehicle mileage for different places and the intensity of interventions required.

# 6.

# Action and impact framework

This Plan has demonstrated the scale of change needed to deliver the required outcomes the North wants to see, as well as the significant challenges faced by the current state of the transport system. The implementation of this ambitious and challenging Plan will require a concerted sustained effort across the region. This will require the North and its partners to:

- **Move at pace to secure and deliver the investment** in infrastructure and services that improve connectivity, particularly to meet the requirement to achieve net-zero carbon
- Harness the opportunities available in a post-pandemic world to **change the way we plan for, develop and deliver transport infrastructure** and services
- Work to **align investment in transport with other strategic infrastructure** investment to achieve the North's ambition.

## Action and impact framework

Since being established in 2018, TfN has developed a strong reputation for clear forward thinking on transport issues, industry-leading technical expertise, local knowledge and relationships that allow us to be:

- → A **centre of technical excellence** for the North – holding and collating information and analytical tools that are available to all partners
- → A **source of trusted information** – one that is available to all our partners locally, regionally and nationally as a foundation on which to develop solutions
- → A **strategic thought leader** and champion of strategic transport planning – one that ensures the linkages between transport, digital and energy systems are reflected in decision making
- → An **enabler of accelerated delivery** – applying our capability and capacity in support of our partners as they bring forward solutions for implementation
- → A **trusted collaborator** – working with partners (nationally and across the North) in order to maximise the leverage of its own activity to the benefit of our communities and businesses.

As a statutory body a key role for us is to make evidence-based recommendations to government on funding, sequencing and implementation of transport investment. To support that we will introduce a series of processes that will enable a holistic approach to providing regular progress updates and reporting on the impact of this Plan to the TfN Board. We will also ensure the assessments feed into our other processes, such as the annual business plan.

We will work with our delivery partners, businesses, the transport industry, and Government to support the delivery of schemes, influence policy and ensure over the next parliament we are on track to deliver on our intermediate 2030 targets and long term 2050 objectives.

Our **Policy Action and Implementation Plan**, brings together several processes at TfN to ensure that the objectives, measures of success and key performance indicators in this Plan are assessed in terms of their impact at a local and pan-northern level, as well as responding to new and emerging policy areas. There are three component parts.

- **TfN Policy Development framework** – a mechanism for us to assess what further policy development and evidence generation should be taken forward
- **TfN Monitoring and Evaluation (M&E) framework** – consists of the series of headline, core, and supplementary metrics developed in collaboration with partners that can be used to monitor the effectiveness of this Plan
- **Annual action plan and KPIs** – built into business planning processes from FY 23/24, the addition of an annual action plan will more clearly articulate how we are performing against our headline and core objectives as well as setting out what we have done as an organisation to support delivery of our vision.

All these processes will provide an additional layer of robustness to our policy making and will help us identify any problem areas where we may be underperforming. This will be particularly important when considering the short and medium- term targets established earlier in this document. As such, we may need to work with our Board to reconsider our approach to ensure we are doing everything we can to deliver on our collective vision. A real example of this could be the provision of adequate electric vehicle charge points across the North to meet national government's 2025 ambitions.

## Monitoring and evaluation

One of the key principles of this Plan is to be outcome focused. Our Monitoring and Evaluation Framework provides us a mechanism to do just that through a series of headline, core and supplementary metrics, developed in collaboration with our partners. We will monitor the effectiveness of this Plan, reporting against the Monitoring and Evaluation framework. This will allow us to monitor the effectiveness of our Plan on an annual basis.. These metrics are split into the following categories:

- **Headline objectives (20 metrics)**
  Ambitious, long term and transformative and linked to targets and trajectories. These represent the highest profile, public facing objectives that will drive TfN's strategic focus

- **Core metrics (58 metrics)**
  Provide key evidence required to monitor the road and rail networks in the short to medium term and will form a fundamental part of monitoring our Plan. Here a 'good is' target is usually sufficient rather than specific targets

- **Supplementary metrics (20 metrics)**
  Provide supporting evidence to understand the wider context of the transport system.

For each ambition there are several sub-themes which together represent relevant aspects of the objective and an overview of the best current available metrics. TfN's metrics are designed to complement and inform KPIs of delivery bodies such as National Highways and Network Rail and partner authority local transport plan objectives.

It is important to note that these are ambitious pan-northern targets or end states which clearly align to the outcomes the North wants to see delivered as set out throughout this Plan. However, given the unique geographic and social differences across parts of the North not all these targets will translate down to a local level. As set out earlier in this Plan, partners' own local transport plans will set their own priorities which may see some of our partners committing to go further and faster than these pan-northern targets, whereas in other parts of the North the full suite of targets may not be applicable. We also recognise that not all the targets fall within TfN's direct control, as such it will require buy in at the national and local level to help deliver progress against the metrics.

The table below provides a summary of the headline (2050) and interim (2030) objectives included as part of this Plan. A more detailed version of this list can be found in the TfN Monitoring and Evaluation Strategy.

## Table 6.1: STP ambitions and supporting metrics

### Transforming economic performance

| Medium tern pan-northern target (2030) | Long term pan-northern target (2050) | Baseline (year) |
|---|---|---|
| Begin to close the productivity gap between the North and the average for the rest of England excluding London | Close the productivity gap between the North and the average for the rest of England excluding London by 2050 | 11% (2019)[77] |
| | 37% of the North's population can access 500,000 jobs by rail within 60 minutes by 2050 | 27% (2018)[78] |
| 68% of the North's population can access an employment centre with at least 5,000 jobs by public transport within 30 minutes by 2030 | 75% of the North's population can access an employment centre with at least 5,000 jobs by public transport within 30 minutes by 2050 | 63% (2019)[79] |
| Improve overall journey time reliability compared to 2019 levels; primarily achieved through a strong emphasis on encouraging modal shift to public transport, rail and active travel | Reduce the proportion of the Major Road Network experiencing excessively unreliable journey times during the weekday peak by 2050 | Morning peak 34.8%, Evening peak 33.8% (2019)[80] |
| | Reduce the proportion of the Major Road Network experiencing excessively unreliable journey times during the weekend by 2050 | 83% (2019)[80] |

## Decarbonising surface transport

| Medium tern pan-northern target (2030) | Long term pan-northern target (2050) | Baseline (year) |
|---|---|---|
| 56% reduction, to 11 million tonnes by 2030 | Reduce total northern surface transport CO2 emissions to near zero by 2045 | 25 million tonnes (2018)[81] |
| Share of trips made by public transport increases to 10% by 2030 (Rail to 2%, Bus to 8%) | Share of trips made by public transport increases to 15% by 2050 (Rail to 3%, Bus to 12%) | Rail 1.5% , Bus and Coach 5.5%[82] |
| Share of trips made by active modes increases to 33% by 2030 | Share of trips made by active modes increases to 36% by 2050 | Active modes 29%[82] |
| Zero overall regional increase in private car vehicle mileage to 2030 | Zero overall regional increase in private car vehicle mileage on the North's road network to 2045 compared to 2018 | 78.2 billion (2018)[83] |
| Overall increase in rail freight mode share. | Double rail's share of freight carried to 17% by 2050, measured as tonne km | Freight 8.5%[84] |
| Uptake of public EV charging points at scale and pace across the North to support TfN's regional decarbonisation trajectory to 2045, increasing to at least 123,500 by 2030 | Uptake of public EV charging points at scale and pace across the North to support TfN's regional decarbonisation trajectory to 2045, increasing to at least 123,500 by 2030 | 6400 (2022)[76] |
| All new major transport infrastructure development to aid local nature recovery by achieving 10% biodiversity net gain, for projects gaining approval from 2025 (in line with the Environment Act 2021) | All new major transport infrastructure development to aid local nature recovery by achieving 10% biodiversity net gain, for projects gaining approval from 2025 (in line with the Environmental Act 2021 and biodiversity strategies from other transpot bodies) | |

## Enhancing social inclusion and health

| Medium tern pan-Northern target (2030) | Long term pan-Northern target (2050) | Baseline (year) |
|---|---|---|
| Public Performance Measure (PPM) of at least 91.2% for both Transpennine and Northern by 2028, returning to levels last seen prior to 2018 | | Transpennine 87.2%[85]<br>Northern 84.0%[85] |
| Reduce the number of people in the North living in areas with a 'high' risk of TRSE by 200,000 by 2030 | Reduce the number of people in the North living in areas with a 'high' risk of TRSE by 1,000,000 by 2050 | TRSE 3.31 million (2019)[86] |
| Reduce the number of people in the North living in areas with a 'highest' risk of TRSE by 74,000 by 2030 | Reduce the number of people in the North living in areas with a 'highest' risk of TRSE by 370,000 by 2050 | TRSE 0.81 million (2019)[86] |
| Local and national road investment continues to deliver road safety improvements, including through the Safer Roads Fund, and supported by targets such as National Highways target reduction of at least 50% by the end of 2025 against the 2005-09 average baseline. | Vision zero: reduce the number of people killed and seriously injured in traffic incidents to zero by 2050 | Vision zero: 6,429 (2018/19)[87] |
| Physical station improvements continue to be delivered as part of Network Rail's Access for All programme. By 2030, there is a plan in place to deliver the step change in physical station accessibility the North needs to meet 2050 targets. | All rail stations in the North to meet TfN's desired accessibility standards by 2050 | 54% (2021) |
| Reduction in AQMAs in the North through improved air pollution levels. | Eliminate the need for Air Quality Management Areas in the North announced due to NO2 or PM10 to zero by 2045 by bringing air quality within legal limits | AQMAs 132 (2022)[88] |
| Reduction in Nitrogen Dioxide exposure across the MRN network1 in the North. | Reduce to zero the proportion of the North's Major Road Network by length that exceed WHO Nitrogen Dioxide exposure limits by 2045. | 57% (2019)[89] |

## Interim milestones – opportunities for early progress

While this Plan aims to plan for the coming decades, requiring fundamental reform and investment which will take years to design, deliver and implement, it also recognises the significant changes we need to see in the coming years including:

- The opportunity to make significant progress on local transport networks, restoring services and rebuilding the confidence of the travelling public in buses and trains. This should include the development of active travel networks as part of transforming local transport networks. Through rail reform there is the opportunity to transform how services are run for the benefit of passengers

- Our decarbonisation strategy already recognises the need for urgent progress towards near zero, and there is significant progress that can be made in supporting fleet transition for passenger cars and Light Goods Vehicles (LGVs) and HGVs through providing adequate electric vehicle and hydrogen charging infrastructure.

- Rail reliability improvements, including TRU and Hope Valley, possible to make further progress on electrification for passengers and freight. During this period, further progress on HS2 and NPR will also be possible, and while full delivery is likely to take into the 2040s, initial upgrades could be delivered by the early 2030s. We can also expect places can start to benefit from the anticipation and certainty that NPR will be delivered – something that Birmingham is already benefitting from the anticipated arrival of HS2.

This is important as it further reinforces the case that if the North is to achieve an integrated transport system fit for the future, then we need investment not just for strategic pan-Northern schemes that derive benefits in the long term but also funding to support local connectivity which will help us deliver the outcomes this Plan seeks in the short – medium term. Actions have to be complementary and be planned in such a way that we have an integrated transport network.

## Our action plan

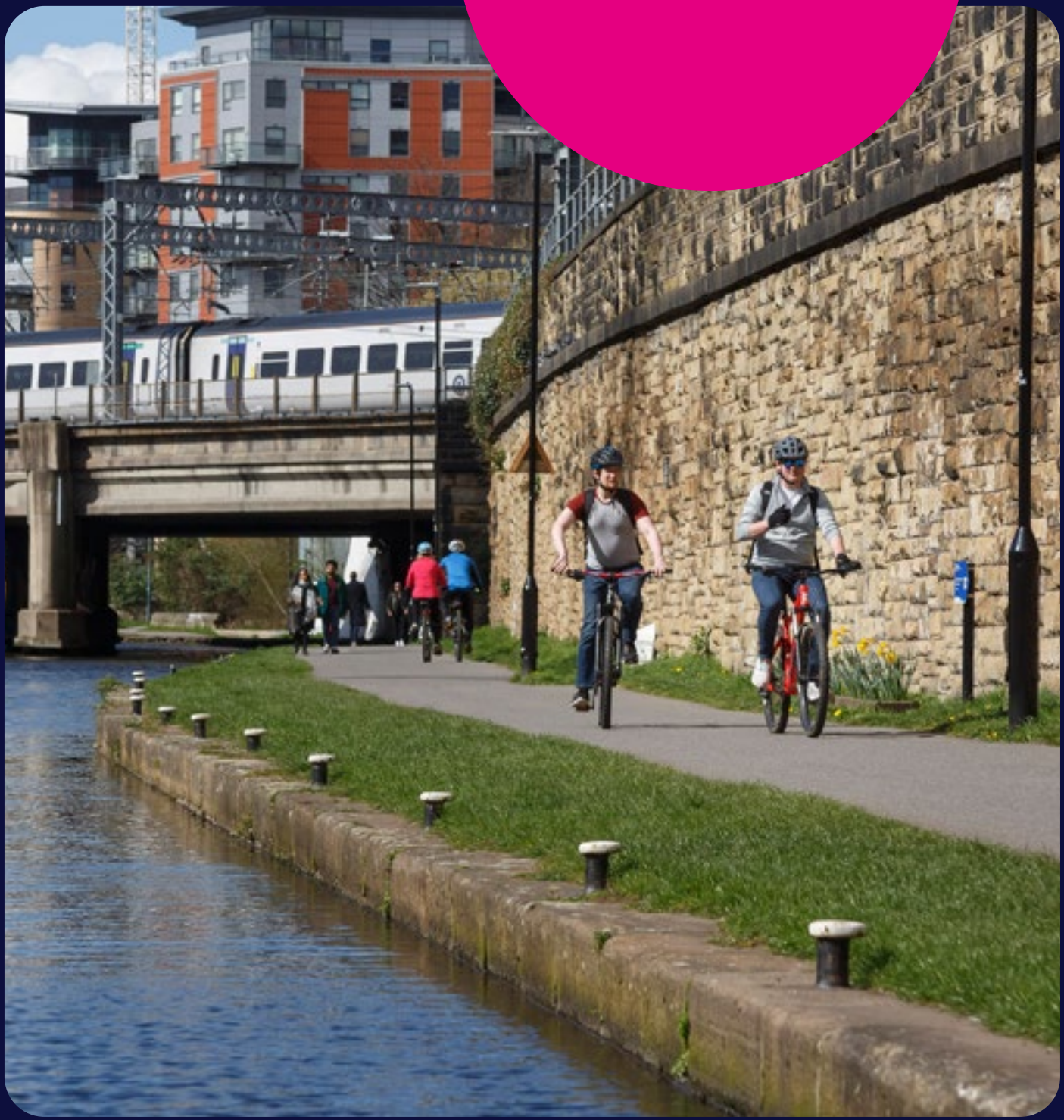
A realistic plan needs to recognise what is practical in the short term, while laying the foundations for future investment and reform of the system. We will therefore follow a three-stage approach in the coming years.

- Maximising the impact of committed investment in the North with a focus on capacity, resilience and reliability, and support the growth of travel markets crucial for economic, social and environmental transformation. At local level, we will be a positive catalyst for change, supporting authority partners with their ambitious plans for local transport networks and place making

- Communicating clear road and rail investment and policy priorities for the next two funding periods within the existing funding envelopes that can accelerate transformation in the 2020s

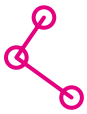
- Setting out and agreeing with Government the wider roadmap for securing the longer-term investment needed at pan-regional level, while putting forward positive proposals for reform of transport planning and funding in the North, including further devolution of decision making and accountability.

Consequently, there are some key actions for us to undertake to support the delivery of this Plan.



## Table 6.2: TfN Required Actions

| Policy Area | We will... |
|---|---|
| **Decarbonisation** | → Emphasise and embed the importance of maintenance and adaptations to climate change on existing networks as well as for new schemes.<br>→ Continue the 'whole network, whole system' approach as set out in the EVCI Framework to foster partnerships and solutions to ensure charging infrastructure is planned and delivered in an efficient and cohesive manner across transport, energy and spatial sectors. |
| **Transport Related Social Exclusion** | → Work with partners to ensure that investment in the major roads, rail and local public transport networks deliver reductions in transport-related social exclusion |
| **Rail** | → Work with Government and industry partners to secure full delivery of the preferred NPR and HS2 networks, and completion of the TRU, building on the committed investment in the Government's Integrated Rail Plan.<br>→ TfN will work with industry and DfT to secure a common set of service development proposals against which a pipeline of infrastructure investment can be more coherently developed to ensure an effective and joined-up approach across these schemes and programmes.<br>→ Actively work with partners to bring all stations in the North up to minimum suggested standards as quickly as possible and meeting desirable standards by 2050.<br>→ Use the Rail North Partnership to rebuild the confidence of rail passengers in the North's rail services, promote further strong growth in patronage and ensure the next generation of passenger service contracts can meet the needs of the North's communities and businesses. |
| **Roads** | → Work with National Highways to future proof and decarbonise the strategic and major road networks for new technologies (for example, EV, hydrogen and digital communications) and maximise opportunities for freight and improved infrastructure for public transport and active travel. |

| Policy Area | |
|---|---|
| **Freight and Logistics**  | → Utilise our Northern Freight Growth forecast to collaborate with delivery partners to ensure that our MRN, rail network, ports and airports provide the required capacity and capability to support existing and future freight demand, as set out in our Freight and Logistics Strategy. |
| **Connected Mobility**  | → Support partners in ticketing, digital and fares improvements by supporting analysis for reform fare structures, creation of government systems for multi-operator ticketing, integration of open data sources and defining new zonal fare structures.<br>→ Continue to work on a new 'Digital Mobility Hub' pilot with a clear focus on improving rural mobility, exploring the viability of demand responsive transport versus the viability of traditional bus services. |
| **Local Connectivity**  | → Utilise our extensive pan-northern evidence base to provide localised evidence to partners to support the planning and delivery of local transport plans that improve social outcomes, inclusion, equality and decarbonisation.<br>→ Proactively work with Active Travel England, DfT and local authority partners to secure investment to enhance the provision, accessibility and safety of active modes to deliver modal shift. |
| **Buses**  | → Support partners to improve bus journey times, frequency and reliability, by making use of any powers included in the Bus Services Act 2017 through the implementation of Bus Service Improvement Plans, using our analytical capabilities to deliver bespoke support to different typologies.<br>→ Explore opportunities to develop a targeted policy position that collates evidence on and considers what is required to encourage bus travel across the North. |
| **International Connectivity**  | → Proactively influence Government to encourage a greater use of the North's airport capacity, within a national aviation carbon budget approach consistent with CCC recommendations.<br>→ Continue to work with ports, through the Northern Ports Association to ensure that the benefits of Short Sea Shipping routes and the deep-water berthing opportunities continue to see growth and are continually acknowledged at both the regional and national levels. |

## Delivering our connectivity needs sustainably


In delivering transport interventions, we proactively encourage delivery authorities to avoid and mitigate any significant local environmental or social effects in line with the principles set out within the Government's planning guidance and ensuring consistency with the Green House Gas trajectory required to achieve net zero. The new strategic infrastructure investment required within the SDC also provides opportunities to enhance our wider environment, improving local air and water quality, reducing noise, enhancing those parts of our transport infrastructure that form part of our historic environment and responding to the requirement to achieve Biodiversity Net Gain.

Delivery agencies have already set targets for achieving Biodiversity Net Gain and effective implementation will promote sustainable infrastructure development. Our linear transport infrastructure, both existing and proposed can play a vital part in supporting and enhancing our partners' Local Nature Recovery Strategies and in complementing our decarbonisation ambitions through the development of nature-based solutions for climate change mitigation and increased infrastructure resilience, for example, through working with local stakeholders to support Nature North's 'Green Northern Connections' investable proposition[90].

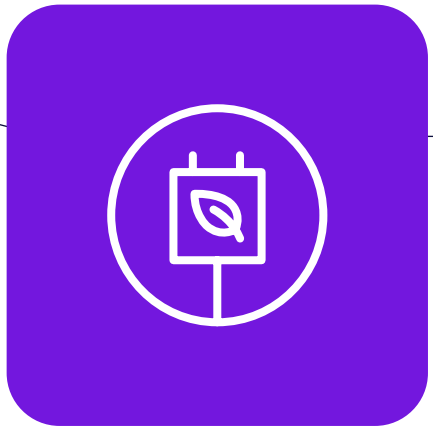
The amount of embodied carbon associated with the construction and maintenance of transport infrastructure needs to be an important consideration within scheme appraisal and developing techniques and materials to minimise it will need to be a key area of action for delivery authorities.

Our participation in a DecarboN8 study into embodied emissions associated with the multimodal corridors proposed within our SDCs[91], demonstrated the difficulty and resource intensiveness of calculating the likely embodied carbon footprint of major infrastructure developments at a conceptual level of design or when the scheduled design and construction of the infrastructure is many years or decades in the future. For this reason, we have yet to undertake a strategic embodied carbon footprint analysis of our SDCs, however, this remains an important component of our Decarbonisation Strategy and we will consider how this is most effectively considered as part of any future analysis of TfN's Investment Programme.

Delivery authorities have the core responsibility for working towards low and ultimately zero carbon scheme delivery. National Highways (NH) have adopted a 2040 net zero for maintenance and construction emissions target[92] and were accredited with Publicly Available Specification (PAS) 2080 'Carbon Management in Infrastructure' in December 2022. As part of these commitments, National Highways has published net zero road maps for materials (concrete, steel, and asphalt) and a 'Low Carbon Opportunities' register for low carbon material and delivery options, along with their applicability to the SRN and commercial viability. The register will be linked with National Highways' innovation projects and supplier carbon returns to form a best practice repository that suppliers can both input to and learn from.

While there will be a need for new infrastructure and new services, delivery authorities and service providers will also need to consider how to minimise the use of natural resources for construction and maintenance activities, achieving these policy priorities, where possible, through the re-use and upgrading of existing infrastructure and vehicles, alongside using recycled materials and reducing fuel usage.

We will work with delivery authorities, facilitating knowledge and best practice, and continue to raise embodied infrastructure carbon as a core issue with Government.



## Reform required to deliver a systems approach

Tackling the transport challenges in the North will also require considerable reform of the transport system, and while significant progress has been made by us, government and our partners since 2015, there is more to do. Recognising that transport alone will not achieve our collective vision, we need to work with a range of partners to find appropriate solutions and overcome barriers to delivery.

To meet Government policy priorities, transport investment, must therefore be grounded in delivery of strategic objectives and outcomes and not predicated on more easily monetised Benefit Cost Ratio (BCR) calculations based on a narrow 'predict and provide' model of how to adapt to traffic growth. To achieve this there is an urgent need for the simplification of funding streams, thereby removing cost and inertia from the delivery of investment, as well as greater flexibility in the application of the funding available, to ensure that it is targeted towards the delivery of outcomes. The evidence base assembled within this Plan demonstrates how investment in the North's infrastructure contributes to achieving agreed outcomes on reducing carbon emissions, improving health and achieving sustainable economic growth. This will require at a minimum alignment of decision making in transport investment with that in energy systems and digital connectivity.

Further, the emerging results from the modelling of economic scenarios to refresh the Northern Powerhouse Independent Economic Review (NPIER) indicate that to fully achieve the potential of the North investment in other areas of public sector policy (including education, health services and R&D) needs to be aligned with investment in infrastructure.

TfN's economic modelling of the NPIER shows that in the transformational growth scenario, the Government's investment would be recovered through additional tax revenues from higher growth in the North, and lower spending on health intervention and welfare funding by 2050. The scenarios also detail how private sector investment would be incentivised by a consistent long-term public-sector approach to policy and investment.

Fundamentally, to achieve the agreed strategic outcomes for the North there is a need for targeted investment in transport, as identified in this Plan, combined with complementary policy and investment focused on education, health and on supporting key sectors of the economy.

As set out in our Northern Transport Charter (NTC), it is clear there is consensus across the North of England about what is required to create a long-term funding settlement and pipeline for the North of England, based on three **fundamental building blocks:**

- The ability to put together long-term multimodal investment pipelines and integrate with mode specific delivery programmes
- Funding arrangements that can look across modes and take a programme approach with certainty about the longer term
- An investment and decision-making framework that works for the North.

The NTC identified the need for an appraisal system that works for the North. Investment in the North of England (and other regions) has been constrained by a government appraisal and decision-making process that fails to reflect the wider economic, social, and environmental objectives which we were established to deliver.

Since the NTC was published in 2020, Government has revised the Green Book to put strategic objectives at the heart of decision making and place greater weight on wider evidence within appraisal. While this represents a positive, significant shift in approach, we have yet to see the new Green Book translate into investment decision-making. A bespoke Northern approach is still required to ensure that the full environmental, economic, and social benefits of transport investment are reflected in decision making.

We have now built the Northern Appraisal Framework (NAF) envisaged in the Northern Transport Charter. Our unique tools and models fully represent the economic and environmental benefits from investing in the North's economy including mechanisms to better represent social and distributional impacts of transport investment. Critically the NAF provides us and government with the capability to undertake the weighted, multi criteria approach envisaged in the Northern Transport Charter, and to deploy the NAF systematically across the transport appraisal process, business case development, assurance frameworks and scheme prioritisation. This is fundamental to TfN's core focus of establishing a new and different approach to investment decision making and delivering better outcomes.

Change will take time to realise but is urgent – driven fundamentally by the legal obligation to decarbonise our transport network. A realistic plan needs to recognise what is practical in the short term (including the likely constraints on spending in the next Parliament), while laying the foundations for further investment and reform of the system. We will therefore follow a three-stage approach in the coming years.

- → Maximising the impact of committed investment in the North with a focus on capacity, resilience, and reliability and support the growth of travel markets crucial for economic, social and environmental transformation. At local level, we will be a positive catalyst for supporting local transport authorities in their ambitious plans for local transport networks and place making
- → Communicating clear road and rail investment and policy priorities for the next two funding periods within the existing funding envelopes that can accelerate transformation in the 2020s
- → Setting out and agreeing with Government the wider roadmap for securing the longer-term investment needed at pan-regional level, including the completion of the full NPR/HS2 rail network, and while putting forward positive proposals for reform of transport planning and funding in the North, including further devolution of decision making and accountability.

This activity will ensure we can accelerate and bring forward the critical investment and policy changes needed to deliver the intermediate targets and metrics in the vision and objectives section of the Plan. Through our short and medium-term activities to start investment flowing, we can then start to see the foundations of market growth and increased patronage and revenues, mode shift and decarbonisation consistent with the ultimate delivery of our 2050 outcomes.

To conclude, the evidence presented throughout this Plan makes it clear that reform of the system is required if we are to deliver an integrated transport system fit for the future.

To achieve this there is an urgent need for the simplification of funding for local and regional transport. If we are to deliver government's legal net zero commitments or to address the challenges of social exclusion within the North, we need to be able to bring policy makers across disciplines together to find innovative solutions, pooling expertise and funding streams to deliver meaningful change at scale and pace. The National Infrastructure Commission (NIC) have recommended the need for greater certainty of local government budgets including local transport bodies. A five year settlement for LTBs would remove cost and inertia from the delivery of investment, as well as greater flexibility in the application of the funding available, to ensure that it is targeted towards the delivery of outcomes.

TfN also recommends that a five-year indicative funding envelope for pan regional and nationally significant transport infrastructure should be established, within which statutory advice on infrastructure and service priorities is prepared. Regional funding envelopes should then be linked directly to the advice of the NIC in the National Infrastructure Commission. This Plan provides the basis for us to provide our advice to the Government on both the need for investment and the prioritisation of available funds.

An indicative five-year funding envelope, accompanied by longer term notional envelopes and built into existing regulatory and statutory processes, would bring significant opportunities to accelerate decision making, reduce uncertainty and avoid duplication of effort at national, regional and local level. This will:

- Enable TfN to make clear recommendations to Government about the long-term capital and revenue requirements of the North, all with a clearer line of sight back to the relevant government funding streams. This would complement wider approaches to local and third-party contributions to infrastructure funding, with TfN working with the private sector to maximise the leverage achievable through public sector investment

- Allow TfN to promote a programmatic whole network approach to considering options for future transport investment and to support wider long-term planning of energy, digital and housing needs

- From an industry perspective, increase certainty and confidence in a sustainable pipeline, reducing costs, attracting talent and skills and speeding up delivery

- Perhaps most importantly, it would enable our partners and wider authorities to plan and deliver effective place-based solutions, moving away from the expensive, multiple competitive bidding processes frequently identified as a barrier to change.

The North is not prefixed to the mechanism of what a regional five-year funding settlement would look like, rather we commit to continuing to work with Government and our local partners to make the case for devolved/combined funding points that break down the silos that act as a barrier to delivery of our outcomes. Recognising that to deliver different outcomes we need the mechanism, funding and powers to do things differently.

# Footnotes

[1] The Futures Toolkit, Government Office for Science, available here

[2] 2070 Commission 'Make No Little Plans', 2020, available here

[3] Baseline projections have been updated since the publication of TfN's Decarbonisation Strategy (2021) to reflect a greater level of understanding around aspects such as biofuel emission reduction efficiency and changes in the highway traffic model used in our modelling of carbon. These updates have only resulted in slight changes to the emissions profiles. Our future baseline projections will be further revisited ahead of our next planned Decarbonisation Strategy Update in 2025.

[4] Transport-related social exclusion in the North of England, TfN, available here

[5] Strategic Development Corridors, TfN, available here

[6] Estimates of the population for the UK, England and Wales, Scotland and Northern Ireland: Mid-2020: 2020 local authority boundaries. Office for National Statistics, available here.

[7] Blue Flag, Best Beaches, available here

[8] 'Urban population by city size indicator'available here.

[9] Regional gross value added (balanced) by industry: all ITL regions, ONS available here.

[10] Business Population Estimates 2021, October 2021, BEIS, available here

[11] Labour Force Survey, February 2023, ONS, available here.

[12] Research and Innovation in the North of England, Cambridge Econometrics (2020), available from the TfN website.

[13] The Power of 8: Knowledge, Innovation and Growth for the North, N8 2016

[14] Research and Innovation in the North of England, 2022, TfN

[15] Independent International Connectivity Commission Report, available here.

[16] Visit Britain, Inbound nation, region, county data.

[17] Atkins and The Leisure ConsuLTBncy (2021) Visitor Economy and Transport in the North of England, available here

[18] Office for National Statistics, Regional gross disposable household income statistics, available here

[19] The English Indices of Deprivation 2019, DHCLG, available here.

[20] The English Indices of Deprivation 2019, DHCLG, available here.

[21] Fair Society, Healthy Lives (The Marmot Review), Michael Marmot, et al., available here

[22] Getting better? Health and the Labour Market, the Institute for Public Policy Research, available here.

[23] TfN analysis of DfT Journey Time Statistics (2019), available here

[24] This refers to the average for England. NTS0703, DfT, available here

[25] To be confirmed

[26] TfN analysis of DfT National Travel Survey data, available here, (2018 and 2019 results combined)

[27] Transport for the North, 'Transport Decarbonisation Strategy' (2021), available here

[28] Based on TfN internal analysis in support of the published Transport Decarbonisation Strategy in December 2021, available here

[29] TfN Decarbonisation Strategy 2021

[30] Reported road causalities Great Britain: Road user risk, 2021 data, DfT, available here

[31] Are differences in travel time or distance to healthcare for adults in global north countries associated with an impact on health outcomes? A systematic review, Kelly et al, available here

[32] Evidence for environmental noise effects on health for the United Kingdom, Clark, C., Crumpler, C., and Notley, H., available here.

[33] Physical activity, World Health Organisation, available here

[34] Evidence from the Active Lives Survey indicates that the majority of adults in the North do not undertake more than one active travel trip per month. Incorporating physical activity into everyday life – particularly through walking, cycling, and wheeling for transport – is an effective and well-evidenced public health intervention.

[35] Climate Change 2021, The Physical Science Basis: Summary for Policymakers, Working Group contribution to the Sixth Assessment Report of the IPCC, available here

[36] The third UK Climate Change Risk Assessment Evidence Report 2022, available here

[37] Briefing Transport, CCRA3, available here.

[38] A plan for nature in the north of England: Natural Assets North final report | IPPR North, available here

[39] Natural England (2022a) Designated Sites View, available here

[40] Cole B, King S, Ogutu B, Palmer D, Smith G and Balzter H (2015) 'Corine Land Cover 2012 for the UK, Jersey and Guernsey', dataset, NERC Environmental Information Data Centre. available here

[41] See https://www.naturenorth.org.uk/, specifically the business case available here

[42] See https://thenorthernforest.org.uk/

[43] See https://greatnorthbog.org.uk

[44] See https://www.wildingleborough.com/

[45] DfT Regional passenger journeys (e.g., tables 1555, 1590, 1560) time period 1998/9 - 2018/19.

[46] Steer Davies Gleave (2018) User Insight into Pan-Northern Travel. https://transportforthenorth.com/wp-content/uploads/User-Insight-in-to-Pan-Northern-Travel-Report-min.pdf

[47] Steer Davies Gleave (2018) User Insight into Pan-Northern Travel. https://transportforthenorth.com/wp-content/uploads/User-Insight-in-to-Pan-Northern-Travel-Report-min.pdf

[48] TfN analysis of Network Rail passenger entries and exits data,

[49] Transport Focus, National Rail Passenger Survey: Technical Report, Spring 2020 (Wave 42), Version 8, July 2020, p. 73

[50] Great British Railways Transition Team, Periodic Rail Industry Market Report: Period 8 (16th October to 12th November 2022), 28th Nov. 2022, p. 17

[51] Network Rail Footfall Statistics

[52] In May 2022, only 26% of long-distance services achieved average timetabled journey speeds of at least 80mph and 22% of inter-urban service achieved and average of 60mph.

[53] TfN analysis of MOIRA timetable data (May 2022 timetable), excluding Knottingley to Goole, Settle-Carlisle and Bentham lines north of Long Preston, Middlesborough to Whitby and Grimsby – Barton-on-Humber.

[54] Northern 'Our step free access' map, 2017, available here.

[55] Access for All, Network rail, available here.

[56] TfN analysis using NoCarb mode,

[57] Major Roads Report, TfN, available here

[58] TfN Major Roads Report 2022.

[59] TfN analysis of mobile phone network data from the TfN Major Road Network (including the Strategic Road Network,) from BT / Atkins, using National Highways' threshold of 0.75 congestion efficiency compared to free flow. This means a journey that would take 30 minutes at free flow (the most reliable hour of the day for journey times) would take 40 minutes. This analysis uses an annual average for each direction on each highway segment.

[60] Confederation for Passenger Transport, 'The impact of congestion on bus passengers' Professor David Begg 2016, available here

[61] Department for Transport, Provisional road traffic estimates: Great Britain, April 2021 – March 2022.

[62] Transport for the North, 'Transport Decarbonisation Strategy' 2021, available here

[63] Ancias, Jones et al., 'The cost of the wider impacts of road traffic on local communities: 1.6% of Great Britain's GDP, Transportation Research Part A: Policy and Practice vol. 163 (2022).

[64] DfT Road Accidents and Safety Statistics (2021)

[65] Electric Vehicle Charging Device Statistics, available here

[66] Environment Agency, 'Estimating the economic costs of the 2015 to 2016 winter floods' (2018)

[67] National Highways, 'Preparing for climate change on the strategic road network - third adaptation report under the Climate Change Act' (2022)

[68] Freight and Logistics Strategy, TfN, available here

[69] Great Britain Freight Model, MDS Transmodal

[70] Great Britain Freight Model, cited in TfN Freight and Logistics Strategy

[71] TfN Freight and Logistics Strategy

[72] Freight and Logistics Strategy, TfN, available here

[73] 'Rail Freight: Delivering for Britain', Rail Delivery Group (2019)

[74] TfN's analysis of the National Travel Survey.

[75] Transport Decarbonisation Strategy, TfN, available here

[76] Electric Vehicle Charging Infrastructure Framework, TfN, available here

[77] GVA, Regional gross value added (balanced) per head and income components, ONS 2022 release

[78] TfN Analytical Framework NoRMS, 2022

[79] DfT Journey Time Statistics 2021/22

[80] BT & Atkins Mobile device data 2019; TfN TAME Congeston and Efficiency model

[81] TfN ANalytical Framework, NoCarb Model 2021

[82] National Travel Survey, 2022

[83] DfT Road Traffic Statistics, Motor vehicle traffic (vehicle miles) by road class and region and country in Great Britain, 2022

[84] Great Britain Freight Model, TfN future Travel Scenarios, 2022

[85] Passenger rail performance July to September 2022, Office of Rail and Road

[86] TfN TRSE tool, 2022, available here

[87] DfT Road Traffic Statistics 2022

[88] DEFRA UK Air information resource, accessed 2022

[89] ONS output area population estimates, 2020; DEFRA UK-AIR, km grid square modelled outputs, 2019

[90] Green Northern Connections, Nature North, available here

[91] Everything Counts, Decarbon8, available here

[92] Net Zero Highways, National Highways, available here

**Transport for the North**
2nd Floor
4 Piccadilly Place
Manchester
M1 3BN

0161 244 0888
info@transportforthenorth.com

TRANSPORT FOR THE NORTH

transportforthenorth.com