



North East Rail and Metro Strategy

Moving to a green, healthy, dynamic and thriving North East

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Foreword

The North East invented the railways and once produced the trains that were exported across the globe. Fast-forward to the modern day, our rail network still provides vital economic links to the rest of the country, but the infrastructure suffers from a chronic lack of long-term investment, and as a result, services often do not provide what we need either to connect communities or to offer a sustainable alternative to road transportation of people or goods.

The locally-owned Tyne and Wear Metro system however provides excellent connectivity for those who can access and use it in the urban area. Although the Metro itself is in need of a long-term funding commitment from the government to allow for future investment, it provides many valuable lessons about local decision-making and engagement, and about local delivery of rail improvement schemes, from which we can learn.

On behalf of the North East Joint Transport Committee, I am proud to present a new North East Rail and Metro Strategy. The strategy sets out how Rail and Metro can play a key role in achieving our region's shared transport vision and objectives.

The case for improvement and expansion of local rail and Metro is simple – the more people who travel, the greater the benefits to the region. For example, every journey made is worth £8.50 to our region through the wider benefits it delivers – we need more of this, it benefits us all.

Over the coming years we have a clear opportunity to transform rail connectivity to, from and within our region. We want to use this strategy to secure investment for new routes, new stations and continued renewal and modernisation of our railways.

The strategy went to public consultation in the spring and we are thankful to those who took the time to share their views with us on the proposals. The feedback was invaluable and will help us to deliver a rail and Metro network that is right for our people.



**Cllr Martin Gannon,
Chair of the North
East Joint Transport
Committee**

Executive summary

Executive summary

Building on the on North East Transport Plan published in 2021, this strategy outlines the future for rail and Metro in our region. Modal shift is woven throughout this document, as that is what our rail and Metro system must achieve, for both passenger and freight, if it is to contribute to the objectives of that Transport Plan.

Transformation of the network, and the benefits to our region which will flow cannot be achieved without increased levels of investment and new ways of working. This strategy must therefore be underpinned by:

- Investment in the East Coast Main Line (ECML) to support resilience and capacity in this crucial link between our region and other major UK economies;
- Availability of funding to our region to develop and deliver the schemes in this strategy, including system expansion, such as the Leamside Line; Security of future capital and revenue funding for our Metro system to maintain the successful contribution of this crucial asset to our region's economy;
- Structures which enable formalised collaboration and partnership with Great British Railways to bring service specification and decision making closer to our region.

The North East is in a unique position in that it runs its own local railway (the Tyne and Wear Metro) and seeks through this strategy and working with the Great British Railways transition team to better integrate the local rail services to operate as one network to better serve North East residents and businesses.

Using our Transport Plan objectives as a guide, this document outlines the specific passenger and freight rail improvements the region needs, as well as setting out how and when they need to be delivered.

We want to use this strategy to build business cases for investment for new routes, new stations and continued renewal and modernisation of our railways.

Central to this strategy is to seek further devolved powers to achieve long-term funding streams so we have the freedom and flexibility to plan ahead and deliver a more seamless, co-ordinated and integrated transport system across the North East.

For local rail, this means getting new regional powers to specify and manage services on a common footing and integrated with Metro. We believe this will enable us to improve services and grow their usage.

The overarching vision of the North East Transport Plan is: 'Moving to a green, healthy, dynamic and thriving North East'.

The five key objectives of the Transport Plan are:

- **Carbon-neutral transport.**
- **Overcome inequality and grow our economy.**
- **Healthier North East.**
- **Appealing, sustainable transport choices.**
- **Safe, secure network.**

In addition, we also focus on integration as a key objective to link public transport across Metro and rail and further linking these to bus through the interworking with the Bus Service Improvement Plan and Enhanced Partnership scheme.

Rail and Metro will need to play a leading role in enabling us to achieve these over the period to 2035.

Despite the impacts of the Covid-19 pandemic on the region and its rail and Metro network, our strategy makes the case that we need solutions to cope with and recover from the pandemic. We aim to restore faith in our rail and Metro networks, improving services further encourage new and returning passengers onto the network, and to expand its regional reach.

The starting point for our strategy is to introduce the rail and Metro networks in our region and beyond before undertaking a wider review of how people and goods travel within and beyond the North East. We consider pre covid trends and current Covid-19 recovery data. Rail and Metro journeys account for less than 5% of total transport journeys in the North East thus there is tremendous scope to encourage modal shift with all its benefits.

The strategy then highlights the important contribution the Tyne and Wear Metro plays in the local economic, environmental, and social well-being of the region. It follows that we make the case for continued long-term support and investment for its operation, maintenance, and future renewal.

Each of the subsequent chapters relate to the Transport Plan objectives and set out where we are, where we want to get to and how we propose to get there. In each of these chapters we also set out our key commitment statements.

Metro operations, maintenance and renewals

Tyne and Wear Metro is at the heart of the sustainable transport network for the region. Before the pandemic the network carried around 38m passengers per year and each journey contributes £8.50 to the local economy. Two major projects; the introduction of the new fleet and Metro Flow will improve the punctuality and reliability of the network and capability for increased frequencies.

However, in the short-term, the network needs revenue support to further enable our recovery from the pandemic. We also need long-term surety of capital funding to maintain and renew the aging infrastructure, including the replacement of the signalling system to allow the Metro network to support the delivery of the Transport Plan targets and objectives, and to allow continued operation of Metro.

Key Commitment Statements

- Enhance the Metro timetable made possible by the introduction of the new fleet and Metro Flow
- Deliver an asset renewal programme to maintain a high quality service in terms of passenger requirements
- Further deliver improved energy efficiency and encourage mode shift from cars to enable more people to travel sustainably

- Deliver a re-signalisation scheme to ensure continued safe operations of the Metro and enable future expansion plans
- Improve the customer experience through refurbished and enhanced stations, passenger information and integration with the wide public transport network
- Build on our work to enhance safety and security across the network, to reduce negative perceptions
- Put the Metro at the heart of our integrated transport system.

Overcome inequality and grow our economy

By providing greater access and connectivity to opportunities to jobs, training, education, health and tourism, rail and Metro can help people improve their lives.

To spread the benefits of accessibility and connectivity to more people we outline plans to increase the reach of local rail and Metro and increase the connectivity beyond our borders to regional and national social and economic hubs.

Key commitment statements

- Extending the reach of local rail and Metro, upgrading existing networks & services, adding new routes & stations.
- Increasing the capacity & resilience of the East Coast Main Line and Durham Coast Line, improving connectivity.

- Ensuring freight can travel sustainably by rail and delivering additional capacity where required.

Carbon neutral transport

Reducing the harmful effects of transport emissions is a key national and local priority. Making rail and Metro more appealing to use and attracting new passengers is essential to reduce the overall carbon impact of transport.

We also consider improvements the industry can make in terms of reducing the use of diesel trains and improving the efficiency of the existing non diesel fleet (e.g. Metro).

Key commitment statements

- Increasing the number of people travelling on rail and Metro in preference to the private car.
- Increasing the share of goods transported by rail.
- Introducing new trains, more efficient electric ones on the Metro and electric / battery/ hydrogen ones on local rail and modal shift from road to rail on freight (Government Net Zero Strategy).
- Improving stations and depots.

Healthier North East

Improving the health of the North East's residents is another key local and national priority. As a result of the pandemic more people have been cycling and walking as part of their daily routine. We want to further stimulate this increase in active travel through improved access to stations for all and where practicable on trains too in order to enable these good habits to continue. As people return to our towns, cities, and businesses we wish to make active travel part of people's integrated journey.

Key commitment statements

- Improving walking and cycling links to existing and new stations.
- Increasing the number of people travelling on rail and Metro in preference to the private car.

Safety and security

An area that is regularly raised as a barrier to using rail and Metro is safety and security. This is closely linked to the customer experience and considers not only passengers' perceptions of how safe and secure the network is but also cleanliness.

Key commitment statements

- Maintaining and updating Metro assets, including resigalling.

- Maintaining enhanced presence on trains and at stations.
- Providing safer routes to stations.
- Raising the security standards at stations and on trains.
- Undertaking targeted initiatives and campaigns to improve passenger safety.

Appealing and sustainable travel

To maximise the economic, environmental and social benefits of public transport use we need to ensure both rail and Metro provides the service people and businesses need leading to increased patronage.

Improving the customer experience is the key thread that underpins this chapter. Research has shown that failing to meet customer expectations has twice the negative impact as delighting customers has a positive impact.

Thus, this chapter explores the varied elements of a journey that combine to make a positive experience. This includes planning the journey (including product choice), access to stations, the station itself, onboard experience and better communication if things go wrong. Initiatives and interventions are proposed to make the existing experience more appealing to new and existing passengers. To keep the customer experiences high, we must also invest in the infrastructure to ensure trains and Metro cars can run reliably and minimise service failures.

Key commitment statements

- Improve the customer experience through refurbished and enhanced stations, passenger information and integration with the wide public transport network.
- Integrating fares and ticketing across rail, Metro and bus.
- Improving reliability and punctuality of services.

Extending the reach of local rail and Metro to serve more communities.

Integration

Integrating the full journey across all public transport modes be that bus, Metro or rail is considered a key outcome this strategy will help to achieve. Integration cuts across all the Transport Plan objectives and is the glue that can bind the various pieces of the jigsaw together.

We consider the opportunities that might arise from the reshaping of the rail industry and how local rail can become more aligned with North East priorities and work in tandem with Metro and local bus services. The strategy aligns with the region's emerging Enhanced Bus Partnership.

Key commitment statements

- Working with Great British Rail (GBR) to seek greater influence over local rail to match the flexibility and accountability of Metro.
- Coordinating services and improving interchange between all modes of transport.
- Integrating fares and ticketing across rail, Metro and bus.

We want to use this strategy to build business cases for investment for new routes, new stations and continued renewal and modernisation of our railways.

Central to this strategy is to seek further devolved powers to achieve long-term funding streams so we have the freedom and flexibility to plan ahead and deliver a more seamless, co-ordinated and integrated transport system across the North East. For Metro and local rail, this means getting new regional powers to specify and manage services on a common footing and integrated with Metro. We believe this will enable us to improve services and grow their usage.

Measures of success (KPI)

We have developed a set of Key Performance Indicators (KPIs) that are designed to monitor the overall progress of our Strategy with respect to our key objectives.

We will measure the following:

- Annual passenger flows;
- Access to employment sites by rail and Metro within 30 minutes and 60 minutes of a station;
- The economic contribution of Metro and local rail to the North East;
- The number of households within 1200m of a Metro or local rail stations;
- Passenger satisfaction;
- The greening of the region's train fleet;
- Rail freight modal share against lorry use;
- Numbers of people cycling to stations;
- The number of stations that meet 'Healthy Streets' accessibility standards.

How we will deliver this strategy

Central to this strategy is a clear live programme of investment. All the proposals in the strategy are consistent with the North East Transport Plan objectives.

They are presented as schemes to be delivered in specific time horizons:

- 2022 – 2028
- 2029 – 2035.

Maps at the end of this document clearly set out exactly what, where and when the investments need to happen.

Our investments proposed are:

- A mix of customer experience enhancements.
- New local infrastructure (to extend the reach of local rail and Metro).
- Enhanced East Coast Main Line to improve regional and national connectivity).
- Asset maintenance and upgrades (to future proof the network e.g. re-signalisation of the Metro).
- Cleaner and greener trains and Metros.
- More accessible and welcoming stations.
- Greater integration of public transport through a unified local operating structure.

Transport North East and Nexus will work in collaboration with central government, Network Rail (and in time Great British Railways), Transport for the North, transport operators, our constituent local authorities, the North East Local Enterprise Partnership (LEP), businesses, the third sector (particularly the Community Rail Partnerships), and crucially local people to deliver the aims set out in this strategy.

2022 network and 2035 network.

As part of our route map for delivery we have included diagrams our rail and Metro network as it exists now and what we want it to look like by 2035.

1. Introduction

The North East is in a unique position in that it runs its own local railway (the Tyne and Wear Metro) and seeks through this strategy and working with the Great British Railways (GBR) transition team to better integrate the local rail services to operate as one network to better serve North East residents and businesses.

Central to this strategy is to seek further devolved powers to achieve long-term funding streams so we have the freedom and flexibility to plan ahead and deliver a more seamless, co-ordinated and integrated transport system across the North East.

For local rail, this means getting new regional powers to specify and manage services on a common footing and integrated with Metro. We believe this will enable us to improve services and grow their usage.

We want to use this strategy to build business cases for investment for new routes, new stations and continued renewal and modernisation of our railways.

North East Transport Plan

The North East Transport Plan published in 2021 provided our region with the strategic framework to enable us to deliver an improved, more seamless, co-ordinated and integrated transport system across the region.

This North East Rail and Metro Strategy sets out how rail and Metro can play a significant part towards achieving the region's transport vision and objectives.

Using our Transport Plan objectives as a guide, this document outlines the specific passenger and freight rail improvements the region needs, as well as setting out how and when they need to be delivered.

The overarching vision of the Transport Plan is: **'Moving to a green, healthy, dynamic and thriving North East'**.

The five key objectives of the Transport Plan are:

- Carbon-neutral transport.
- Overcome inequality and grow our economy.
- Healthier North East.
- Appealing, sustainable transport choices.
- Safe, secure network.

Rail and Metro will need to play a leading role in enabling us to achieve these over the period to 2035.

To realise our joint ambitions and deliver this strategy, Transport North East and Nexus will work in collaboration with Central Government, Network Rail (and in time Great British Railways), Transport for the North, transport operators, our constituent local authorities, the North East LEP, Newcastle International Airport, businesses, the third sector (particularly the Community Rail Partnerships), and crucially local people. Chapter 13 sets out delivery in more detail.

To keep track of our progress as we work to make the network bigger and better, more accessible, and useable for all, this strategy contains a list of key indicators which people, businesses and other stakeholders across the region can monitor.

Our view is that we can make much more of our region's railways to tackle the environmental, economic, health and social challenges we face.

Over the coming years we want to expand the reach of local rail and Metro into more communities, benefiting more people's lives and unlocking access to opportunities such as education, employment, training, leisure and tourism. This will also facilitate opportunities for modal shift from single car occupancy journeys and moving more goods from road to rail as key drivers for change.

To do this, we need to improve the passenger experience on existing services, restore passenger services on disused lines and expand the network, upgrade existing stations and open new ones. This will enable the North East to gain from the economic and social benefits of rail and Metro and address our regional challenges around exclusion.

Every journey on our Metro and Local rail network brings an £8.50 direct benefit to our economy.

The region has a recent and strong reputation for successfully delivering major rail investment programmes on-time and on-budget. For example, in 2020, we worked with partners to open a new local rail station in Horden, County Durham on the Durham Coast Line. Nexus has overseen a £350m Metro Asset Renewal Plan programme between 2010-2021. Nexus also owns and manages the Tyne and Wear Metro, and is managing a £300m contract for Stadler to build 46 new trains, confirming the region's strong track record of running railways and managing major projects successfully.

A key outcome from this strategy is to help people to make the right travel choice and encourage more people to use rail and Metro rather than other modes of transport such as the private car, by making rail and Metro more attractive and affordable for both current and non-users. Transitioning the number of journeys people make onto more sustainable and public transport

modes such as rail and Metro will drive our economy and improve our environment, helping to achieve the region's agreed transport objectives. Strong rail links at regional and national level are also crucial to delivering our ambitions for growth and addressing our challenges around connectivity and exclusion.

With the publication of the Integrated Rail Plan (IRP) in November 2021, the government's view of the long-term future planning of the East Coast Main Line has been set. Although this is a major setback to our long-term high speed connectivity needs, we will continue to work to secure maximum benefit for the region in the short-term whilst continuing to set out our case for increased connectivity to reduce economic disparity in the longer-term.

It is our view that North East rail infrastructure does not have enough capacity for today's growth in traffic, let alone for the future. For example, the East Coast Main Line in our region currently combines long distance, regional, local and freight traffic on the same two tracks. It also needs to be made faster and more resilient, having last seen major investment three decades ago.

Improved national rail links enable the North East to welcome new businesses and organisations to be based here. That is why this strategy also sets out our passenger and rail freight priorities for improvements, which the region needs such as urgent infrastructure investment on the East Coast Main Line and Durham Coast line.

Area covered

This strategy has been developed by Transport North East and Nexus (the Tyne and Wear Passenger Transport Executive). It therefore covers the seven local authority areas in the North East, comprising of two Combined Authorities, brought together by the North East Joint Transport Committee:

The North East Combined Authority
(Durham, Gateshead, South Tyneside and Sunderland)

The North of Tyne Combined Authority
(comprising Newcastle upon Tyne, North Tyneside and Northumberland)

However, as rail lines and services aren't constrained by administrative boundaries this strategy also sets out how we will work with partners and neighbouring areas to achieve our joint aspirations. Through the **North East Rail Management Unit (NERMU)** a collaborative grouping we work closely with the Tees Valley Combined Authority, North Yorkshire County Council and Cumbria County Council. NERMU enables a united approach on common areas of economic and social priorities to influence decision making for local rail services through Department for Transport (DfT) and Transport for the North (TfN).

The North East is in a unique position, the area benefits from a high frequency Metro service (running on mostly its own infrastructure) covering the Tyne and Wear urban core, coupled with a self-contained local rail service covering the wider North East (including Tees Valley).

Significantly, this strategy sets out our aspirations to reform the railway and create a fully integrated public transport network within the North East, by crucially integrating local rail services with the Metro. This is an unprecedented time of change for the rail industry with the UK starting to recover from

the worst effects of the Covid-19 Pandemic and the reformation of the railways through the creation of Great British Railways (GBR). The North East wishes to play its full part in maximising the benefits for local communities and businesses from these significant changes that are happening over the next few years.

Closer integration has proven successful on other networks such as London Overground where the establishment of a prominent, unified network has increased awareness of travel opportunities and helped to increase passenger numbers.

Definitions

Metro

The Tyne and Wear Metro is a high frequency light rail network which provides rapid links between town and city centres across the urban core of the region. Opened in 1980, it has been part of everyday life in our region ever since. Metro serves 60 stations along 77.5km of track. The 89 Metrocars in the current fleet allows Metro to run a 12-minute network wide frequency. The ‘green’ and ‘yellow’ routes overlap between South Gosforth and Pelaw stations to provide a train every 6 minutes and additional peak services increase the frequency to a train every 3 minutes through this ‘central area’.

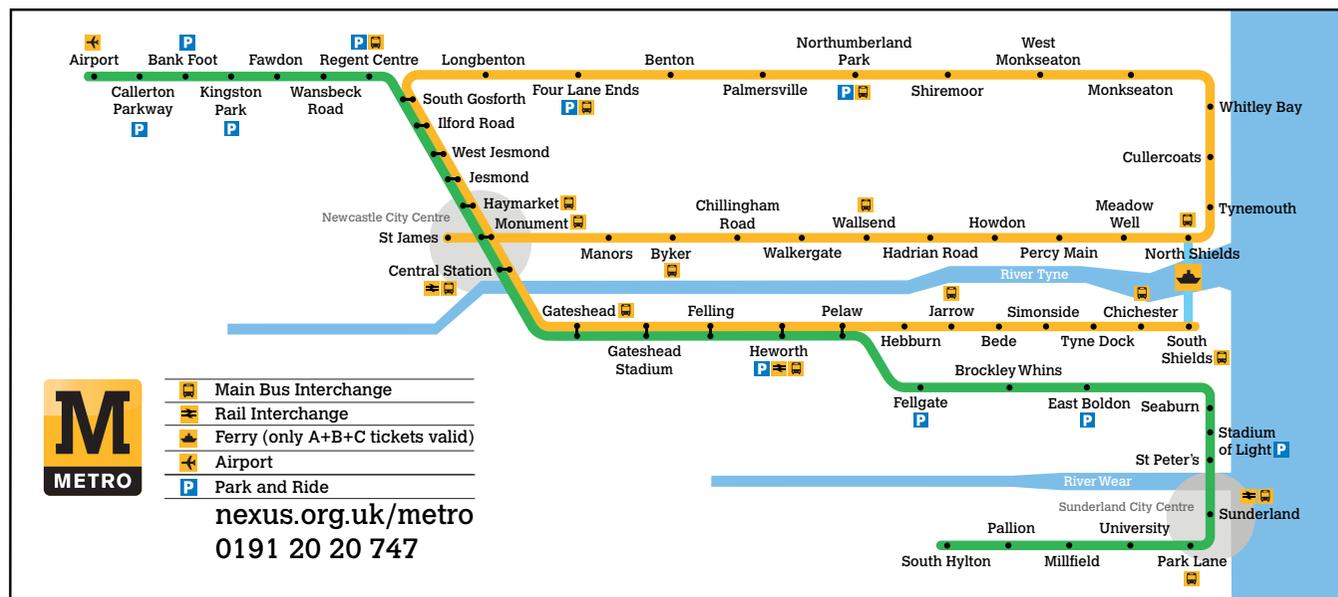
From 2023/24, 46 new Metro trains will begin entering passenger service, delivering a step-change in quality, reliability and environmental performance. As well as this, from late 2022, the £100m ‘Metro Flow’ track dualling scheme will have the capability to increase the network wide service frequency to 10 minutes, as well as reducing journey times, improve reliability, and unlock the door to expansion of the network.

The Metro system (both track and train) is managed and operated by Nexus (the Tyne and Wear Passenger Transport Executive) an executive body of the North East Joint

Transport Committee. The operation and maintenance of the trains are managed through Stadler Rail.

The track and control systems are maintained and enhanced through the Metro Infrastructure Rail division of Nexus. This enables close coordination across the business for the benefit of the local passengers.

As of November 2021, passenger journeys have recovered to just over 90% of normal (pre-Covid) mobility (w/c 15th November 2021).



Local Rail

The North East's Local rail services are operated by Northern Trains Limited and managed through the Rail North partnership (joint DfT/TfN). Some functions are devolved further to the North East Rail Management Unit (NERMU) but these are very limited. The region has a relatively self-contained local rail network covering the wider North East (including Tees Valley). There are no through 'local' services to other regions covered by Northern eg York, Leeds or Manchester and the North East is served by its own depot, meaning that the North East local rail services effectively work independently of the rest of the Northern services.

There are 533 route km of rail lines in the North East, however, none of our local lines are currently electrified, meaning that local trains operating across the region are diesel-powered. Investment in services and trains has lagged behind the rest of the North. Although the troublesome 'pacer' trains have gone, they have been replaced with similar-aged trains that are only somewhat more reliable. In 2019, they were refurbished with improved seating, at-seat power, fully accessible toilets, free wi-fi, digital customer information screens, sustainable lighting and improved CCTV.

Despite this, the trains are showing their age and lag behind modern passenger needs and expectations. There are 31 rail stations in the region ranging from remote rural stations to major intercity stations. The level of passenger facilities varies considerably. The local stations carry five million passengers per annum around the North East each year pre-Covid.

Local rail services presently comprise:

- Durham Coast Line - linking Newcastle, Sunderland, Hartlepool and Middlesbrough.
- Tyne Valley Line – linking Newcastle, Gateshead Metro Centre, west Northumberland and Carlisle.
- Tees Valley and Bishop lines – linking South Durham with Darlington and the Tees Valley.
- A local service utilising the East Coast Main Line north of Newcastle – linking Northumberland towns and villages to Newcastle, the main station being at Morpeth.
- On the East Coast Main Line south of Newcastle three northbound-only morning services are operated by Northern – including calls at Chester-le-Street.

National Rail

We are served by the East Coast Main Line (ECML) which connects us to London and Edinburgh, as well as the other main cities in the North and Midlands.

The ECML is a vital artery for our region carrying commuters, tourists, business travellers and freight to, from and through the North East, but is in urgent need of investment.

Between Northallerton, Newcastle and Berwick there is only one track running north and one running south. The line currently combines long-distance, regional, local and freight rail traffic on the same two tracks. The potential for new and existing freight paths on the ECML is increasingly constrained without extra capacity and investment.

As well as the ECML, Sunderland has national rail connections to London, with journeys taking 3 hours 45 minutes. However, better pan-northern and national connectivity is sought. The station, which is located underground in the city centre, is in urgent need of redevelopment and is a capacity constraint for future growth.

As of January 2022, the current ECML train operators serving the region are:

- London North Eastern Railway (LNER)
- Cross Country
- Trans Pennine Express
- Grand Central – Open access services between London and Bradford, Teesside and Sunderland.
- Lumo – Open access services between London, the North East and Edinburgh.

Rail freight

Freight operators run a wide a variety of services in the region including container trains, aggregates and energy flows. The number of services operating can fluctuate at short notice subject to the demands of customers. Freight services are less regular and visible than passenger services but are equally important in contributing towards our objectives. The major operators are:

- DB Cargo – general freight operators
- Freightliner – bulk flows such as wood pulp, coal, cement
- Direct Rail Services (DRS) – nuclear flask trains operating between Teesside and Sellafield.

Other freight operating companies may also operate in the North East at short notice.

The importance and benefits of local rail Devolution

Lack of service integration between our Metro and local rail networks - which continue to operate separately - must be addressed in order to give the North East a single railway identity. Achieving full devolution of local rail services is central to the North East being able to integrate and expand the reach of Metro and local rail into more communities.

We believe it is essential to move the local rail network further along the devolution path so that, along with Metro and local bus services, it meets the needs of local people and economies. We want to provide a single coordinated public transport service that can maximise connectivity and mobility for business, training, education and tourism, thus boosting the local economy.

Metro is specified, managed and operated locally and is thus hard wired to local accountability. The potential for further devolution from government to the North East to specify and manage the operations of our current local rail network, in line with Nexus' responsibility and ownership of the Metro,

will enable our region to deliver a responsive, integrated and accountable system with improved services and reach.

Great British Railways and the route to local rail devolution

The Williams-Shapps Rail Plan has set in progress a reorganisation of the rail industry, with the setting up of Great British Railways (GBR).

Change is desperately needed on the railways and so the North East welcomes these proposals and will align this strategy, and future iterations, to them. As a region we have a bold vision for integrated transport as originally outlined in the North East Transport Plan and expanded upon in this strategy.

We welcome the commitments to giving local leaders greater control over local ticketing, timetables and stations.

Railways connect our communities to jobs and education, link us to the rest of the UK, and provide sustainable arteries for freight. Secondary routes that are hugely important to our towns and cities such as the Durham Coast Line have deteriorated while pre-pandemic companies competed ferociously for profitable passengers on the ECML trunk routes.

Devolved railways will be strengthened, with closer collaboration with GBR. Improving services, consistency and co-ordination with the rest of the railway is a key objective of our region.

Much of the current passenger rail network is run under contract to or in partnership with city-region and sub-national transport authorities, and they and their constituent authorities have also invested in rail assets, especially stations. It is important that the reorganisation and the legislation underpinning the reformation of the railways recognises this and also safeguards the reformation of the railways contracts and investments.

The region already benefits from partial devolution through Transport for the North (TfN) and the North East Rail Management Unit (NERMU), which offers us informal oversight of our rail geography, but we believe this needs to go further to realise the full benefits of a truly integrated North East public transport system.

We believe that both geographically and structurally, we are already well positioned and willing to expand the role of NERMU. We want to integrate and expand the coverage of the - already devolved – Metro system, working alongside the local rail network, to bring benefits to more communities in the North East.

The North East rail network (with the exception of the East Coast Main Line) is very self-contained. This provides a significant opportunity to better-reflect the local needs of the area and be less impacted by rail operations elsewhere in the wider ‘whole North’ railway geography

There are various potential options as to how rail devolution could be extended in the North East region and these will be investigated and assessed in terms of their costs and benefits and how they work under the wider GBR rail model.

Devolution will increase local accountability for local rail services and better integrates those services with Metro and local buses to provide a single, coordinated public transport resource.

Greater partnership working with GBR/TfN will also help to ensure that local needs are met to provide specific integration accountabilities.

Structure

We have tried to ensure that this document is easy to follow. It is divided into thematic chapters which set out in detail how rail and Metro can help achieve each of our region’s transport objectives.

Each chapter sets out:

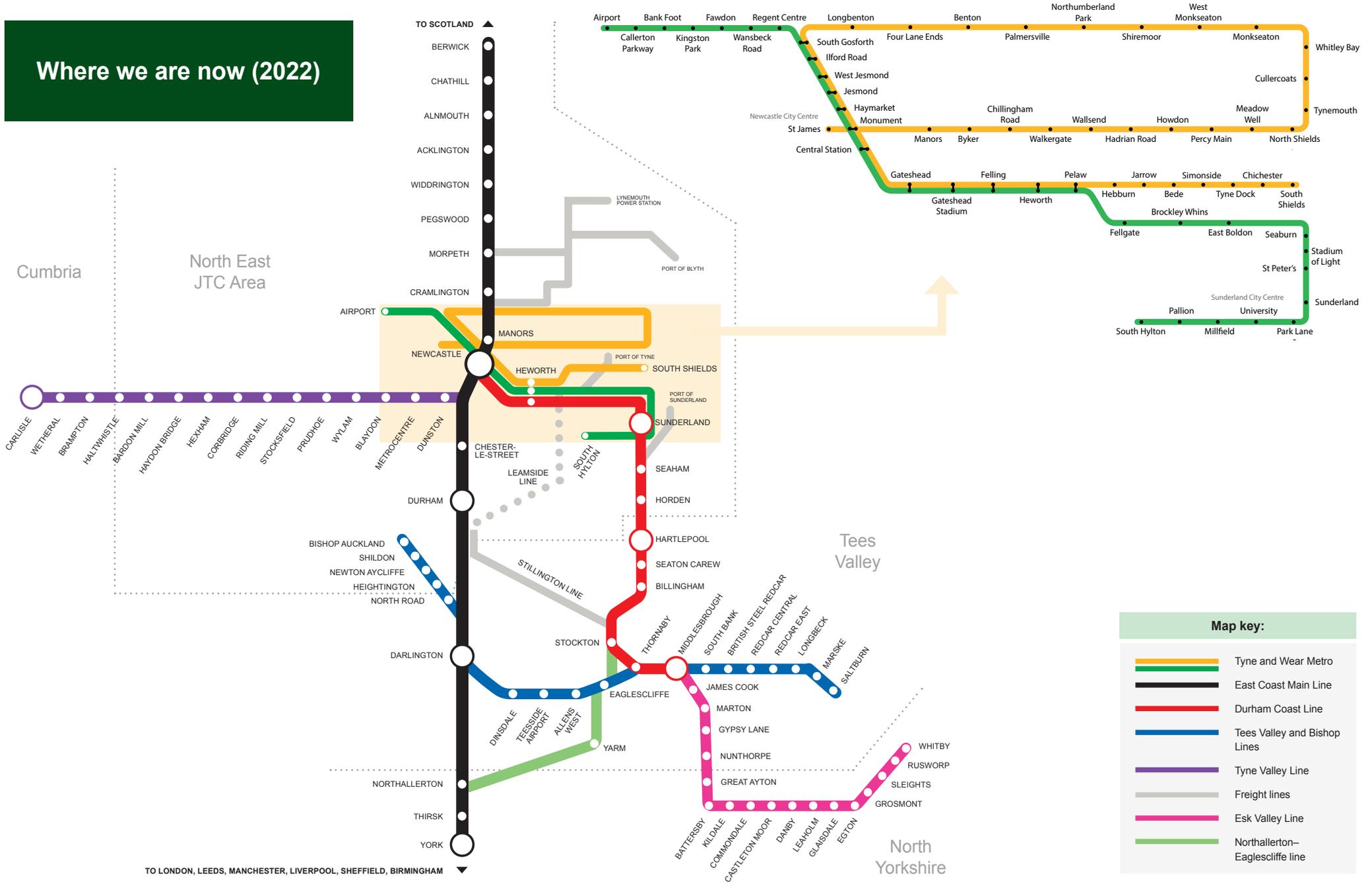
- Where we are now (2022)
- Where we want to be (2035); and
- How we will get there

For Metro, Local rail, National rail, and rail freight in each section.

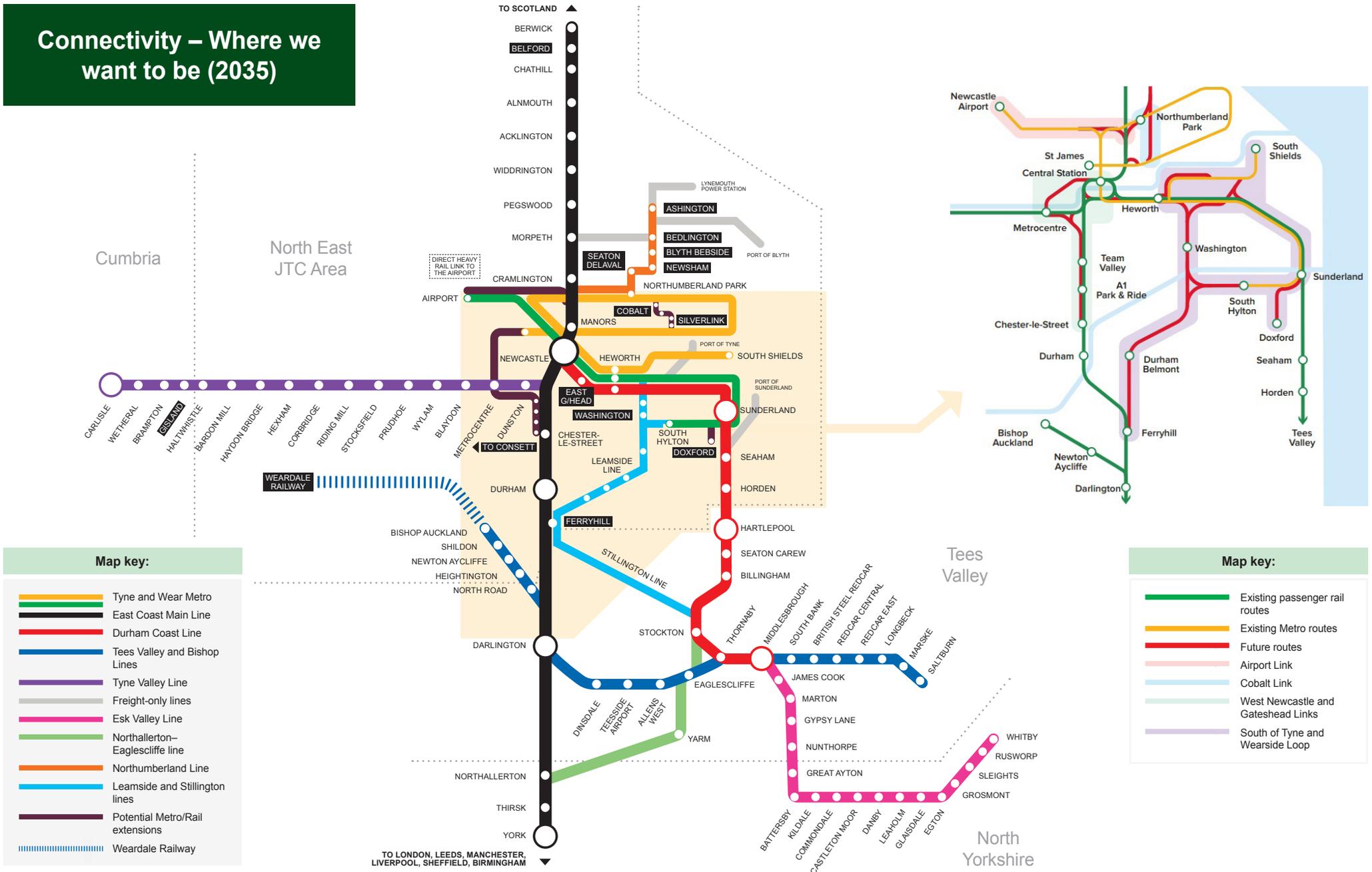
We have also included maps of where we are now and where we want our rail and Metro network to be in the years ahead.

At the end of the strategy, we also have included illustrative maps with specific rail and Metro schemes and interventions which we want to see delivered, subject to business case development, approvals and funding.

Where we are now (2022)



Connectivity – Where we want to be (2035)



2. North East Transport Plan – our guiding objectives

In March 2021, the North East Transport Plan was formally adopted by the leaders of our 7 local authorities. The Plan provides the strategic framework to enable us to deliver an improved, more seamless, coordinated and integrated transport system across the region.

The overarching vision of the Transport Plan is:

‘Moving to a green, healthy, dynamic and thriving North East’.

The five key objectives of the Transport Plan are:



Carbon-neutral North East



Overcome inequality and grow our economy



Healthier North East



Appealing, sustainable transport choices



Safe, secure network

The objectives for the Transport Plan set the standard of what we want to achieve and where we want our region to be by 2035. Rail and Metro have a central role to play in helping to achieve these objectives. The Plan recognises the tasks aimed at recovery and reducing the reliance on financial support from government and local authorities as the UK emerges from the COVID-19 pandemic.

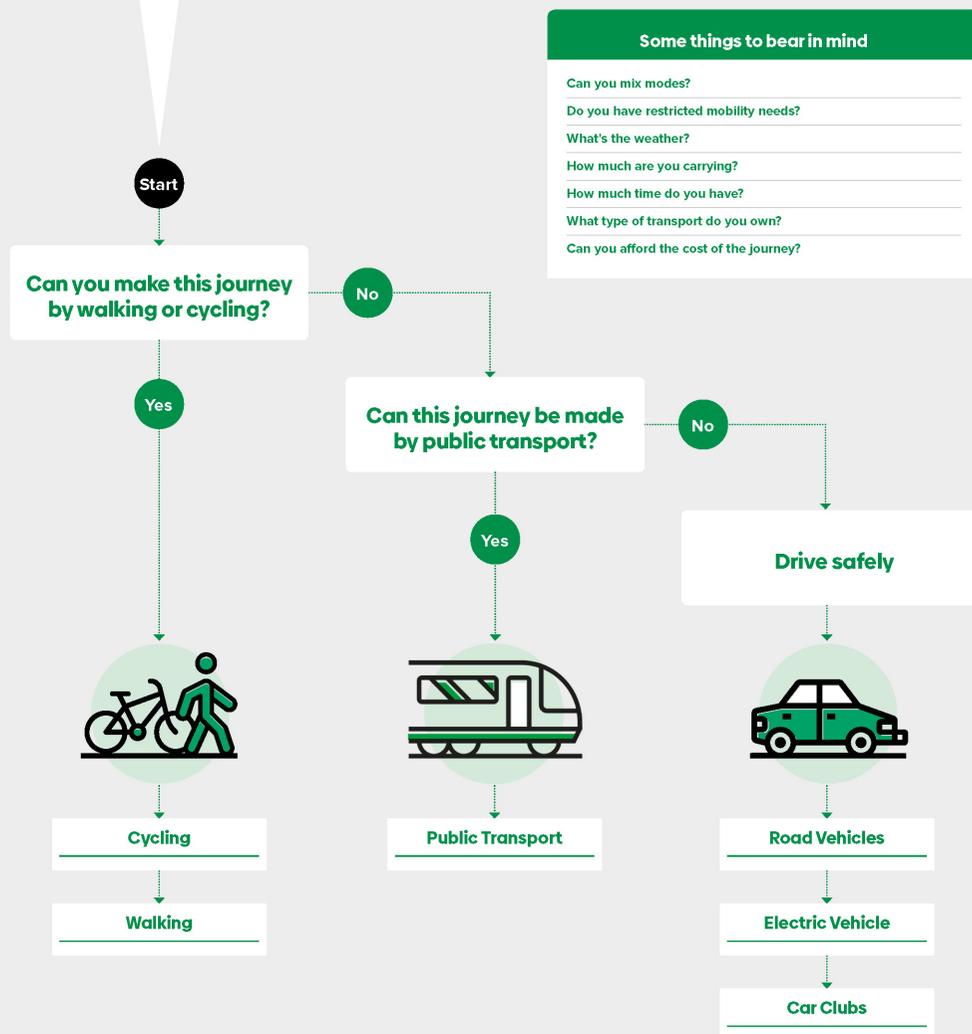
Beyond this, it sets out the need to make rail and Metro more attractive and more efficient by improving reliability, availability and affordability by reconnecting communities and socio-economic hubs.

A Transport Plan for our regions’ diverse geography.

Our Transport Plan includes initiatives to support all of our region’s communities including those in rural settings. Responses to the consultation told us better connectivity is needed, particularly in rural areas. There was also a feeling new developments and neighbourhoods could be designed so they are less car-reliant from the outset.

Our Metro and local rail networks can provide the ‘backbone’ of transport connectivity across our region, linking with other sustainable transport opportunities wherever possible to extend the reach.

How to make the right travel choice



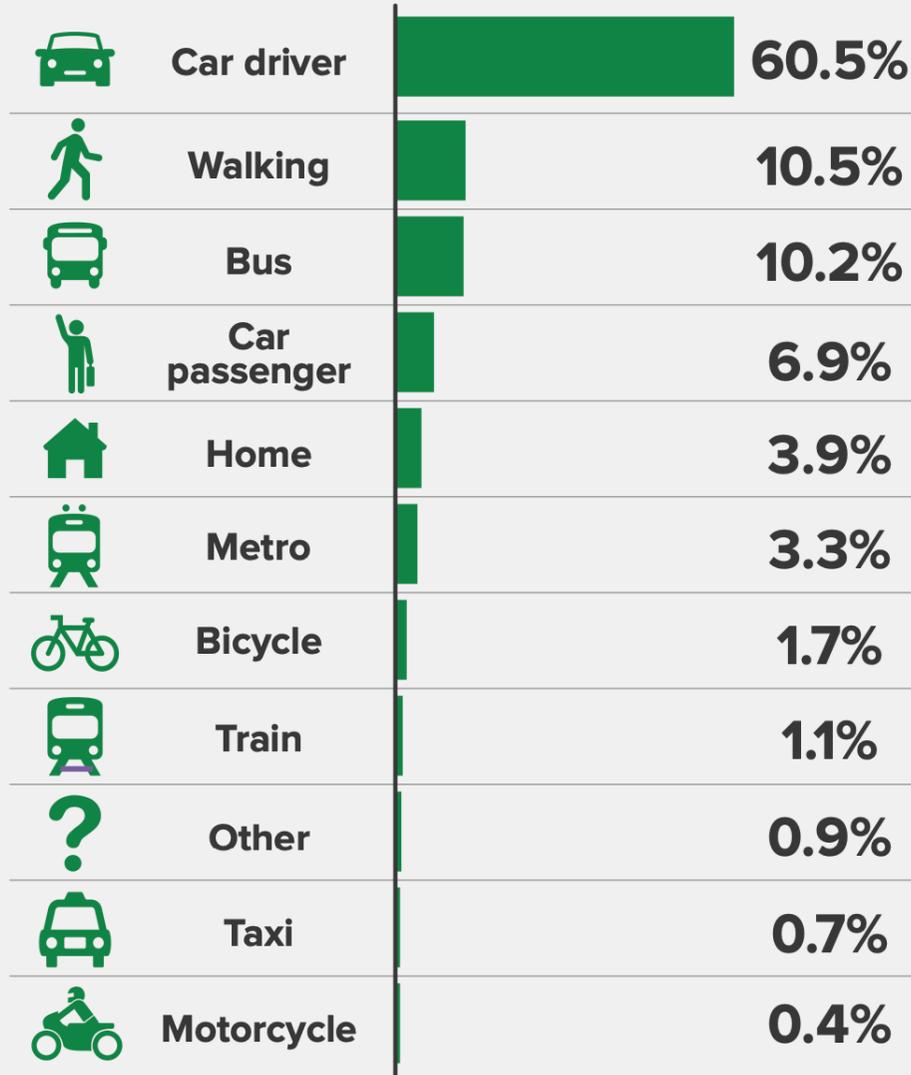
Encouraging modal shift towards our Metro and local rail services will support all our objectives in the Transport Plan, delivering passenger and freight rail improvements the region needs for further economic growth.

We aim to make the network bigger and better, more accessible and useable for all.

Our Transport Plans' overarching policy is about "Making the right travel choice".

We will enable people to make greener and healthier travel choices whenever they can and ensure our sustainable network takes everyone where they need to go at a price they can afford. We must ensure all our actions improve transport across the region and deliver to the objectives of this plan, so we are greener, more inclusive, healthier, safer and our economy thrives.

3. How do people and goods travel



Introduction

Travel has been significantly impacted by the Covid-19 restrictions introduced at various points during 2020 and 2021, and there may be long-term implications of the behavioural and structural changes resulting from the pandemic.

Metro travel was significantly impacted by the Covid-19 lockdown; April 2020 saw passenger levels fall by 95.5% in comparison with the same month in 2019. In mid-2020, the system was operating at a loss of approximately £0.9m per week, excluding costs associated with making the system Covid secure.

Local and regional train operators quickly moved to introduce emergency 'key worker timetables' in late March and early April 2020. Passenger numbers were considerably down according to onboard train staff's ad hoc train counts from late March 2020. There were very low numbers travelling onboard local rail services in the North East (with between 0 and 9 passengers onboard the trains at the height of the lockdown).

As with Metro, numbers have started to return but at a slower rate. The uncertainty of the shape of the UK recovery from the Covid-19 pandemic, together with government messaging about only using public transport where essential, makes passenger projections and forecasts uncertain.

Getting passengers back on the network safely is our first priority. The pandemic has had major consequences for patronage on public transport across the country; rail (light and heavy) services were the most affected mode with passenger levels falling to as low as 4% of pre-lockdown levels in April-May 2020.

Pre-pandemic transport use

Although transport use has decreased during the pandemic, pre-pandemic there was consistent growth in the use of rail and Metro. Since 2000/2001, there has been a 84% increase in local rail use in the North East. Between 2000 to 2010 there was a growth of 25%, however this then declined again to a similar figure in 2019 as it was in 2000 at 33 million passengers per annum.

Nationally the use of private cars has decreased by 31% over the last 20 years, however this has been less severe in the North East at only a 3% drop.

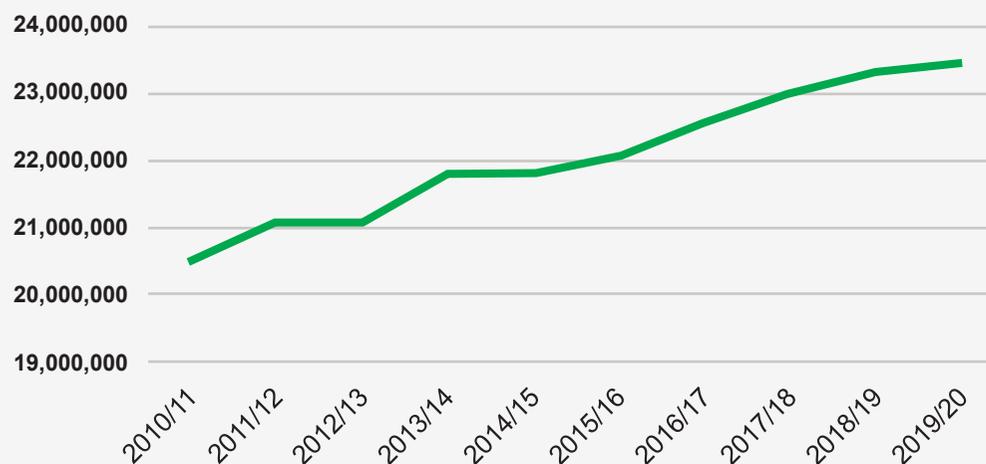
Nationally, surface rail has been consistent at only 3 trips per person per year. However, rail travel in the region had been steadily growing in both long distance and local travel. Between 2010 and 2019, long distance trips grew from

7.7 million to 10.4 million passenger journeys per year and local rail travel increased from 5.4 million to 5.9 million passenger journeys per year.

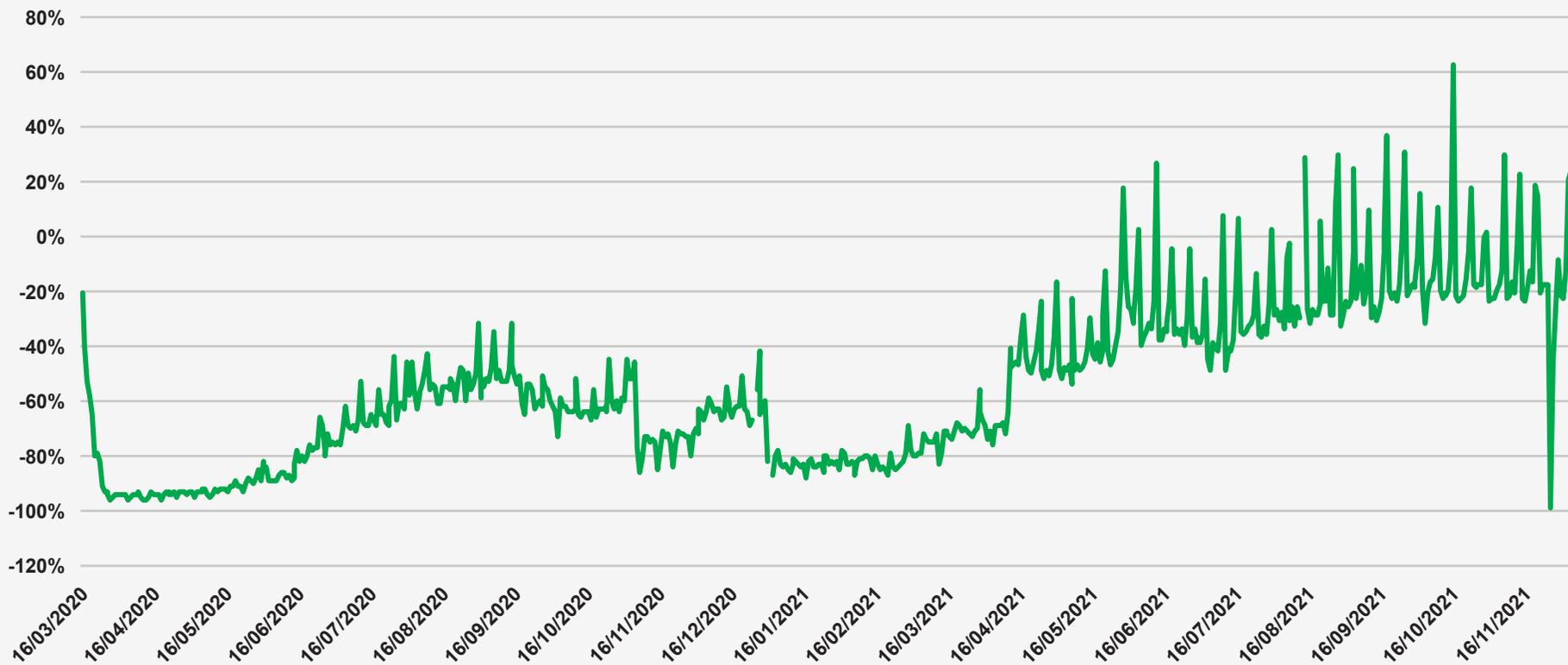
The local rail links in the region have always been key in supporting the North East economy and the social mobility of its inhabitants to be able to make longer journeys to the towns and cities that are spread across our region.

Despite total journeys by any mode decreasing in the region, footfall in our local train stations has increased by over 2 million between 2010 and 2019. Further showing the importance of the rail links in the area. On top of these rising figures, there was further predicted growth on the North East rail network. However, analysis showed that this growth could not be accommodated due to the already cramped timetables and constrained capacity available on the network. This is especially the case on the ECML and the Durham Coast Line.

Chart showing increase in footfall in North East rail stations



Metro Passenger Journeys – % decline



Freight Links

The need to carry heavy freight traffic, primarily coal, was one of the key factors in the development of the rail network across North East England. In recent years, the volume of freight movement and associated rail infrastructure has reduced, reflecting the contraction in coal traffic and the loss of other heavy industries. Other flows, such as biomass, are replacing these historic markets.

However, the region's current rail freight market is subdued following structural changes in heavy industry and the decline of coal. Most freight traffic currently uses the Durham Coast Line. However, there are still operations on the constrained ECML network between York and Newcastle. Strong growth is forecast in the intermodal market (where two or more modes of transport are used to transport goods) via domestic and international container services. North of Newcastle, rail freight flows mostly comprise a mix of container traffic, cement and nuclear cargos. **Biomass has taken up many of the paths formerly used by coal trains.**

Unlike other parts of the United Kingdom, the North East lacks a Strategic Rail Freight Interchange (SRFI) where goods can easily be transferred between road and rail.

- Freight accounts for 9% of the UK's GDP.
- Over 33% of goods entering the UK do so through Northern ports.
- The freight market in the North is heavily dominated by road with 87% of the tonne kilometres transported using road.
- The freight market in the North is expected to grow by over 30% until 2050 across all modes.
- Freight train movements typically take about 23% longer than they would do if there were no capacity constraints.
- Running one additional freight train per hour over the Pennines could save over 10,000 lorry journeys a week.

Post pandemic transport recovery

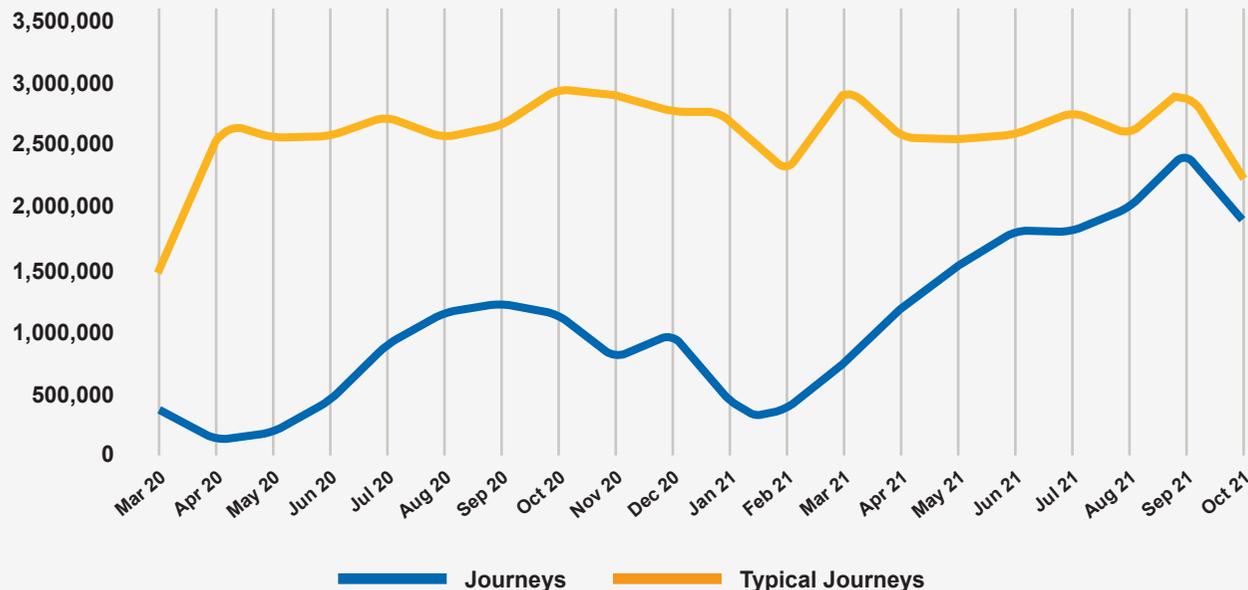
As the region recovers, transport use still suffers from the legacy of the strong government messaging during the lockdown periods to avoid public transport. Instead, where people are travelling, more are choosing to use private car travel.

Data shows nationally that car use is almost back to pre-pandemic levels at 97% of in September 2021, where rail usage was only at 64%.

This shift has been driven by a number of reasons, one of the major factors is the prevalence in flexible working practices brought in over the pandemic. This has led to those who would previously have commuted to work on rail/Metro 5 days per week, now being able to work from home for part or all of the week. A recent survey by Nexus showed 87% of respondents worked from home at least 1 day a week.

Another factor affecting public transport use is the perception that some means of travel are unsafe and individuals can be at risk if suitable Covid-19 measures aren't in place. This is partly driven by the announcements made by government during the lockdowns to avoid public transport but there is lingering thought in the public that trains are still unsafe. 37% of people surveyed who had not taken a train in the last week believed they would not take the train because they are too unsafe.

Actual against typical Metro journeys



Despite these challenges significant recovery is happening as seen on the Metro system, where passenger numbers average around 87% compared to typical patronage for September 2019. Northern Rail have advised that they are seeing on average weekly a recovery of 75% of patronage with the caveat that they are seeing close to or over 100% of pre Covid levels on a weekend.

Passenger data provided by Nexus shows that their weekday patronage levels are currently at approximately 80% of pre-pandemic levels, whereas the weekend patronage is often above 100% of pre-covid levels showing that commuters are not all returning to previous travel habits, but leisure users are. This has also been reflected in data provided by Northern on their passenger flows.

Making sure that freight can travel sustainably by rail is also an important element of our Transport Plan. This means ensuring a fair allocation of network capacity and delivering additional capacity where required including facilities for transfer of goods between road and rail. We will work with partners to identify how rail freight can benefit the region and what assets and interventions need to be realised to enable it.

Metro travel patterns	2019/20	2019/20	20/21 P7-13	21/22 YTD
Commuting & Business	34%	32%	45%	27%
Leisure	32%	42%	10%	38%
Retail	13%	11%	18%	21%
Education	9%	4%	15%	5%
Visiting friends/relatives	8%	5%	7%	6%
Other	4%	7%	5%	3%

Significant flows to leisure destinations, including the Tyne Valley and Durham Coast routes recording crowded trains.

4. What do people think?

It is the people and communities of the North East who are at the centre of our Transport Plan and all our related strategies. To enable us to know what we are doing well and where there is room for improvement, we listened to those who use our transport network.

In late 2020, we consulted upon the North East Transport Plan which asked people across the North East a series of questions on what they wanted to see from transport in the future. We received almost 3,400 responses to our consultation which provided us with details of what our users truly require from transport (including the rail and Metro network). Their experience of, and aspirations for, the North East's rail and Metro networks are a fundamental part of developing this strategy.

We found four key themes which are important to our residents when travelling across the region:

1. Connectivity
2. Health, wellbeing and safety
3. Sustainability
4. Value for Money

Our rail and Metro services have an important role to play in all of these themes.

Connectivity

Connectivity is very important to the North East and participants told us better connectivity is needed, particularly in rural areas.

There was the idea for new developments and neighbourhoods to be designed so they are less car-reliant from the outset.

Chapter 7 of this document on Overcoming inequality and growing our economy details how we propose to improve connectivity.

Health, wellbeing and safety

Some respondents told us they would like to see more done to encourage greater active travel. Chapter 9, Rail and Metro for a Healthier North East looks at this area

Our residents also told us they want to feel safe when travelling on public transport, in particular whilst using stops and stations. Chapter 10 Safe and secure public transport deals with this concern.

Sustainability

Protecting the environment was a key theme and rail and Metro will be vital in meeting our community's needs. Chapter 8 Carbon Neutral Rail and Metro in the North East and Chapter 11 Appealing sustainable Choices cover sustainability issues.

Value for money

Our residents feel public transport fares are expensive and it is perceived to be cheaper to travel by car. Respondents also felt an integrated public transport network across the region would provide better value for money.

Chapter 12 Integration covers this topic area.

Punctuality and reliability

While not outlined by the feedback from the Transport Plan consultation, punctuality and reliability are highly important to passengers on the rail and Metro network. The Spring 2020 Transport Focus Customer Satisfaction Survey found that 72% of Northern Rail customers were satisfied with the punctuality and reliability of their service within the North East.

Chapter 11 Appealing Sustainable Choices explores punctuality and reliability.

"I'd like to have a region where buses run at the same time when trains arrive at stations, so you don't have to wait too long to make a connecting journey."

Male, 35-44, Gateshead

"Look at the map of the railways in the area... there's so many freight lines and unused railway lines and unused railway rights of way, if we're going to tap into them with the Metro, it would improve transport in the area so much."

Male, 25-34, Newcastle

"I think we should have public transport at a cheaper rate so that more people can use it and it will reduce carbon footprint in town centres where people don't take the car."

Female, 55-64, Sunderland

"Promote walking routes and improve cycling paths wherever possible to encourage more people to get out of their cars."

Male, 35-44, Spennymoor

"Building of new houses should be linked to public transport availability - there is too much building going on where the only viable transport is by car which is increasing our carbon footprint hugely. Need better linkage of strategies."

55-64, Northumberland

"A lot of people feel insecure about traveling when it's dark, this is because they feel the stations are dangerous with little security. This isn't so much about the transport, but what you do before getting on the transport."

13-18, Newcastle

What do people think?

“I think the Metro system is crucial to the North East’s prosperity and it should be maintained, developed, extended. Perhaps we could have a restriction on cars into the city centres, more park and ride, more Metro and include some cycle lanes in that as well.”

Male, 65-74, Sunderland

“The North East is in a prime location to be at the forefront of [hydrogen] technology in the UK, with hydrogen being developed in Teesside and the likes of Blyth Port discussed as another suitable location. I would really like to see the local government pushing this agenda more and making people and businesses aware of the technology.”

35-44, Blyth

“It would be great for there to be cheaper fares on public transport to make it more appealing.”

35-44, North Shields

“I think on the whole, transport should be accessible and affordable for everyone... they should still be able to get out and about and enjoy the region without having to worry about how they’re going to get there.”

Female, 25-34, Sunderland

“I’ve lived abroad in countries who have got a coherent rail system, small towns can really profit just as much as the big cities because they tap into them, it’s all about network effects, we have to tap into all that... We need integrated ticketing, one ticketing system across the whole area so you can jump off a bus onto a Metro without having to buy another ticket.”

25-34, Newcastle

“We need cleaner and greener transport. Electrification of rail lines currently used by diesel trains should be investigated.”

Male, 35-44, Spennymoor

“Better public transport - thus more frequent, less expensive and more reliable - to reduce our reliance on cars.”

65-74, Newcastle

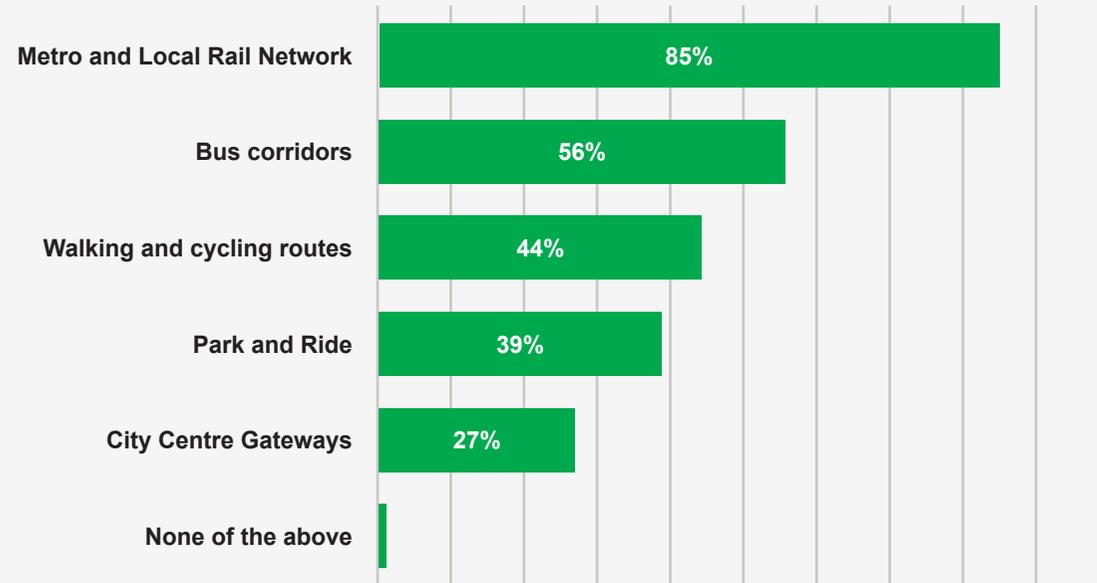
“There has been huge underinvestment in our local railways and there is so much untapped potential to improve connectivity for many communities throughout the region by improving rail links.”

Male, 35-44, Spennymoor

Importance of the rail and Metro network

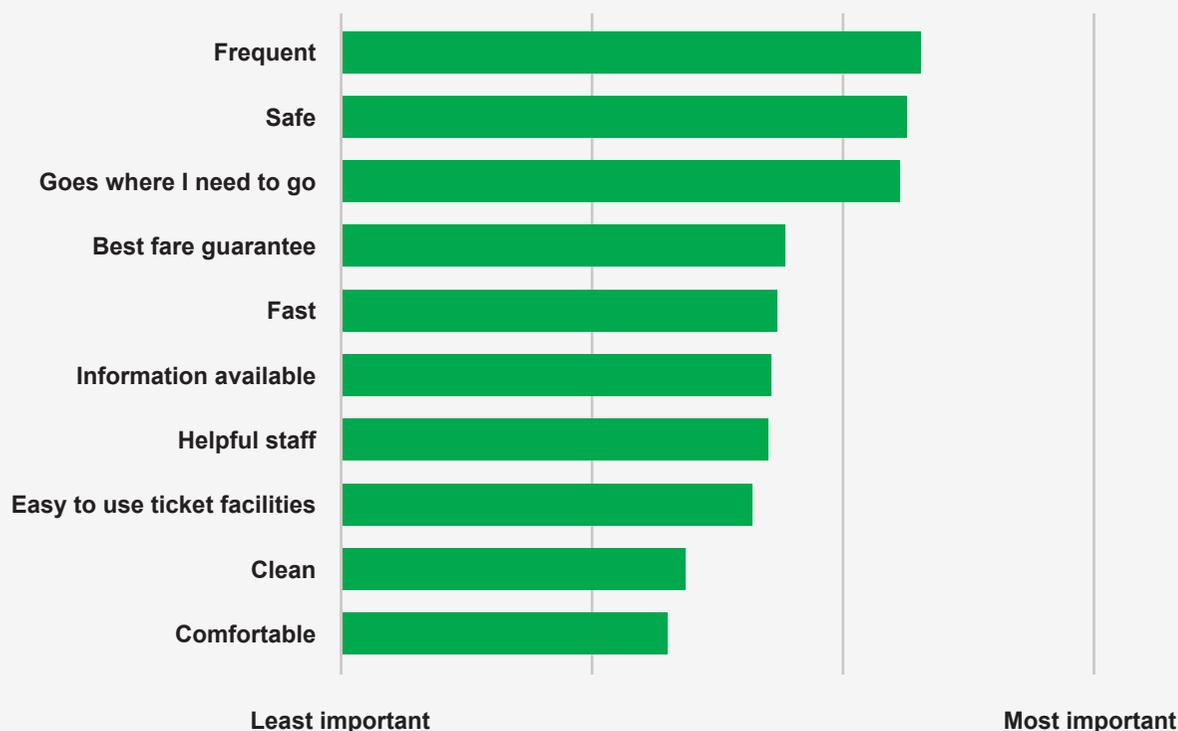
It is necessary to have an understanding of the importance of our rail and Metro network and the key impacting factors on making the network as perfect as possible for passengers. Nexus conducted a survey to understand the importance of public transport and the necessary factors that make up a 'perfect' transport network.

Majority of respondents believe investing in Metro and the Local Rail Network would benefit the region most



Q. What three things do you believe would benefit the region most?
Percentages are over 100% as more than one choice could be made.

Imagine you are creating a perfect public transport system for the area you live in. It would be 100% reliable and at a reasonable cost but in addition it could have just three of the following. Which three would you choose?



Key Insight – Improved connectivity, safety, sustainability, value for money, punctuality and reliability were rated as the most important factors for moving to travelling via rail and Metro.

Policy Drivers

During the drafting of this strategy we also considered a number of national, regional, local and industry strategies and plans.

Department for Transport (DfT) Draft Priority Outcomes (November 2020)

The DfT have a set of priority outcomes for transport interventions:

- Improving transport for the user: Work with the sector to enhance transport users' experience to make the transport network attractive, safe, resilient and inclusive.
- Decarbonising transport: Tackle climate change and improve air quality by decarbonising transport.
- Levelling-up the economy: Improve connectivity across the United Kingdom and level-up the economy by enhancing transport, by region and across the union.
- Increasing our global impact: Boost our influence and maximise trade by having an innovative, outward-facing approach.

Network Rail

The Traction Decarbonisation Network Strategy (TDNS) sets out the rail sector's response to the government's climate challenge by outlining how the direct emissions from trains on the network can be removed. Network Rail strategic advice to improve capacity along the ECML Northallerton to Newcastle and Newcastle to Edinburgh in an effort to deliver a connected North East.

The Williams-Shapps Rail Plan

To provide a reorganisation of the rail industry, with the setting up of Great British Railways. Devolved railways will be strengthened, with closer collaboration with GBR. Improving services, consistency and co-ordination with the rest of the railway is a key objective of our region.

Transport for the North

The long-term Rail Strategy supports the Vision of Transport for the North's Strategic Transport Plan for:

“A thriving North of England, where modern transport connections drive economic growth and support an excellent quality of life.”

The objectives set out are:

- Increase efficiency, reliability and resilience in the transport system - Improve the performance and integration of the North's strategic transport network by making the case for interventions that improve its efficiency, reliability and resilience.
- Transforming economic performance- Secure investment in transport between the important urban and rural economic centres and assets to support sustainable transformation of the North's economic performance.

- Improve opportunities across the North- Ensure that the Strategic Transport Plan works for everyone who lives and works in the North through improved access to opportunities for all across the North.
- Promote and support the built and natural environment- Ensure that transport interventions across the strategic transport system protect and enhance the natural and built environment.

North East LEP – Strategic Economic Plan

Key rail deliverables:

- Continued participation in Transport for the North and Rail North to identify pan-northern connectivity priorities.
- Agreement with Northern Powerhouse Rail and others on approach to East Coast Main Line improvements.

North East Climate Emergencies

All of the Local Authorities (LA's) in the North East have declared a Climate Emergency; meaning they've acknowledged that the Council needs to act on the causes and impacts of climate change.

This has led to many of the LA's working to reduce their emissions including a push for a modal shift to more sustainable methods of travelling, including rail and Metro.

Integrated Rail Plan (IRP) for the North and Midlands

In November 2021 the UK government's long-awaited 'Integrated Rail Plan' (IRP) for the north and midlands was published. The outcome for the region was severely disappointing as the North East will no longer be fully connected to the UK's high speed rail network (neither HS2 nor NPR) and there is less committed rail investment in the plan than we believe is needed for the area.

We are also concerned about possible significant economic consequences for the region given that rail connectivity will transform between many English centres, but the North East will be almost untouched by these benefits. However, as outlined in this strategy, we will work with Network Rail and the government to secure maximum benefit for the region and to secure the significant rail investment we believe is needed for the North East.

5. Data led interventions

In the proceeding chapters, we have started to build a picture from the policy drivers and the evidence gathered from users and industry data as to areas for improvement. In the next chapters we concentrate on developing solutions grouped under the Transport Plan objectives headings, plus a key complementary objective of Metro operations, maintenance and renewals and Integration ‘One Network for the North East’.

Metro operations, maintenance and renewals

The North East is in a unique position having its own Metro light rail services on which to build an integrated public transport system to benefit our communities and businesses.

To operate, maintain and renew the Metro requires significant resources.

There are two sides to the story here, through growth in Metro passenger numbers a significant benefit arises covering the North East Transport plan objectives and thus projects and initiatives to grow patronage are covered in detail in the other objective based chapters. The other side is that to retain and grow passenger number we need to operate and maintain a safe and reliable railway.

Nexus operate and maintain the system to keep it running effectively and efficiently. However it is an ageing network having just passed its 40th birthday. Many of the components that make up the Metro system are starting to fail and contributing to reduced levels of performance and restricting potential growth. To keep the level of performance expected by today's passengers and to encourage more to make the sustainable travel choice in the future, requires both cyclical maintenance and investment to renew redundant equipment.

Nexus continue to prove they can deliver, given the required financial backing, major changes to improve the quality, reliability and attractiveness of the Metro. The new Fleet is coming soon and significant repairs and renewals have taken place over the last decade.

This chapter therefore reflects on this excellent work to date, looks at the current projects and set out the future needs.

Overcome inequality and grow our economy

As mentioned previously the majority of data we have to draw upon relates to existing users on existing networks. In order to spread the benefits of accessibility and connectivity to more people we have plans to increase the reach of local rail and Metro and increase the connectivity beyond our borders to regional and national social and economic hubs.

Research has shown that every additional passenger journey on local rail and Metro is worth an additional £8.50 to the economy.

By providing greater access and connectivity opportunities to jobs, training, education, health and tourism, more people can improve their lives.

Carbon neutral transport

Reducing the harmful effects of transport emissions is a key national and local priority. This chapter focusses on improvements the industry can make in terms of reducing the use of diesel trains and improving the efficiency of the existing non diesel fleet (e.g. Metro).

This is only part of the story though as rail and Metro as a percentage of overall travel in and through the region is relatively small. Thus, making rail and Metro more appealing to use, and attracting new passengers will reduce the overall carbon impact of transport, meeting the sustainability goals expressed in the data sources.

Healthier North East

Improving the health of the North East residents is another key local and national priority. As a result of the pandemic more people have been cycling and walking as part of their daily routine. What we aim to do as part of this strategy is improve access to stations and where practicable on trains to enable these good habits to continue. As people return to our towns, cities and businesses we wish to make active travel part of peoples integrated journey.

Safety and security

Another area that is regularly raised as a barrier to using rail and Metro is the perception of safety and security. This is tackled under its own specific objective and is closely linked to the customer experience and thus passenger numbers.

Appealing and sustainable travel

Taking note of the responses to passenger surveys and previous consultations there are some key areas to tackle under this objective. Improving the customer experience is the key under this objective. Research has shown that failing to meet customer expectations has twice the negative impact as delighting customers has a positive impact.

Thus, this chapter explore the varied elements of a journey that combine to make a positive experience. This will cover planning the journey (including product choice), access to the station, the station itself, on the train experience and better communication if things go wrong.

Therefore, initiatives and interventions are being proposed to make the existing experience more appealing to new and existing passengers.

In order to keep the customer experiences high, we must also invest in the infrastructure to ensure trains and Metro cars can run reliably and minimise service failures.

Integration

The final chapter in this part of the strategy looks at integrating the full journey across all public transport modes be that bus, Metro or rail. The aim is linked to the other Transport Plan objectives and is the glue that can bind the various pieces of the jigsaw together.

In this chapter we also consider the opportunities that might arise from the reshaping of the rail industry and how local rail can become more aligned with North East priorities and work in tandem with Metro and local bus services.

6. Metro operations, maintenance and renewals

The North East is in a unique position having its own light rail network (Metro) on which to build an integrated public transport system to benefit our communities and businesses.



It is important to not only integrate Metro's role within the main body of the Rail and Metro Strategy but also to highlight some of the key elements that will require ongoing government support to ensure the people of the North East continue to enjoy the benefits of the Metro long into the future. This section therefore focuses on Metro operations, maintenance and renewals. The importance of Metro in delivering the North East Transport objectives is detailed within the main objective chapters showing how Metro and local rail can work together as part of an integrated system.

To operate, maintain and renew the Metro requires significant resources. The fares from passengers contributes significantly to cover the day-to-day operating costs as do annual levy contributions from the Tyne and Wear Local Authorities, but there is a continued need for government grant to cover the annual shortfall and to ensure a continual programme of maintenance and renewals akin to the cyclical and major investment programmes undertaken on the heavy rail network.

There are two sides to the story here, there is what the Metro brings to the North East and the operational needs to keep to Metro improving and expanding into more areas. Nexus continues to prove they can deliver, given the required financial backing, major changes to improve the quality, reliability, and attractiveness of the Metro. This chapter therefore reflects on where the Metro is currently, how to grow patronage and the maintenance and renewal required together with future needs of the service.

Where are we now?

The value of the Metro service to the people Metro was the UK's first modern light rail service, the first to be designed with disabled people in mind, the first to be non-smoking and the first to provide mobile phone and internet reception throughout its underground sections. From the outset, Metro was designed to be accessible for wheelchair users, with lifts and ramps and level boarding on to Metrocars. Accessibility standards have risen and significant expenditure in the Asset Renewal Plan focused on meeting and in many cases surpassing national station access standards and through the refurbishment of the Metrocars to meet the requirements of the Rail Vehicle Accessibility Regulations, 2010.

Metro is part of everyday life in Tyne and Wear, an essential part of the fabric of the region and accessible to over 40% of the population.

Pre-pandemic, there were about 36 million journeys on Metro, nearly 14 million commuter journeys, and over 4 million journeys connect residents to education. Nearly 50% of Metro journeys are made for leisure, shopping and socialising, allowing residents and visitors to the region to enjoy seaside towns and vibrant city centres. Metro serves Newcastle International Airport directly. Metro's existence is integral to the region's ability to host high profile special events that generate considerable contributions to the regional economy.

In 2018, The Tall Ships event and International Airshow at Sunderland generated £19 million for the wider economy; the Heineken Cup rugby final in Newcastle generated an estimated £35 million and each year the Great North Run (which relies on Metro to transport over 90,000 runners and spectators) is worth at least £26 million. Each week, Metro supports regular sporting events such as football at St James' Park and the Stadium of Light, and rugby union at Kingston Park.

A report commissioned by Nexus in 2018 concluded that every year, Metro, and local rail contributes around £165.6m of Gross Value Added (GVA) to the North East economy, which equates to an economic value of around £8.50 per passenger journey (under normal economic circumstances). This value captures the benefits accruing to individuals, businesses, and wider society from more efficient travel, greater productivity through better business connectivity, and selected social and environmental impacts which can also be more readily monetised.

Covid recovery

Following the pandemic, Metro is now the second most used light rail network outside of London, by head of population. Highlighting the importance of the role it plays in getting people to work and education and supporting key workers and frontline services. Prior to 2020, the moving annual total of Metro journeys was 36 million trips. Most services had adequate capacity, with some peak-time services having heavy passenger loadings.

The impact of the pandemic on Metro Operations has been significant and it is clear that Metro will need on-going revenue support until at least 2023-24 financial year to maintain operations. The priority will be both negotiating this support with Central Government to avoid devastating cuts to Metro services which will have significant wider economic implications and taking steps to both encourage customers back to the network and attract new customers to choose Metro.

These steps are set out in Nexus' recovery plan and will be reviewed at least annually to ensure the measures being put in place are effective and respond to the latest intelligence and travel patterns.

Transport Focus had undertaken research throughout the lockdown, a survey of 2000 people in May 2020, found that four out of ten people said they wouldn't use public transport again until they feel safe. Also, they found that the number of people happy to use public transport when restrictions are lifted had gone

- 55% of UK workers would like to work more flexibly, including changing their start/finish times or working their hours across fewer days, compared with before COVID-19.
- 59% think it is likely their employer will let them make the changes they want to their work location or working patterns.

All forms of public transport suffered during the lockdowns of 2020 and early 2021. At the start of the pandemic public transport ridership fell by 95%, since then the Metro system has seen patronage fluctuate as restrictions changed, however the system has recovered quickly in comparison with other light rail networks.

Changes to passenger behaviours impacted on travel patterns. As an example, the percentage of the workforce working for their employer from home in the region increased from 4.5% to 27% within weeks. This is a disproportionate reduction in commuter flows, often a source of regular season-ticket revenues. Flexibility of resources to meet abrupt temporary and permanent changes in demand will be a key feature of future public transport planning and operations. Changes to the function of established retail centres are a well-established trend accelerated by the pandemic however individual outcomes are more nuanced and vary by activity and location. Data shows that out-of-home retail activity is in net decline, whilst online retailing and home delivery activity have increased substantially.

As a response Nexus implemented the interventions, including 'Kids go free' and 19-21 POP products and an on-going focus on enhanced cleaning, patronage on Metro by the end of 2021 had reached the upper levels of expectations; however, recovery has been heavily led by the leisure market.

Customer service

Nexus employees are trained to deal with a wide variety of situations at stations, this can range from helping passengers with additional requirements to giving instructions during an emergency. Nexus provides a range of information sources which can be viewed by customers at any time. All online sources only provide information based upon timetabled departure times and are not updated to reflect cancellations and are therefore not always up to date and reliable. Nexus currently uses a Content Management System (CMS) to publish information for all feeds, providing a consistent message across a variety of platforms. There is often a delay on the website, meaning that customers who use the website as their primary source of information are likely to receive information later than those customers using an alternative information source. Different platforms (RTI & station boards) have different data sources, due to this the messaging can be inconsistent across platforms. These issues are being addressed as part of the implementation of Nexus' Customer Information Strategy.

For more information on Nexus customer services please see Safe and Secure Chapter.

Customer satisfaction

In November 2021 overall satisfaction with Metro was 7.8, the is the highest score since 2013/14, highlighting those customers who were happier with what Nexus were doing to keep Metro safe as they return to public transport. Further research undertaken by Transport Focus found that:

- 50% said that in the future they will be more likely to drive for journeys they would have previously made by public transport
- 25% said that in future they will be more likely to cycle for journeys they would have previously made by public transport
- About 4 in 10 said that in future they will be more likely to walk for journeys they would have previously made by public transport

Research undertaken by Systra, found that:

- 29% of office workers never want to return to the office, instead wanting to work from home.
- Of those that commute by rail or bus, this figure increases to 32%.

Real Time Information

An outline business case is being developed by Nexus for future funding opportunities for the implementation of real-time information (RTI) through a unified Application Programming Interface (API), which would ensure that all channels are fed from one source of information. Please see Integration chapter for more information.

Communication Channels

Nexus offers information to customers in a range of legacy and modern formats, catering these to the requirements of our customers. Currently, Nexus communicates with customers through mail, text, and web. The @My_Metro Twitter page replies to customer queries and posts updates on travel disruption on the network. The Twitter page is a main source of information for customers, with the account having over 130,000 followers and over 115,000 tweets. Customers regularly interact with Twitter for general enquiries since it's often the quickest way online to receive information.



Metro app

Nexus currently offers an official Tyne and Wear Metro App. The app makes it easier for passengers to get around Tyne and Wear by Metro. As well as incorporating official timetable and connection information, the app pulls live travel alert data direct from Tyne and Wear Metro Control room, giving passengers live updates on the service and travel advice during periods of disruption. The app also allows passengers to plan by setting

up favourite stations and journeys. It has been recently updated to help customers identify quieter times on Metro, allowing them to make informed decisions about when to travel, for those who have the choice.

Customer Journey Mapping

A prototype customer sentiment map is currently being developed by the Business Intelligence Team. This can be used to pinpoint lagging points in service offerings and may be integrated with the Nexus Insight Panel and pulse surveys to provide up-to-date information on the customer experience.

Investment in the Metro service

More than £350m of capital investment has been spent renewing and improving network infrastructure between 2010 and 2021, and between 2021 and 2024 a £362m+ new train fleet and depot will replace the current Metro trains and Metro Flow will add more capacity and improved frequency to the service. However, Nexus face challenges in the short term – one of them is a gap in revenue funding. Government provided revenue support which is due to end in April 2022. Nexus will still have a substantial gap in funding for the Metro network over the next three years, as it has not fully recovered from the fall in passengers due to the pandemic.

Without continued Government support the network would face significant financial challenges, and given the high level of fixed costs associated with running the network reducing costs would be challenging:

- Without additional grant support, the only way to attract funding is to exploit Metro and grow fare revenue – cutting services is counter intuitive

- If services were cut to 3 trains per hour (every 20 minutes) and 2 trains per hour from 19:00 each day would deliver a £3.7m saving, but modelling shows this would have a major impact on revenue with an estimated loss of £4.0m
- To achieve this there would be significant upfront redundancy costs due to the reduction in headcount.
- Several £million would be incurred in respect of the termination of contracts e.g., policing and security, cleaning and the new fleet
- Ultimately would lead to the closure of the Metro system which would have a detrimental impact on the region
- £8.50 per journey lost to the economy
- Increased car usage (estimated 12million cars) leading to significant damage to the environment.

Furthermore, the Metro network has unique parameters. These are: 1500V DC overhead line voltage, and 3.15m vehicle car-body height – which is considerably lower than vehicles used on similar networks. No other light rail vehicles are currently utilising High-Floor vehicles of a similar structural gauge. Typically, other LRV networks have car-body heights of around 3.6m – 3.7m, 500mm more



than the Metro fleet. This means that a lot of the equipment for Metro has to be specially designed and bespoke for the network and therefore requires funding to maintain and develop in the future.

Investment in the Metro needs to continue as it could impact the service and many people may not be able to travel at all, either because alternative forms of transport are not available to them or because the road-based journey time would be unattractive. This will lead to significant reductions in accessibility, reducing peoples' access to education and employment opportunities, as well as to a broad range of social and healthcare options.

Nexus' asset management plans demonstrate that without investment the network would first face speed restrictions, which would impact on customer satisfaction and journey time, then, progressively close. Without Metro there would be serious detrimental effects on the highways network. Research with the Nexus insight panel demonstrated the personal impact that no Metro service would have, with 20% switching to cars. Analysis for the business case for the essential renewals programme forecasts an increase in car trips of over 11 million by 2028.

This would put more pressure on river crossings, city centre junctions and radial routes. Emissions would increase; in 2007 this was forecast to be an extra 3,480 tonnes of CO2 per year due to increased car use. Increased levels of accidents were forecast, and the local bus networks would be overburdened.

The ARP Phase 2 has helped replace and renew parts of the infrastructure that were ageing or had become life expired. However, this work has been prioritised by order of need and asset condition, within a limited budget, and this programme is only addressing a part of the asset renewal needs of the Metro system. There is an on-going and continually increasing need to renew those parts of the system that had previously been considered less of a priority but whose condition will gradually deteriorate with the passage of time, to the point where renewal or replacement is required. Such replacement or renewal will help ensure that these assets are able to cope with current levels of day-to-day operations together with projected increases in patronage.

Nexus have argued that despite owning and operating a railway with similar characteristics to the national rail network, it had no certainty of funding for either on-going operational subsidy, or renewal and maintenance work, contrasting sharply with franchised heavy rail operators who have subsidy commitments for the period of the franchise, and Network Rail whose funding is based on a regulated asset base (RAB) calculation and reviewed on a 5-year basis.

Following award of its long-term funding commitment from DfT to Nexus in 2010, there is no doubt the Metro system has benefitted significantly from having a certainty of funding that has enabled renewal of infrastructure and properly planned maintenance, with improved asset knowledge leading to a reduction in unplanned maintenance and renewal. This allowed greater value for money to be achieved.

The guarantee of funding from Government, subject to certain conditions, has meant that Nexus has undertaken essential works to replace track, upgrade stations and renew points over a programme period. Some of the projects take years in the planning stage, such as the major line closures.

Without this long-term funding commitment from Government, Nexus would not have been able to undertake such major works, nor would it be able to take a holistic and long-term approach to the maintenance and renewal of its assets. This is why, at the outset of the ARP in 2010, Nexus and Government acknowledged the need to maintain an eleven-year planning horizon, which the DfT recognised as necessary in order for Nexus to continue to plan the cost effective and efficient delivery of its Plan.

Assets which have not been renewed during the Asset Renewal Plan (ARP) have aged further and will need renewing or replacing in subsequent years. Lack of investment in the various asset categories have differing degrees of impact on the network, but ultimately all result in the degeneration of the service impacting on the reliability and frequency of Metro. Failure to invest in the permanent way will result in the imposition of speed restrictions and eventually parts of the network being closed to passenger service.



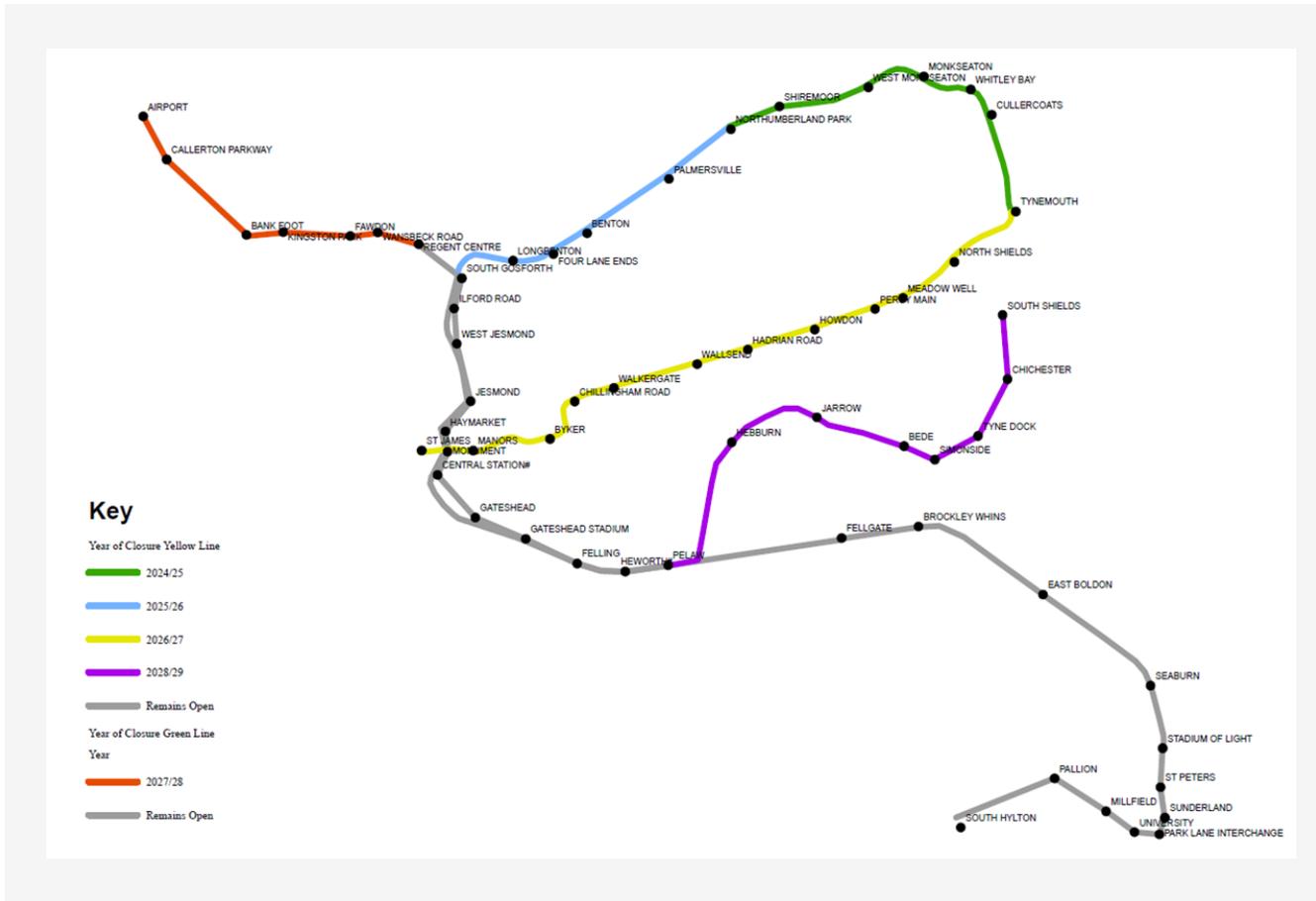
ARP Delivery Achievements

- 54 Multi-Functional Relays installed
- 35 Stations have been refurbished
- Delivery of South Shields Interchange
- 79.1 km of track has been renewed or refurbished; comprising of 37.3km of ballasted track renewal, 27.9km of existing ballasted track refurbished and 13.8km of track re-railed.
- 49 Switches and Crossing shave been renewed or refurbished;
- 82 sets of points motors have been replaced;
- 6.5km of track drainage has been installed;
- 31.5km of cable troughing has been refurbished;
- 86.5km of signalling cable has been replaced;
- One depot rectifier transformer replaced and 2no. ground mounted OHL switches installed
- 20 bridges have been structurally repaired/ replaced and 5 bridges have been removed in their entirety;
- 27 escalators and 12 lifts have been replaced;
- A new Metro car wash and wheel lathe have been installed at the Gosforth depot;
- A new rail tamping machine has been acquired;
- 2km of earthworks have been repaired through ballast retention and stabilisation;

- 47 route km of OLE conductors replaced, this includes circa 54km of Contact wire and 42km of Catenary wire. On top of this, there has been an additional partial completion of circa 2.5 route km of twin contact wire (additional 5km total), the associated catenary wire replacement to follow. To date there have been 121 Cantilevers replaced.
- A new hardware platform for critical communications systems has been installed together with the replacement of help points, the public address system and over 600 CCTV cameras.
- The virtual server ICT platform has been renewed together with centralised storage for the new CCTV cameras.
- 86 Metrocars have been refurbished at ¾ life.
- A new Radio System has been installed;
- A new Rail Traffic Management System (RTMS) has been installed.
- 5 new technology EBI track circuits installed.
- Howdon depot commissioned
- Nexus Learning Centre completed.

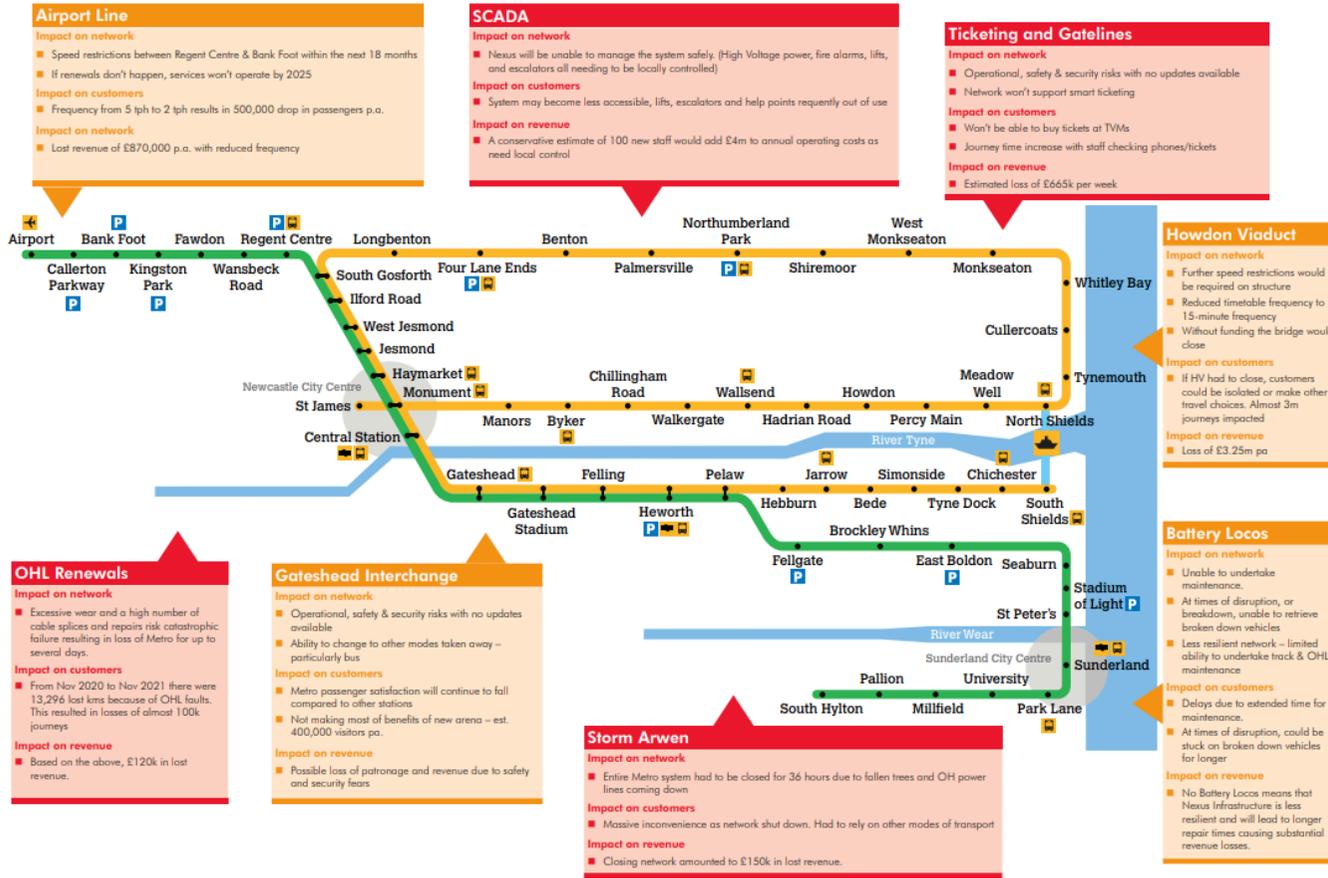
When Metro was experiencing challenges with the punctuality and reliability of the rolling stock in the mid 2010's, customer satisfaction levels dropped. In 2010/11 the punctuality score for Metro was 79, this fell to 59 by 2016/17 and after a temporary improvement dipped again in 2019/20 . Whilst this has been driven by the poor performance of the fleet, which will be addressed via the fleet replacement programme a similar scenario exists if Nexus do not attract a long-term capital funding agreement with Government beyond 2022. A failure to continue to invest in the renewal of the Metro infrastructure would have the same result, or worse.

When the current ARP period ends, Nexus estimated that there is likely to be a period of three years' of grace where normal services can operate. Several sections of permanent way, if not repaired after this period, will be subject to closure.



- **2024/25 - Regent Centre to Airport** - Services could not run from Airport to Regent Centre. It will therefore be assumed that services will run only from Regent Centre to South Hylton (Green Line) and from St James to South Shields via the coast (Yellow line).
- **2025/26 - Plain Line** - Tynemouth to Chillingham Road – Would mean services on the coastal loop could not run from St. James to South Gosforth.
- **2026/27 - Plain line** - Tynemouth to Northumberland Park – Services on the coastal loop could not run Tynemouth to Northumberland Park.
- **2027/28 - Plain Line** - Northumberland Park to South Gosforth – Services could not run from Tynemouth to South Gosforth.
- **2028/29 - Plain Line** – Pelaw to South Shields – services would only run from Regent Centre to South Hylton on Network Rail infrastructure (Pelaw to South Hylton) (Green line) and South Gosforth to Pelaw (Yellow line) 2.

Tyne and Wear Metro System



New Metro Fleet

Nexus has successfully secured Government to funding to replace the ageing Metro fleet. Government provided £332m (out of £362m total) of funding for a new fleet of Metros and a brand new replacement depot.

The network was experiencing challenges relating to the reliability of the current fleet due to their age which was having an impact on passenger satisfaction.

After a thorough procurement process, Stadler were appointed to build our new Metros and Depot. An extensive public consultation allowed Metro customers to have their say on design and layout of the new Metros. The new Metros will provide a transformational change for our customers. More details are provided in the case study below. (Please see New Metro Fleet and Depot for more information)

Metro Flow

Nexus was successful in attracting £100m of Government funding through the Transforming Cities programme.

This project will deliver:

- More capacity: an estimated 24,000 additional spaces per day across the system to transport more customers in greater comfort
- More frequency: the capability for a 20% uplift in daytime services network wide each week, reducing overall customer journey times, with the opportunity to enhance weekend services subject to the business case.
- More resilience: improvement in service recovery in the area of the network, which is most affected, meaning a reduced impact on our customers during times of disruption, it will also act as an enabler to deliver more stations and facilitate Metro expansion.

These benefits will be delivered through dualling a section of track in between Pelaw and Jarrow which is currently single track.

It will merge Metro and Network Rail's infrastructure to extract better value from both assets at a favourable cost.

The project delivers the following outputs and outcomes:

- Twin-track Metro operations throughout between Pelaw and Jarrow
- Network capacity and resilience to enable the reliable operation of a minimum
- 10-minute daytime frequency throughout the Metro network
- Four additional new Metro trains to enable more frequent services to be operated, taking the fleet to 46.
- Passive provision for a potential additional station between Hebburn and Pelaw
- Continuity of freight train operations at Jarrow oil terminal new fleet (highlight more detail in case studies)

Where do we want to be

Nexus wants to continue to deliver a frequent, reliable, safe and secure Metro service for its customers. Investment in new technology, in Metro infrastructure (such as tracks, overhead line, stations and other assets) and in new rolling stock will secure Metro's future for the medium to longer term.

The value of the metro service

Improving customer service

Nexus has a responsibility to provide an excellent service and is committed to providing efficient public transport, which is pleasant, convenient, and accessible to all customers. The services Nexus provide are essential in getting people to place of work, retail, and leisure at an affordable price.

In recent years, technology has granted consumers growing power over how and where they buy products and services, and industry leaders have steadily raised expectations and redefined industry standard processes for providing a superior customer experience.

Improving customer experience will contribute greatly to maintaining existing customer base and attracting new customers to the network. This is critical in the wake of the pandemic, as improving customer experience increases customer loyalty and retention. It is therefore imperative that the customer experience is prioritised to rebuild trust with our passengers. Nexus aims to grow patronage to exceed pre-pandemic levels, helping to place Metro on a secure financial footing.

For more information on customer service please see **Appealing, Sustainable Transport Choice** chapter.

The customer experience strategy for Nexus sets out a range of measures, to be introduced in the run-up to the introduction of the new fleet, so Metro can offer a transformative change to the customer offer which matches that of the trains, as detailed below:

- Develop a methodology to identify lagging points and manage the customer experience.

It recommends developing customer journey mapping (CJM) to better understand the passenger experience and identify problem areas in our service offerings.

- Make improvements to our digital presence and communications channels.

This includes all digital interfaces, such as the Nexus website, Metro app, and social media accounts. This also extends to various communication channels, whereby information provided can be personalised using data analytics, or displayed using real-time information (RTI) technology.

- Embed customer-centricity throughout Nexus and empower customer services. This may be achieved through equipping customer-facing departments with digital solutions to empower staff, such as AI chatbots.

Growth back to pre-pandemic levels - Recovery interventions

In response to the changes in travel patterns Nexus developed a Recovery Plan, setting out the short, medium and long term actions needed to win customers back and attract new people to Metro. But in the short to medium term, Metro faces a serious funding shortfall. Revenue has not grown equally with patronage levels, and the revenue model for leisure trips is less than that of commuter market. This is despite very good cost efficiency, delivered through unit costs for service operations and maintenance that are nearly the lowest globally, with administration costs that are below the global average, suggesting that any opportunities to reduce costs are likely to be extremely limited. In fact, as part of our recovery, it is necessary that Nexus incur some additional costs to provide our customers with the service and reassurance they deserve and implement interventions to attract new customers.

To achieve this, Metro requires significant ongoing support to combat the severe and lasting financial impacts of the pandemic. Nexus' research shows that previous customers are likely to make fewer journeys in future. Those previously commuting 5 days a week, may now only commute 2-3 days and more customers will be shopping online. Research also suggests that customer are combining journey purposes and thus making fewer trips.

The first step in the recovery plan has been to reassure customers that Metro and public transport is safe, overcoming negative messaging throughout the early stages of the pandemic. Research shows that customer still perceive travelling on public transport to be risky; in August 2021, the Insight panel showed that 37% of respondents still felt uncomfortable on public transport, compared to 26% eating in a restaurant and 24% visiting a city centre.



Theme 1 – Reassurance

The first step in Nexus' recovery plan was to reassure customers that Metro is a Covid-secure environment and a safe place to make their journey. This included deep cleans and sanitisation of the Metro fleet, increased cleaning around the system during operational hours, increased employee presence to support customers and challenge anti-social behaviour, and the launch of an app which shows customers how busy services are, supported by publicity, communications and signage. There will need to be continued comprehensive, targeted publicity, highlighting steps that are being taken to maximise personal safety and minimise risk. Nexus will keep customers involved through online channels, and actively explore any new products and processes that come to market that will improve the safety of customers and staff. Nexus have worked with our stakeholders on Community Reassurance exercises which target anti-social behaviour and provide guidance on use of face coverings.

Theme 2 – Flexibility – planning to respond to changing markets

Nexus will investigate changes to timetables and staff rosters that will result in future schedules being attuned to changing customer requirements – this could mean an increased focus on catering for local and leisure trips instead of an intensive weekday peak service, for example. Nexus will accelerate the move to smart integrated products, reducing paper ticketing and cash on the network, driving efficiency along with meeting customer expectations. This will be supported by a marketing and communications plan.

Theme 3 – Attracting new customers and targeting new markets

Nexus needs to actively target new customers to grow patronage, this means developing plans and schemes to attract journeys from car and to improve walking and cycling to Metro stations to widen the catchment area of our stations. By attracting people who haven't used Metro before as well as winning back our former customers, Nexus will help to return to levels of pre-Covid journey volumes. As fewer people travel for work, Nexus anticipate people will make more local journeys and more leisure journeys. Product ranges, services and information will support these journeys and make public transport an attractive choice.

Improving modal shift

Research into network capacity carried out in 2019 to assess the feasibility of introducing clean air zones and associated road user charging in Gateshead, Newcastle upon Tyne and North Tyneside showed that whilst some trains were regularly very busy, there was sufficient capacity to accommodate some modal shift from car to Metro.

Metro delivers economic benefits in the following ways:

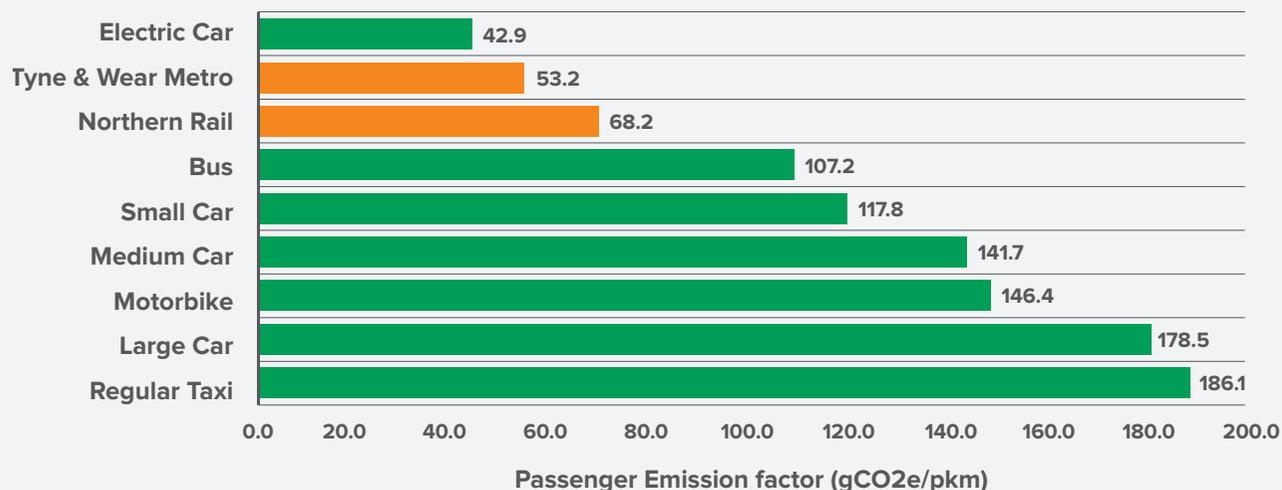
- Providing labour market access and mobility
- Supporting businesses, inward investment, and economic growth
- Improving long term productivity growth.

For more information on the economic benefits of Metro please see the Overcoming inequality and growing our economy chapter. Outside of these core channels, Metro also:

- Supports economic inclusion across socio-economic groups - despite some areas of strength there are fundamental challenges within the labour market relating to persistently high levels of economic inactivity, worklessness, and/or income- linked deprivation which COVID-19 will only accentuate in the short term. Metro services play a very important role in providing good levels of accessibility from these areas to jobs, education, training, retail and health facilities, as part of a more inclusive economic model that drives productivity.
- Supports land utilisation in and around stations as well as supporting the regeneration and renaissance of town centres, which have been particularly hard-hit by the effect of measures required to control the spread of the virus.

- Enhances the North East's quality of life attributes – Metro provides efficient access to urban centres and encourages people to live and work in our region. Use of Metro also contributes towards town centre regeneration by acting as a gateway and providing access to services. It also helps to reduce road traffic and harmful emissions, road traffic accidents and community severance.





Public transport and Metro in particular should be seen as part of the solution to the climate emergencies and poor air quality. Despite the age of the existing train fleet, Metro delivers excellent environmental performance. Based on average (pre-pandemic) levels of occupancy, Metro produces the second lowest emissions of any non-active form of transport, with electric road vehicles coming first.

With a new fleet due to enter service in 2024, this performance will further improve making Metro the most environmentally form of travel in the region, excluding walking and cycling.

The North East Joint Transport Committee has an ambitious programme to complement the ‘net zero’ targets of the region’s local authorities by improving public transport and active travel so that they become the modes of choice for an increasing proportion of society on an everyday basis.

Please see the Carbon Neutral Rail and Metro for the North East chapter for more information.

Investment in the metro

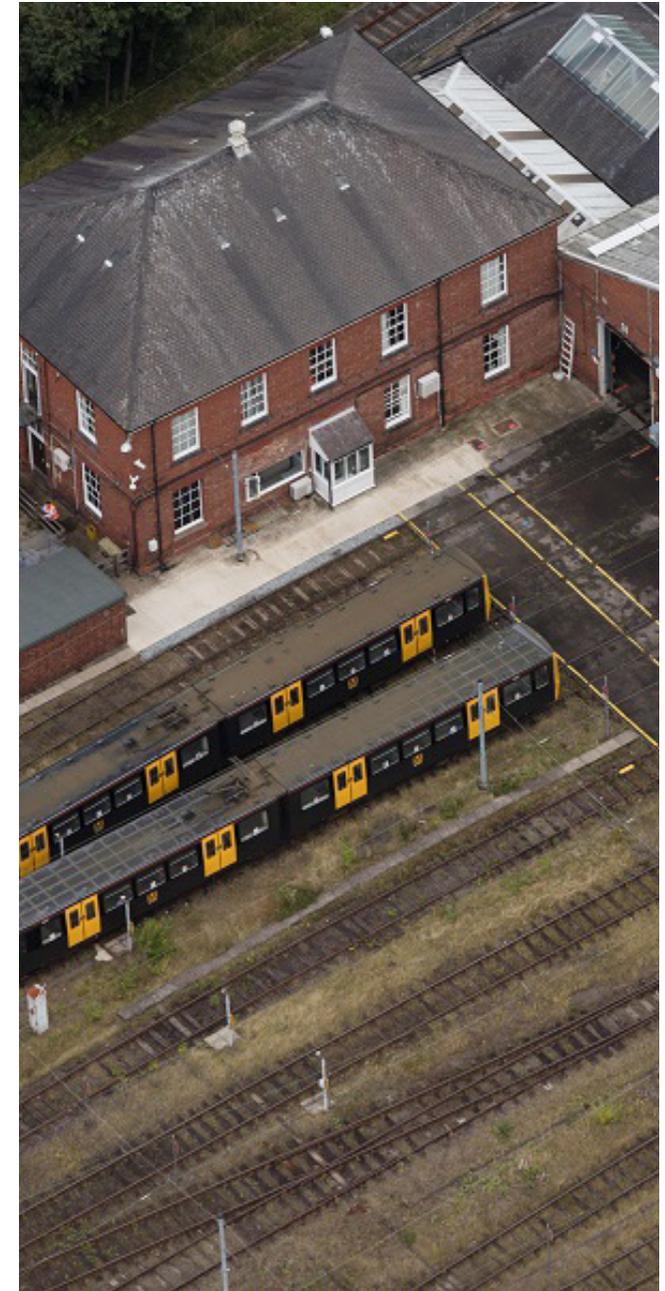
As Nexus operates, owns and manages its own network, there is a need to ensure sufficient funding exists in order to maintain the infrastructure to a condition that enables train services to be operated; another principle that central government accepted in 2010 when approving its long-term funding commitment to Nexus. However future funding is needed to continue to develop and improve the service to the North East.

If there is no investment in Metro, the service will deteriorate to a point where journey times become unsatisfactory, customer experience and satisfaction deteriorates, and reduced reliability will make the network unattractive for customers. A reduction in the number of people using Metro will inevitably lead to a significant increase in road-based travel, adding to existing congestion, reducing productivity and increasing harmful emissions.

Station upgrades

The comprehensive programme to upgrade and refurbish Metro stations was planned during ARP Phase 2 but has been substantially deferred following a reduction in funding. The programme for 2020 to 2030 includes the refurbishment of the remaining 13 stations. 11 of these stations will be brought up to a modern day quality standard and finish, with new and reconfigured vitreous enamelling panelling throughout, new floor and platform surfacing, signage and wayfinding in line with current Nexus branding, together with improved accessibility to bring the stations in line with the Equality Act.

The remaining stations are two heritage stations, Whitley Bay and Tynemouth. Improvements of a different nature are required, taking the form of re-branding in a manner sympathetic to the construction of these stations. It is anticipated that the works will comprise painting of ironwork in the current Nexus colours, renewal of signs and wayfinding panels, platform surfacing and improving accessibility where practicable.



Metro extensions

The feasibility and demand studies that are mentioned in a Growing our Economy chapter are currently in progress or have been completed. Once all of the studies have been completed, and whose recommendations are considered by the Joint Transport Committee, then a decision will be taken which projects to take forward to develop Outline Business Cases over the next two to three years. These studies will underpin the development of Business Cases.

ARP in the future

The consequence of not having a continuation of the current ARP approach would be to revert back to a sub-optimal set of asset management approaches. This approach increases costs of project and inefficiencies in the planning and procurement but most fundamentally does allow for the planning of large assets replacements relying instead on inefficient patch and mend.

Key structures

Refurbishment of a number of the key structures on Metro will be necessary from 2022 and beyond. This includes strengthening work to bridges and the essential painting of both the QEII Bridge over the River Tyne and works to Howdon Viaduct. The Howdon Viaduct is a crucial part of the Metro infrastructure, speed restrictions imposed currently impact on journey times and any failure of the structure would leave a significant part of the network isolated or facing significantly longer journey times, via the coast into Newcastle City Centre impacting on access to employment, education and leisure connectivity. Ensuring the integrity of the tunnelled sections of the network, constructed back in the 1970's, will be key to the safe operation of the Metro.

The most pressing issue between 2020 and 2030 in the central tunnels is the continued need to undertake detailed inspections on the tunnel structures and undertake any work arising from these inspections.

Some underbridges will require reconstruction within the next 20 years. In addition, a further cyclical round of strength assessments will begin to ensure that the underbridges can continue to carry the necessary loadings. For the bridges that require strengthening, without the necessary investment, speed restrictions will eventually be imposed as the structures will be unable to withstand the loads at current line speeds. This will result in limiting the service and increasing journey times and has the potential to prevent trains from running on certain parts of the network. Major maintenance work is planned on some of the older footbridge structures on the system. Some of these older structures require urgent attention in the next phase of essential renewals, particularly those where a large amount of timber is present.

Permanent Way

While much of the Metro permanent way has been replaced during ARP phase 2, there will be track assets that have been subject to refurbishment works only, which will eventually require renewal to sustain system performance beyond 2020. These include the following asset types:

- **Switch and Crossing (timber bearers)** - The units on timber bearers have been refurbished and brought up to a good standard using new steelwork, stressing, tamping and ballast works. It is envisaged that these units will remain serviceable with normal maintenance activities for a further 10 years after refurbishment. This means that in some cases full renewal will be required from in the early and mid-2020's;
- **Plain Line (Concrete Sleepers)** - Rail renewal or ballast cleaning in some places is required beyond 2030. This equates to a future requirement for 8,000m of rail and an estimated 5,000m of ballast cleaning; and
- **Plain Line Timber sleepers** - Those with pressed baseplates have been refurbished and brought up to a good standard by stressing / tamping and ballast works. It is envisaged that this track system will remain serviceable with normal maintenance

activities for a further 15 years after refurbishment. It is therefore likely that full renewal in some places is required from 2023.

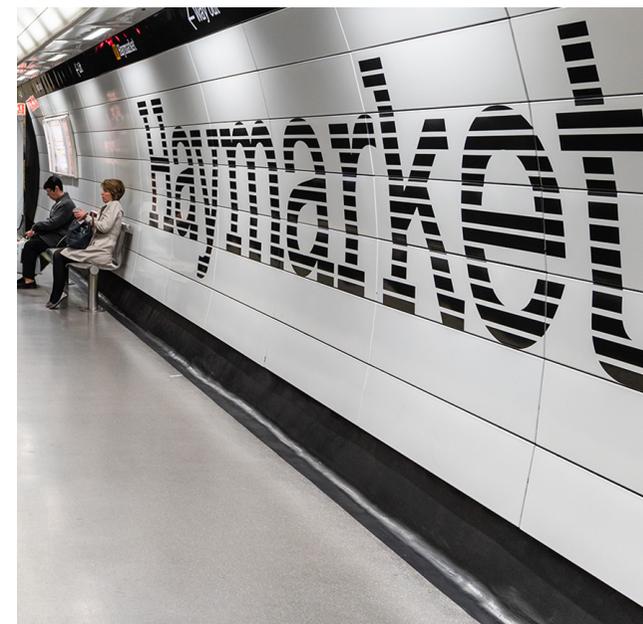
New Signalling system

A failure to invest in the signalling system will, in the short term, result in loss of assets such as sidings, as signalling assets here are cannibalised to support assets on the running line. This in itself will impact on service and Nexus will lose the ability to run some peak additional services through the central corridor [Pelaw to South Gosforth]. This position is also not sustainable and continued lack of investment will result in increased failures of the signals which will take longer to rectify impacting on reliability, increasing delays and reducing the attractiveness of Metro as a public transport option. Eventually failures of the signalling systems will result in sections of track being removed from passenger service.

To overcome these issues, a new signalling system is required from 2030, it will be operational in 2030, meaning that design work would need to commence from 2025. A main priority will be to develop the business case to replace the signalling system for the Metro network and secure funding to ensure

work can commence on replacing this critical asset by 2025.

This will be based around replacing the existing outdated signalling system by a modern solid state modular system that will result in fewer, smaller relay rooms and new trackside location cases, all of which would be connected together by a fibre network from 2030. The trackside assets such as points, track circuits and signals would then be connected onto the new system. This would bring greater reliability, reduce the risk of obsolescence, entail less maintenance and improve the monitoring of the condition of the equipment with improved failure diagnostics.



Metro Signalling

Nexus' existing signalling system was installed by Westinghouse (now Siemens) between 1979 and 1984. It is made up of 12 interlockings based on electro-mechanical relays. These Relay Rooms perform the safety interlocking of the signalling and are therefore a critical part of the signalling system. If they fail, it has a significant impact on the operational service.

Unlike modern computer-based interlockings, there are no special data preparation tools or vendor support requirements for maintaining and modifying the majority of the existing systems.

Network Rail is currently undertaking a programme of signalling system renewals which will upgrade similar relay based signalling systems installed in the 1970's and 1980's with modern computer based equipment. Industry support for supplying re serviced or new relays is now reducing, indeed during the late 1990s Westinghouse stopped all manufacturing of the Nexus based relays for mainline interlocking. This has led to cost increases from other smaller suppliers, and also difficulty sourcing supplies.

The relays have been operational for over 35 years. Based on service lives of similar relays on similar infrastructure, along with the current failure rate, efficient operation can be expected for a further 10 years, after which increasing relay failures in terms of contact or bearing failure will occur.

Installation of Relay Rooms and equipment since it was first fitted used a variety of manufactures to supply the wire to interconnect relays together. Over the past 35

years wires are now exhibiting failure in the form of wire degradation. The safety integrity of the system will become compromised unless action is taken. The only long-term solution is to completely rewire the Relay Room or equipment location housing with modern, non-degradable wire. This is an extremely expensive and lengthy procedure, causing significant disruption to operational service as the equipment is taken out of service during the rewire and test phases.



This emphasises the need to replace the system, as there are many aspects of the current system that are life expired.

Renewal of relay rooms can be on the principle of part replacement or wholesale renewal. With the unpredictability of the extent and speed of wire degradation, part replacement is not recommended as it will not eliminate concealed areas of dangerous wire degradation. The main cost of renewing a Relay Room is the availability of skilled labour and cost required to carry out the extensive running and termination of the individual wires onto the relays, fuses and terminals.

Due to the limited space in the relay rooms, significant disruption to operational service will be experienced during the renewal phases. Network Rail install small Computer Based Interlocking (CBI) in the existing Relay Rooms. These are pre- tested and require only changeover of the input and output functions on commissioning. This is only an interim solution pending wholesale replacement of the signalling with modern centralised CBIs.

The Nexus signalling system makes extensive use of copper multicore cables which are starting to degrade. With cables the degradation is only visible at the cable terminations, not internally in the cable, therefore there is a potential latent failure mode which is difficult to observe or determine without regular cable testing.

As the signalling industry moves towards CBI based signalling, the use of multicore cables is reducing, hence the manufacture and availability of these railway specific products is becoming limited and expensive.

The power supply switch gear is over 35 years old that will need replacement over the next 5-10 years. Modern power switchgear and transformers are smaller and more efficient, using electrical industry standard equipment which is readily available in the marketplace.

Battery Locomotives

The life of the battery locomotives is estimated to be 35 years. This is based more on parts obsolescence rather than wear and tear. The fragility of the battery locomotives has been highlighted during an occasion of power failure at the Depot when the battery locomotives did not have sufficient capacity to move the Metrocars to allow a service to operate.

Wagons & Rail Engineering Vehicles

The bogie flat wagons are the oldest in the fleet and are becoming corroded. Some still serve a useful purpose but others could be scrapped, after 2025 hopper wagons, rail crane wagons and low height spoil wagons will still be needed.

Passenger facilities

Many of the passenger facilities, such as lifts and escalators, which were replaced during ARP, have a 25 year design life. These assets will require a significant overhaul during the 2020's, and ultimately will need replacing beyond 2030. This will ensure that the Metro will remain accessible to all.



How do we get there

Capitalising on the benefits afforded by Metro Flow and the introduction of the new fleet Nexus will work to develop the case for and secure funding for initiatives which support the wider improvement of the service Metro offers. Nexus will look at the possibility and feasibility of changes to timetable when the new fleet and Metro Flow are fully operational.

Customer service

Standards for stations

There is a growing body of academic research surrounding how the aesthetic quality of the built environment affects community satisfaction, and how people identify with their urban surroundings. This is important, as positive identification with communities increases social cohesion and increases social interaction. Improving the rail station environment increases passenger satisfaction, increases pedestrian connectivity, and strengthens local economies. However, the viability of implementing placemaking principles within the design of stations is a contentious issue as stations can be viewed as being 'placeless' within the urban environment due to a lack of communal ownership. Despite this, stations can become assets to the community through a process

of legitimisation, whereby communities can claim and re-appropriate the station environment to promote a sense of place which aligns with the local cultural identity.

Nexus will develop a standard for all stations which can be applied to renewals, maintenance or the construction of new stations on the network. This will be informed by best practice and market research with our customers, whilst ensuring stations are easy and cost effective to maintain. Our standards will be reviewed regularly to ensure they remain aligned to our customers' expectations.



Integration with Walking and Cycling

Good cycling and walking routes to public transport hubs and interchanges can encourage more people to use public transport. For example, well-lit streets, wide pavements, appropriate parking restrictions, good signage, dedicated cycle lanes and secure cycle parking at public transport hubs can produce an environment where people feel safe and secure accessing public transport.

Nexus will seek funding to provide more smart cycle lockers at public transport interchanges, including Metro, bus and rail and undertake an audit of Park and Ride locations to identify best places to promote cycle parking

Please see Healthier North East Chapter for more information on Metro and active travel plans.

Park and Ride

Improved park and ride helps to expand the reach of Metro and allow customers living in more rural locations the opportunity to use sustainable transport for at least part of their journey. Park and ride also helps reduce congestion and pollution in City Centres and supports the implementation of a Clean Air Zone in and around the centre of Newcastle.

Nexus will work to support the development of strategic park and ride sites and develop a programme to expand, develop and modernised Metro's Park and Ride offer at appropriate locations subject to funding. For more information about Park and Ride please see Integration chapter.

Safety and Security

Gate-lines and Remote monitoring

In order to help address ticketless travel and associated anti-social behaviour and vandalism Nexus will develop plans to install gate-lines at more stations across the network. This will not only help reduce actual incidences but also help to improve perception of safety and security across the network.

Nexus has developed a prioritised list for stations to be gated based on an assessment of the business case for each – cost of installation and operation against additional revenue generated. However few if any stations cover their own costs as currently gate-lines need to have staff in attendance during operational hours. Therefore, Nexus will conduct a study into alternative solutions including remote monitoring which needs less staff to manage customer flows through gate-lines, responding to queries and opening gates when required. It also allows gate-lines to be more quickly turned on/off to respond to operations issues. Installation of gate-lines at additional stations will be subject to the identification of an appropriate operating model as well as securing grant funding for installation. The studies will be concluded during 2022 to allow business cases to be developed for future funding opportunities.

Increased frequency, increase capacity

There are major plans in place to achieve this: a new Metro fleet will be running by 2024, extra network capacity will be available by 2023 through the Metro Flow track dualling project which will give the capability to deliver a 20% increase in train frequencies, and over £350m of assets have been renewed across the network over the past eleven years to ensure that Metro is fit for the future, with a further £200m of essential renewals to come. The benefits of this large-scale capital expenditure will be felt for decades to come in terms of better air quality, reduced congestion and improved sustainable access to jobs across the region.

The pandemic has fundamentally changed the way people travel, in particular working from home. Metro previously relied heavily on the commuter market for its revenue, 34% of journeys were travelling to/from a workplace and most of these customers purchased long terms season products. The pandemic has accelerated trends for working at home and a significant proportion of commuters now intend to only travel into the office 2-3 days per week.

In contrast however the leisure market has grown, making up 42% of journeys in the latest period compared to 32% in 2019/20 and this has resulted in patronage at weekend recovering far more quickly than the weekdays.

Nexus will review the business case to move to a seven-day timetable to better support the leisure market to coincide with the implementation of the new fleet of Metro and Metro Flow.

Please see the Metro Fleet and Depot case study for more information about the benefits of it.



Investment in the Metro

The first priority for Nexus is to secure long-term revenue and capital funding to ensure the future operation of the existing Metro network and create a solid and stable platform for improvements to grow patronage, improve satisfaction, create modal shift from car, whilst supporting the wider economic recovery and development of the North East.

Renewals and maintenance

Nexus will continue to lobby government to secure a long-term funding package for ongoing maintenance and renewal of the Metro network to ensure that recent improvements in the reliability of the network are capitalised upon and improved. Nexus will develop a 10 year programme of work aimed at building on the benefits realised by the new fleet and Metro Flow, ensuring the network is reliable, well maintained, safe and secure. Reliability of the network is a crucial part of meeting customers' expectations and enabling Nexus to grow patronage and attract new customers. Nexus will investigate opportunities to use new technologies to

improve the efficiency and effectiveness of the renewals and maintenance of the network, through proactive and remote monitoring of assets and helping to ensure the safety of employees through reducing the need to carry out inspection work during hours of operation.

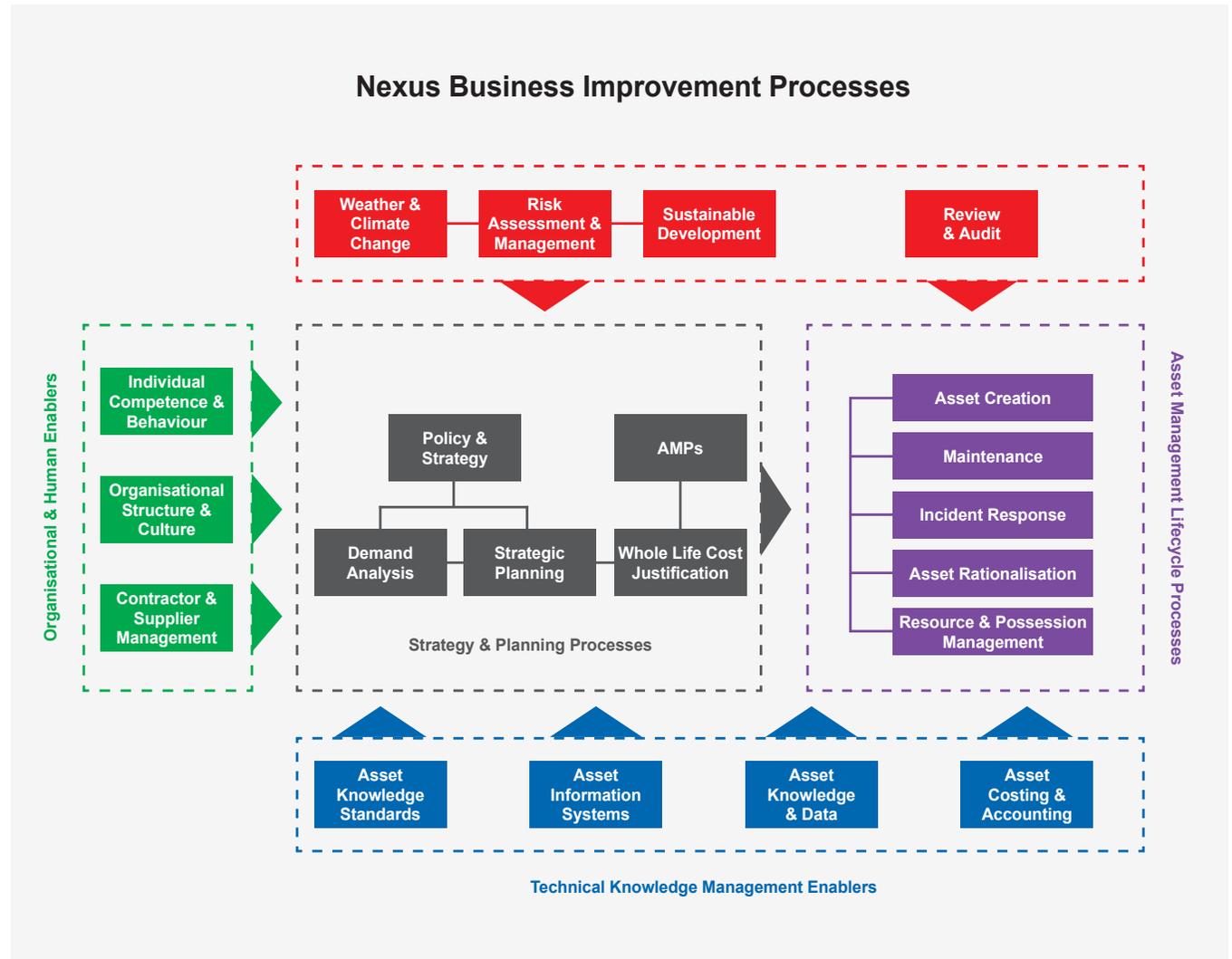


Importance of renewing assets (ARP)

Evidence based Asset Management Plans

Nexus has developed a corporate Asset Management Manual which seeks to make best use of its assets whilst identifying those that require renewing or replacing. Within the Asset Management Manual, strategies and Asset Management Plans have been developed for the Metro system, via asset category and have been recorded onto the asset management system, Maximo. The Asset Management Plans clearly identify, for each asset category, the lifecycle of the asset including maintenance regimes and replacement timescales.

Using these plans Nexus' Engineering department has undertaken assessments in each of the asset categories and has identified those areas that require renewing or replacing. These have been amalgamated, costed, and presented in a programme up to 2030 via asset category. Nexus' approach to Asset Management is set out below.



Asset condition deteriorates with time and use; Nexus' ARP has enabled some life expired assets to be replaced and renewed and ensures the maintenance of all network assets to a required standard that will allow the continued operation of the railway. However, assets that have not been renewed in this period have further aged and deteriorated and will need renewing in the coming years. Additionally, some assets replaced through ARP will require mid-life overhauls between 2020 and 2030 and in some instances again become life-expired and require replacing in this period.

This approach will address the problems identified by investing in those assets that are in poor condition or are approaching the end of their operational life, to allow Metro to operate for the next generation. The successful delivery of the ARP phase 2 is evidence that Nexus possesses both the capacity and capability to deliver this ambitious programme. Having a long term, costed programme of renewals will help underpin and sustain Metro operations.

By attracting further long-term investment for essential renewals and maintenance of the Metro infrastructure, the network will maintain its resilience, help ensure future reliability, and support the Transport Plan's aspirations for reducing congestion and encouraging more sustainable forms of transport.



Re-signalling

New Signalling system - It is accepted that a new signalling system would be required from 2030. Nexus will begin to develop an Outline Business Case in 2022 to set out in detail what the problems are, and what are the options to address the problem. Nexus needs to begin the work for this now, as experience has showed that the development of Business Cases for medium to large scale projects takes 2-3 years to develop. Design work and implementation will of the new system will take 2 years or more, so that It is assumed that a new signalling system becomes operational in 2030.

Nexus' proposals for a longer-term capital funding settlement for its Essential Renewals Programme will allow for the following to be achieved:

- Battery Locomotives – Nexus' current fleet of battery locomotives will require replacing in the early 2020s as they are approaching 40 years old.
- Wagons & Rail Engineering Vehicles – After 2025, there will be a need for hopper wagons, rail crane wagons and low height spoil wagons.

- Passenger facilities, such as lifts and escalators, which were replaced during ARP, have a 25-year design life. These assets will require a significant overhaul during the 2020's, and ultimately will need replacing beyond 2030.
- Station refurbishment – The programme for 2020 to 2030 includes the refurbishment
- of the 13 stations. 11 of these stations will be brought up to a modern-day quality standard and finish.
- The remaining stations are two heritage stations, Whitley Bay and Tynemouth. Improvements of a different nature are required here, taking the form of re-branding in a manner sympathetic to the construction of these stations.
- Key Structures – Refurbishment of a number of the key structures on Metro will be necessary from the early 2020s and beyond. This includes strengthening work to bridges and the essential painting of both the QEII Bridge over the River Tyne and works to Howdon Viaduct.

- Tunnels – Ensuring the integrity of the tunnelled sections of the network, constructed back in the 1970's, will be key to the safe operation of the Metro. The most pressing issue between 2020 and 2030 in the central tunnels is the continued need to undertake detailed inspections on the tunnel structures and undertake any work arising from these inspections.

Some underbridges will require reconstruction within the next 20 years. In addition, a further cyclical round of strength assessments will begin to ensure that the underbridges can continue to carry the necessary loadings.

Permanent Way – While much of the Metro permanent way has been replaced during ARP phase 2 (2010/11 - 2020/21), there will be track assets that have been subject to refurbishment works only, which will eventually require renewal to sustain system performance into the 2020's.

These include the following asset types:

- Switch and Crossing (timber bearers) – Requiring full renewal will be required from early 2020's;
- Plain Line (Concrete Sleepers) – Rail renewal or ballast cleaning in some places is required beyond 2030; and

- Plain Line Timber sleepers - It is envisaged that this track system will remain serviceable with normal maintenance activities for a further 15 years after refurbishment. It is therefore likely that full renewal in some places is required from 2023.

New Stations

Throughout the history of Metro new stations have been opened across the network, most recently in Simonside and Nexus are currently working with North Tyneside Council and the housing developers on a potential new station at Murton to support a significant area of housing growth.

New stations however need to be considered strategically across the network to ensure the additional journey times they create don't detract from the attractiveness of Metro's quick and reliable journey times.

In response to the extension's studies, Nexus will undertake a study to assess the feasibility of new stations on the existing network to determine which ones would be viable investments. These will then be progressed subject to securing appropriate funding.

RTI – supporting funding opportunities

Security of both capital grant and revenue grant funding streams, either devolved or direct from central government, is crucial if Metro is to continue to deliver the benefits to our region set out in this document and if the unpalatable consequences we describe of a less effective Metro system are to be avoided.

Building on these funding sources, Nexus will continue to bid to relevant national and local funding sources and work in partnership with both public and private stakeholders, including Great British Railways to progress the projects set out in our implementation plan.



7. Overcoming inequality and growing our economy

As a result of the Covid-19 pandemic, many of our region's longstanding economic challenges and inequalities have now re-emerged.

It took until 2016 for North East employment to return to 2008 levels following the last recession – the speed of this recovery must be faster, and rail and Metro will need to play a significant role. This chapter sets out how.

We believe that there is a clear opportunity to transition the number of journeys people make from other transport modes and on to rail and Metro.

By improving existing local rail services through integration with the Metro, and expanding the network further. Our first priority is to get rail and Metro on a more stable financial footing and then grow from there. This will enable rail and Metro to play a central role in alleviating inequality and growing the region's economy further.

Background

The short-term impact of COVID-19 on the North East was highly disruptive and challenging. Despite this, the region has continued to sustain increased levels of employment compared with our 2014 baseline, with continued growth of the proportion of 'better jobs' as outlined in the region's Strategic Economic Plan (SEP) – the roadmap for increasing economic growth in the North East, which this strategy is aligned to.

However, inequalities within the region have been exacerbated by the pandemic. For example, there is significant mismatches of labour supply and demand holding us back. Employers in many industries are struggling with skills shortages and younger and older people need support such as improved access to jobs and training opportunities.

It is important to understand the various inequalities and economic imbalances within our region. The delivery of an improved rail and Metro network, better connecting the region's residents, businesses and visitors can significantly help address our challenges. This following section outlines our key challenges and sets out how rail and Metro could enable us to achieve our objective of overcoming inequality and growing our economy.

North East regional challenges

GDP per head

GDP of North East LEP area in 2019 was £48.2 billion, just 3.4% of the England (excluding London) total.

In 2019 GDP per head in the North East was only about 82% of the equivalent for England (excluding London).

Productivity

Average productivity in our region is well below the output for England. North East GVA per hour in 2019 was £30.81, 85% of England's rate and 93% of that for England (excluding London).

Economic inactivity

In Apr 2020-Mar 2021, 23.5% of the working age population was economically inactive, a higher (20.9%) percentage than in England (excluding London).

Unemployment related benefit claimant count

In June 2021, just over 76,000 people were claiming unemployment related benefit. Between March 2020 and July 2021, the number of claimants in the North East LEP area increased by almost 23,000 (38%).

Low-income households

In 2019/20 over 90,000 children in the North East LEP area were living in relative low-income families. This was over a quarter (26%) of all children, a higher proportion than nationally (19%).

Jobs paid below the National Minimum Wage (NMW)

In 2020, around 36,000 jobs in the North East region (including Tees Valley) were paid below the NMW. This was 3.7% of employee jobs, the highest in any English region. Greater local control and accountability of local services could allow fares to be set at a level relevant to the local economy.

Skills gap

In 2020, over 38% of working age people in the North East LEP area had no or low (NVQ1 / NVQ2) qualifications, compared to less than 34% in England (excluding London). The North East also had a lower percentage qualified to degree level and above (NVQ4+).

North East sectoral strengths

The North East has key economic assets, including:

- Offshore energy and subsea technologies.
- World leading clinical research that supports a growing health and life sciences sector.
- A vibrant digital community with a combination of start-up, high growth and established businesses across a wide range of specialisms.
- Capabilities across a range of enabling services including education, financial, professional, and business services, transport and logistics, and construction.
- Significant employment in the public sector across both local services and central government back office and shared services.
- A strong cultural, heritage and sports sector that supports our growing visitor economy.

North East economic geography

The North East is a place like no other. Its geography is highly complex and polycentric. This polycentricity is both in terms of the economy and in patterns of settlement and development, which provides challenges and opportunities around sustainable and public transport options. We have a population of just under 2 million people.

This mix of urban, suburban, and rural landscapes results in complex demands for travel and is reflected in our varied transport challenges, from rural isolation in our remoter areas to poor air quality and congestion in parts of our cities.

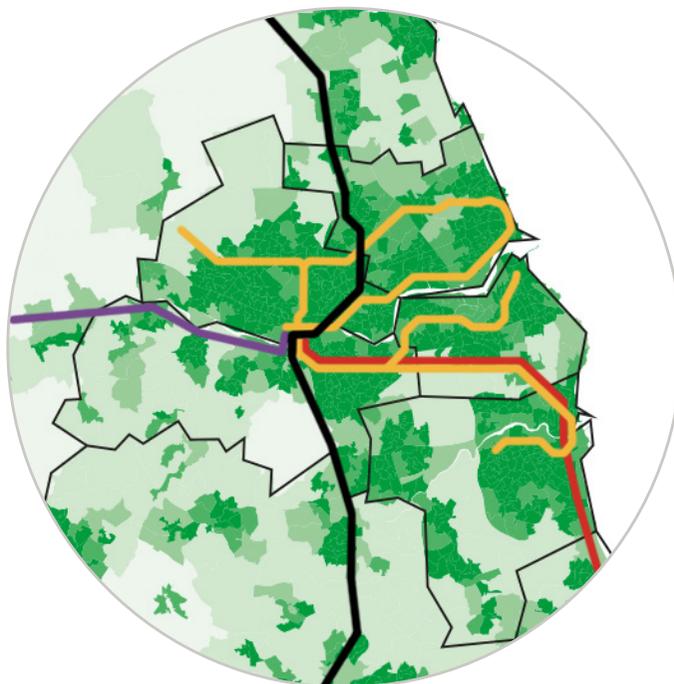
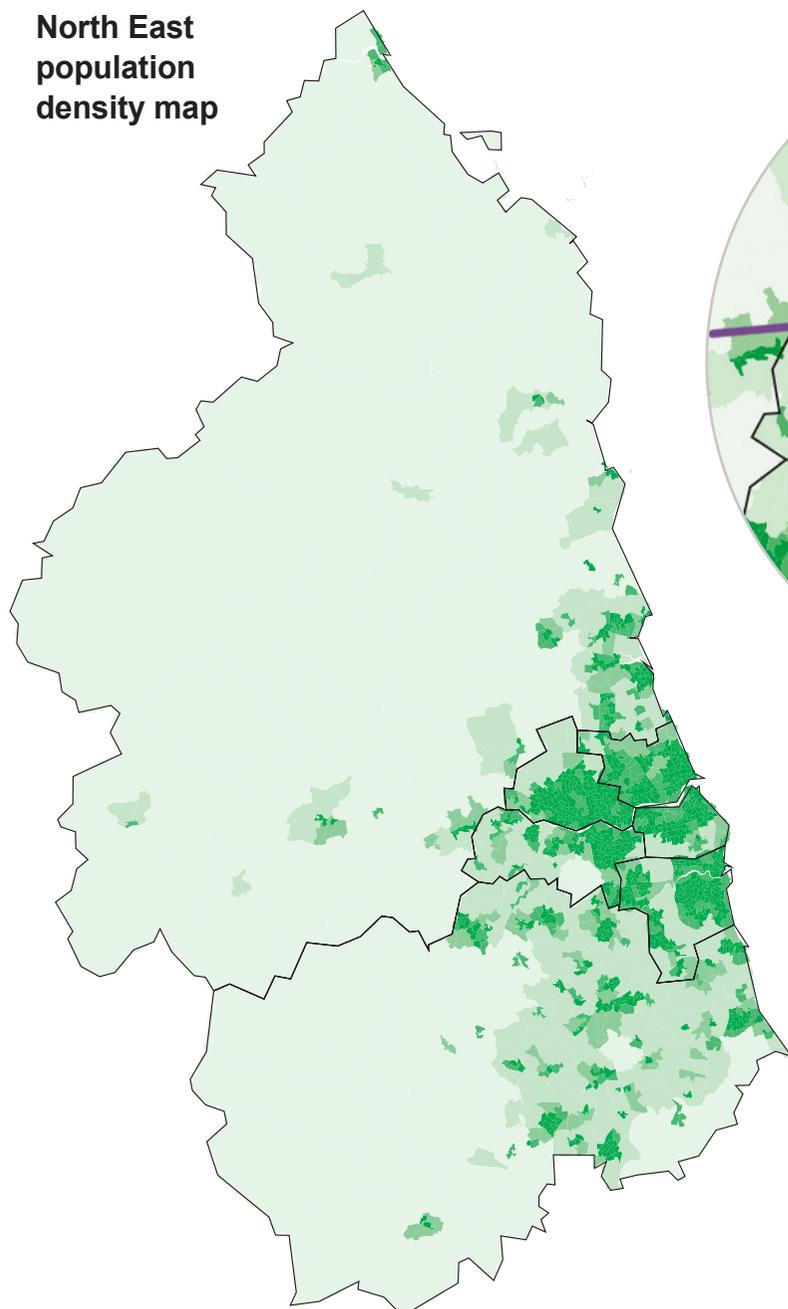
Professional services are focused on the main urban centres and at out-of-town commercial developments, with advanced manufacturing located at business parks around the region.

Typically, higher volumes of Metro and Local rail usage are closely correlated with areas of high employment density.

For example, in Tyne and Wear, most of the highest density areas for workers are closely connected with Metro and Local rail services.

However, there are some key exceptions with some major employment sites such as Cobalt Business Park in North Tyneside not having rail access.

North East population density map



Map key:

- 0.0 to 0.9 people per hectare
- 1.0 to 4.9 people per hectare
- 5.0 to 9.9 people per hectare
- 10.0 to 19.9 people per hectare
- 20.0 or more
- Tyne and Wear Metro
- East Coast Main Line
- Durham Coast Line
- Tyne Valley Line

Several of our key employment and retail sites sit in isolation of our local rail and Metro networks such as Cobalt, Silverlink, Team Valley and the International Advanced Manufacturing Park (IAMP).

The expansion of Metro and Local Rail across the North East, will offer connections to a wide range of destinations, unlocking new employment and social opportunities, and assisting in reducing congestion by attracting more people to rail from road.

Deprivation in the region

Inequalities in the provision of transport services are strongly linked with where people live, and the associated differences in access to employment, healthcare, education, and local shops. Deprivation is concentrated in the urban centres of Newcastle and Gateshead (and along the banks of the River Tyne and River Wear), Sunderland and concentrations in larger towns.

Rail connectivity is of a high quality within the urban Tyne and Wear core, mainly thanks to the well-developed Metro system. However, connectivity remains a challenge to more remote rural areas and deprived areas in the urban periphery.

It is clear that there are large areas of the region that do not benefit from train services at all because there are no local routes or stations, or which are hampered by the limitations of existing services. This hinders wider opportunities for businesses and residents alike.

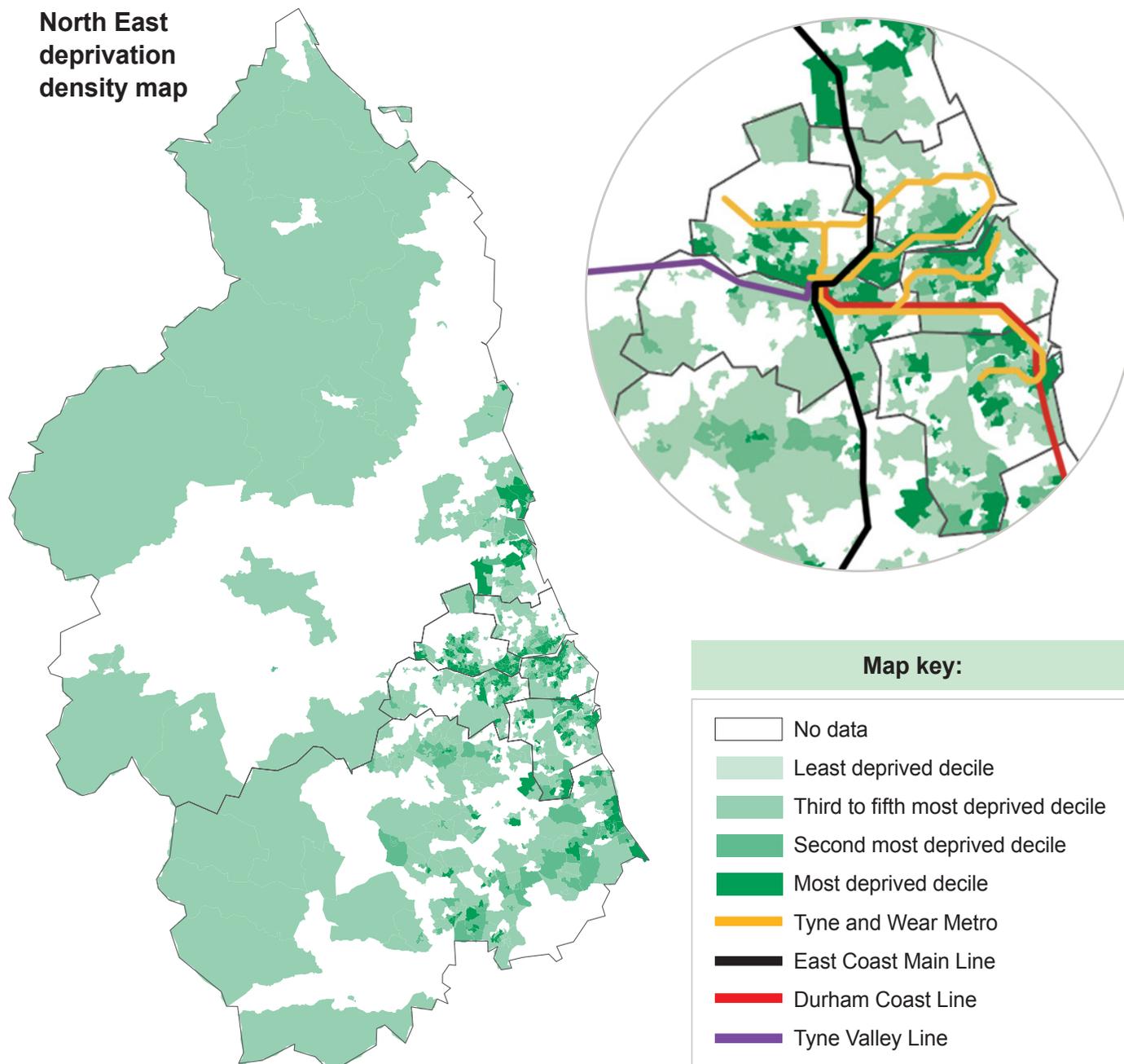
This does not just occur in rural areas of the region. For example in Tyne and Wear there are significant communities that are unserved by rail, for example Washington and West Newcastle. This leads to over-reliance on the congested road network and economic isolation for people without a car.

Despite the North East having some of the most isolated rural communities in the country, some rural areas in west and north Northumberland such as Haltwhistle and Alnmouth are better served by rail than other public transport modes such as buses due to being served by the Tyne Valley and East Coast Main Line.

However, we acknowledge that for many people living in our rural communities, using a private car for travel is the only viable option.

Pockets of health and income inequalities are seen across the North East and as the map shows, there are areas of deprivation across both our urban and rural areas. Improving rail connectivity can help alleviate deprivation.

North East deprivation density map



Where are we now (2022)?

Rail as an economic enabler and inequality reducer

Connectivity between people and jobs, businesses and workers, and businesses to suppliers and customers is at the heart of economic performance. Transport enables people to be in employment who would not otherwise be.

It also enables trade between companies and between companies and consumers where there would otherwise not occur if there was no Rail or Metro connection.

There is a proven evidence base of how improvements in connectivity contribute to increased economic performance.

Rail enables people to access a wider range of more productive, higher value, jobs (and training opportunities), bringing businesses closer together, and addressing structural employment and deprivation issues in specific areas, Rail and Metro is crucial in growing the region's economy and connecting people to opportunities.

There is also a relationship between transport and land use as together this can lead to the densification of economic activity and growth.

How does rail and Metro support the North East economy?

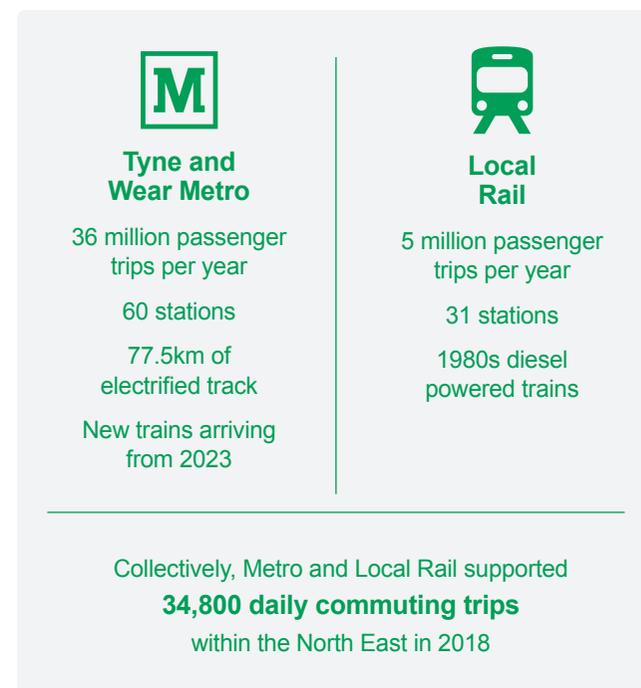
Metro and rail impacts on the economy in many and inter-related ways. Firstly, it ensures excellent access to jobs, but they also ensure a better-functioning economy enhancing our region's inward investment appeal and leading to further growth.

Every journey on our Metro and local rail network brings an £8.50 direct benefit to our economy.

Over the past 40 years, the rail network in the North East has developed in two very different ways.

Much of the local rail network in Tyne and Wear was converted into the Metro system. It has continued its role at the heart of the local economy by transporting tens of thousands of people by rail to work, education and other activities each day.

The remainder of the local rail network has continued through decades of closures and cutbacks, maintaining some connectivity but characterised by poor-quality trains and low service frequencies.



Where are we now – Tyne and Wear Metro

Metro plays a principal part in enabling the economy of Tyne and Wear to function and grow.

For example, Metro plays a strong role in supporting access to city centre jobs in particular in Newcastle and Sunderland, particularly from Jesmond and Gosforth, North Tyneside and south of the river from Gateshead, Pelaw, Heworth, Hebburn, Jarrow and South Shields.

As well as connecting key employment centres, Metro provides access to higher education sites and key leisure facilities and tourism assets across Tyne and Wear.

Metro also plays a key role in supporting the region's economy through enabling multi modal journeys. The system was specifically designed and built to complement and enhance the region's bus network, with five seamless interchanges sited on key transport corridors to connect local bus service to fast train routes into the urban core. Other stations are deliberately sited on bus corridors.

The North East has over 4,300 park and ride spaces made available across 30 Metro stations. These sites play an important role in enhancing our economy by improving the efficiency of our transport network, helping to relieve congestion, and improving air quality.

In late 2021, Nexus introduced free parking at four park and ride sites on the network until the end of January 2022 which is aimed at stimulating further demand post lockdown.

25% of homes in Tyne and Wear are within walking distance of a Metro station.

23 of the 60 Metro stations on the network are located in the bottom 20% of nationally defined areas of deprivation.

Since 2010, the entire Metro system has been undergoing a significant upgrade through the £350M 'Metro: All Change' modernisation programme. Over an 11-year timeframe, stations have been modernised, the existing Metrocars refurbished, and miles of new tracks and cables installed. This major scheme of investment has ensured our region has a reliable Metro system for many decades to come. However, there is more investment needed on a sustained basis to ensure the system is the best it can be for our residents, businesses and visitors.

However, prior to the pandemic, patronage was starting to decline from around 40 million passengers in 2015/16 to 34 million in 2019/20. This can partly be attributed to the aging fleet.

As of November 2021, Metro has recovered to around 80% of pre-Covid patronage levels.

The new Metro fleet arriving in 2023 will help address the issues of reliability and availability, providing a more appealing service through increased frequencies and a better on-board travelling experience. The new fleet will also improve environmental performance on the network.

From 2023 – The new Metro trains being rolled out will be 15 times more reliable than the current fleet.

Where are we now – local rail

In contrast to the Metro, the region's local rail network has not had the same focused investment, is not as well aligned to the local economy and previously has lacked a clear plan for its long-term future. Despite these drawbacks, the region's local rail network has strong foundations on which to build on.

An example on none alignment with local priorities is that the earliest and latest arrivals and departures of local rail services are not conducive with modern-day life both for early morning work requirements and late-evening social requirements. The night economy is a key part of the North East economic make-up.

The Durham Coast line is another vital part of the North East's rail network. It runs between Newcastle in the north and Middlesbrough in the south via Sunderland and Hartlepool. It forms a second north-south rail link running parallel to the ECML.

Despite serving some of the largest centres of population in the North East, parts of the route have suffered from under-investment over the years. It is also at capacity, holding back the future growth of services.

This combined with low line speeds, a circuitous route in places and tight curvature mean that the end-to-end journey time from Newcastle to Middlesbrough is around 76 minutes. This is considerably slower than travelling by car which takes 50 around minutes.

Another central element of the region's national rail network is the Tyne Valley line which runs across the north of England between Newcastle and Carlisle. The line forms a major rail link to the North Pennines Area of Natural Beauty, Northumberland National Park and Hadrian's Wall World Heritage Site.

It serves a diverse variety of markets and communities as it passes through inner city areas, a major out-of-town shopping centre, suburbia, semi-rural commuter belt, market towns and highly rural villages. It is estimated that the population within a 30-minute travelling time of a station on the line is in excess of 1.5 million.

The route also forms an important diversionary facility for Anglo-Scottish long distance high speed and freight trains when either the ECML or the WCML is unavailable north of Newcastle or Carlisle due to incident or planned engineering work.

On the East Coast Main Line north of Newcastle, Northern runs an hourly Newcastle-Morpeth local rail service, which is extended to Chathill during the peak periods. There are stations at Manors, Cramlington, Morpeth, Pegswood, Widdrington, Acklington, Alnmouth, Chathill and Berwick-upon-Tweed. Due to the lack of capacity on the line, there is conflict between desire for more frequent station stops and line capacity for long-distance high-speed (LDHS) services. A further example of this would be on the ECML south of Newcastle at Chester-Le-Street station. This is why we must ensure there is sufficient capacity for local, regional, national rail, as well as freight.

There are studies beginning to consider Berwick as a junction station, potentially extending to the West Coast Mainline through the extension of Borders Railway down to Carlisle. This would create connections into the communities and economy along the line, enabling an increase in leisure, tourism, business activity as well as access to education, alongside active travel opportunities.

Where are we now – national rail

Rail underperforms in our area, whereas it could be a greater driver of economic growth. This is because North East rail infrastructure does not have enough capacity for today's growth in traffic, let alone for the future.

For example, on the East Coast Main Line, we rely on just two tracks, one in each direction for all of our rail services to London, Scotland and the Midlands, as well as to Leeds and Manchester.

Creating additional capacity will enable our economy to grow further, helping to create and sustain more high-quality jobs and closing a long-standing economic gap with other regions.

The ECML is vital to our economy. The line currently combines long-distance, regional, local and freight traffic on the same two tracks.

As of October 2021, there are 6 passenger and 2 freight train paths per hour. Based on Network Rail's analysis this is at the limits of its capacity. In the coming years there are too many train paths committed and unpalatable trade-offs may be necessary until the infrastructure is upgraded.

Slow-moving freight trains being used on the line, whilst vital to our economy, they prevent high-speed passenger trains from reaching maximum speeds of 125mph.

As well as capacity constraints, the line also suffers from reliability and resilience issues. The section of the ECML between Northallerton and Newcastle is particularly prone to suffering major incidents that cause the service to stop for long periods of time often associated with the relative under-investment in the route. There is also no feasible diversionary route with sufficient capacity. A lengthy routing exists between Newcastle and Northallerton via the Durham Coast and Northallerton–Eaglescliffe line, however there is insufficient capacity, particularly on the Durham Coast and they are not fully electrified.

Frequent issues on the ECML most-often seen in major overhead line dewirement events but can also be associated with other issues such as signal and points failures.

North of Newcastle the ECML in our region extends for just under 70 miles to the Scottish Border, three miles north of Berwick-upon-Tweed station.

The ECML is the busiest cross-border route between England and Scotland by rail and has seen passenger growth of 40% since 2008/09.

There are stations at Manors, Cramlington, Morpeth, Pegswood, Widdrington, Acklington, Alnmouth, Chathill and Berwick-upon-Tweed. However, only Morpeth, Alnmouth and Berwick are of sufficient length to accommodate long-distance high-speed trains, and these stations are served by infrequent calls. The remainder are served only by infrequent local stopping services.

Journey times between Newcastle and Edinburgh are currently constrained by the formation of the network on this section of the route. The section has a large number of tight curves which restricts the maximum speed of the line and causes services to have a lower average speed than the rest of the ECML. At locations such as Morpeth the speed restrictions due to curves are as low as 50mph.

In November 2021, the Union Connectivity Review (UCR) final report highlighted that there is a need for more capacity and faster journey times between England and Scotland by rail on the East Coast Main Line north of Newcastle.

However, it did not recommend any new investment, rather an assessment is undertaken.

North East political and business leaders have made it clear that the ECML needs urgent investment, not more assessments.

As well as the constraints highlighted above the capacity at both Sunderland and Newcastle stations are holding back future expansion of services. Neither station can accommodate any additional services without significant works to improve their platform capacity and in Sunderland's case the line capacity on the approaches also.

Where are we now – rail freight

Freight services are less regular and visible than passenger services but are equally important in contributing towards a strong economy and a sustainable environment.

The region's current rail freight market is subdued having undergone structural change due to changes in heavy industry and the decline of coal.

Although coal traffic in the North East has reduced in recent years, there are still residual operations that impact on the constrained East Coast Main Line (ECML) route between Northallerton and Newcastle.

Currently there is a rapidly changing situation with rail freight. HGV driver shortages which forced government in 2021 to reconsider training to tackle the shortfall furthermore, fuel price increases and other factors such as climate targets are changing the outlook for intermodal railfreight. As part of the future planning of rail there needs to be consideration of rail freight growth when deciding on train paths.

The ECML through the region is also used by 12 freight trains in each day. However, the potential for new and existing freight paths on the ECML is increasingly constrained without extra capacity and investment.

Strong growth is forecast in the intermodal market via domestic and international container services. Biomass has in part replaced imported coal flows in the North East. These services occupy capacity on the Durham Coast Line and also create timetabling issues around Newcastle Central station either with services that have originated at the Port of Blyth and are heading south or trains from the Port of Tyne heading to Lynemouth Power Station.

There is also regular freight operation on the Tyne Valley line, typically linking the west of Scotland with east and north east England.

North of Newcastle on the ECML and into Scotland, freight flows mostly comprise a mix of container traffic, cement and nuclear cargos. In a typical weekday there are 25 freight train paths per day in each direction on the ECML at Alnmouth in Northumberland. It should be noted that the number of services operating can fluctuate at short notice subject to the demands of customers.

In 2015, the Port of Sunderland reinstated its rail connection to the Durham Coast Line, meaning that other than Berwick, all ports in the region are rail connected (Blyth, Seaham, Sunderland, and the Port of Tyne).

Unlike other parts of the United Kingdom, the north-east lacks a Strategic Rail Freight Interchange (SRFI) where goods can easily be transferred between road and rail.

In 2019, the North East Chamber of Commerce undertook a series of interviews and roundtable events with professionals involved in the region's transport sector and local business who trade internationally.

These interviews and events have informed the findings and recommendations set out in this report, in particular identifying the key transport interventions required and how those interventions will help to encourage international trade and grow the North East's economy.

The UK government's Union Connectivity Review (UCR) final report recommended in late 2021 that UK-wide a strategic transport networks should be created known as UKNET. This could guide future investment and policy decisions. The North East is included in UKNET via the multimodal East Coast and North Channel corridors. These corridors include Newcastle International Airport but exclude some of our major sea ports. It is our view that UKNET should be extended to include rail access to North East Ports to enable them to grow and develop supporting the wider UK economy.

The key issues identified in our interviews with businesses and port operators centred around the need for more reliable rail freight access and the need to make the North East a more attractive place to ship goods to/from.

As well as this, more capacity for freight on the East Coast Main Line was identified as a way of helping to encourage international trade and grow the North East's economy.

Where do we want to be?

Metro and local rail improvement, integration and expansion

There is a need to improve and expand our existing Metro and local rail services to both encourage further use and improve customer experience.

We need to consider the impacts of changing travel patterns following the Covid-19 pandemic and work towards a greater integration of public transport for the benefit of our communities.

We want to introduce additional services and expanding the networks to enable more people access to Metro and local rail services which will enable us to overcome inequality and grow our economy.

These aspects are dealt in more detail within chapters 11 'Appealing sustainable choices' and chapter 12 'Integration'.

Transport North East and Nexus are already working with partners to progress a variety of schemes such as restoring passenger services on the Northumberland Line (being led by Northumberland County council) and removing constraints on the Metro network through the Metro Flow project.

Looking to the future, this strategy has utilised the North East Transport Plan pipeline and Nexus' capital pipeline to identify schemes that will help us to achieve our shared objectives.

We want to create a unified, integrated public transport network where there is seamless travel between different modes of transport including active travel.

The first steps towards this for rail and Metro is to integrate and expand their reach into more communities.

We want to integrate and expand the reach of Metro and local rail into more communities, benefiting more people's lives across the region.

Integration of the rail and Metro networks and improving their connections with the wider public transport network and active travel modes will provide greater access to opportunities for people, communities and businesses, alleviating inequality and growing the region's economy.

With geographic expansion of the network, the benefits will be distributed across a wider cross-section of the North East's residential and business populations. The case for improvement and expansion is simple: the more people who travel, the greater the benefits to the North East.

Section 11 'Appealing sustainable choices' outlines how we will consider 'fares and ticketing' policies to consider whether they could provide better value for money and be easier to use.

The tickets options need to be made easier for passengers with simpler fare structures. Tickets should be provided and purchased in 'smarter' ways across the whole public transport network. This could help to increase use of our rail networks by making best use of new technological platforms.

Accessibility to the network is a key issue. Expanding Metro and Local Rail to more communities will enable the region's economy to grow further and reduce inequality by providing high-quality public transport links.

We have an enormous potential to connect more residents to opportunities across the region through the development of many of our under-used or disused railway assets and alignments.

Network extensions and service improvements could alleviate road congestion, create new economic opportunities and provide sustainable access for many more communities.

The Leamside Line is one example of where we want to restore Metro and rail services to communities, many of which are in areas of high deprivation, providing new and more reliable connections. There is potential to include a number of new / reinstated stations along the route including a new East Gateshead Station to serve the future Gateshead Quays development, which also links to our longer-term Leamside Line aspirations.

The expansion of Metro and local rail across the North East, integrated within the conurbation's spatial strategy and future land-use planning, could:

- Increase inward investment by improving access to labour, suppliers, and consumers.
- Help more people get to work and access services each day.
- Make the key economic centres easier to reach and reduce congestion.
- Bring existing businesses closer together, boosting productivity, support regeneration and redevelopment around stations and in the city centre.
- Encourage more people to live and work in the North East, improving quality of life.

The following pages contain information on potential network extensions.

South of Tyne & Wearside Loop

Washington's population (67,000) and central position on both the Newcastle-Durham and Newcastle-Sunderland corridors have meant local aspirations to bring the town back onto the local rail and Metro networks have been evident since the early days of Metro operation.

There is potential to deliver a circular Metro service covering South Tyneside, Washington and Sunderland, by piecing together several separate disused corridors. At the northern end, the Leamside Line alignment could link with the South Shields route, and/or a new spur with the existing Durham Coast Line. To the south, the existing Metro alignment from South Hylton could extend westwards along the disused route towards Penshaw, before also connecting with the Leamside Line via the Victoria Viaduct.

In combination, these schemes would enable a significant number of new journey opportunities across the Sunderland and South Tyneside areas, creating a second Metro corridor connecting Wearside with Tyneside which would deliver additional network capacity and operational flexibilities.

The Leamside Line

Restoring the Leamside Line in full is one of our region's key priorities. In doing so, this alignment could provide several benefits to our communities at various scales. In 2017, Network Rail identified reinstatement of the Leamside Line has "potential to open up access to suburban rail services for up to 1 million residents in County Durham and Tyne and Wear, connecting them to jobs, commerce and the wider transport network".

Reinstating these local services would help deliver the North East's climate emergency action plans by providing attractive alternatives to car use.

The alignment runs close to several North East existing and planned employment centres which provide upwards of 25,000 direct jobs plus thousands more indirectly through supply chains. When developing these locations, accessibility to the local highway network was considered an asset but as they've become more established and employment levels grew, local roads have suffered from increasing congestion.

A study is currently underway to produce an 'Umbrella Strategic Outline Business Case' bringing together these various local, regional and national rail schemes which have an interest in operating services along a reopened Leamside Line corridor.

Ferryhill and Stillington

Following a successful Restoring your Railways bid, a Strategic Outline Business case has been produced, setting out the case to reintroduce passenger services along the Stillington Line (currently freight only) to a new station at Ferryhill. This will provide improved connectivity between south Durham and Teesside.

The re-opening of the Stillington Line to passenger services and a new station at Ferryhill, and potentially Sedgefield, offers the opportunity to begin the transformation of the area. It currently suffers from multiple adverse social and economic outcomes with a growing culture of car dependency (for those who can afford one) leading to adverse environmental impacts. This project seeks to enhance connectivity to/from the area to begin the process of driving change alongside complementary investment.

Cobalt-Silverlink

Cobalt, Silverlink and the Tyne Tunnel Trading Estate are major growth engines of the local economy, hosting around 20,000 jobs and extensive retail facilities, but they are poorly located in relation to existing rail-based links.

Despite being neatly positioned between the northern and southern sections of the Metro loop in North Tyneside they are not close to any existing stations.

The Cobalt - Silverlink connection would create wider economic benefits for the region connect employment sites, retail and housing together whilst providing a convenient interchange at Northumberland Park. The development is safeguarded in the Local Plan and supported in the North Tyneside Transport Strategy's investment programme.

We are exploring an opportunity to deliver Metro services directly to these key employment areas by re-use of an old alignment previously used to transport coal to the River Tyne. By linking into the existing Metro network, direct services could be introduced as part of an 'Inner Loop' service between Cobalt-Silverlink and Newcastle upon Tyne, North Tyneside and Gateshead.

Consett connectivity

A further successful restoring your railways bid had led to a study on how to improve rail connectivity of Consett to the Tyne and Wear metropolitan area.

West Newcastle & West Gateshead

The A1(M) between Durham, Chester-le-Street and Newcastle experiences high levels of traffic congestion, the Team Valley Trading Estate is one of the largest out of town employment locations in the North, its commuting dominated by single occupancy car journeys, whilst some of our communities living in West Newcastle & West Gateshead are amongst those in the highest areas of deprivation. Restoring local rail services to these areas is seen to be a vital step for addressing all these issues.

Our proposals would reintroduce the Bensham Curve to enable local passenger services between Newcastle/Gateshead, Team Valley and Chester-le-Street, with options for connections to/ from Metrocentre (and beyond).

This would provide many of our communities in West Newcastle and Gateshead with improved access to the local rail network, enhance existing local services at Chester-le-Street and provide sustainable alternatives for local journeys on the A1(M) corridor.

East Coast Main Line-Newcastle International Airport

Newcastle International Airport (NIA) is a significantly important strategic transport asset for the region. Providing quality, sustainable transport links are integral to its future economic success, and that of the entire North East, as is the expansion of its catchment.

Our Metro provides a direct link to Newcastle (23 mins) and Sunderland (55 mins).

Enhancements to Metro services and potentially a direct heavy rail link from the ECML will form the key planks of this study.

NIA hosts around 3,450 jobs directly across its site, serving 5.4M passengers in 2018. By 2030, around 8.7M passenger trips per year are forecast, with an estimated regional impact of £1.3Bn per year. Mode share for Metro (2017 data) was only 12% for passengers and 4% for staff which indicates potential for further sustainability gains in response to better transport services - the NIA Masterplan 2035 has set targets of 30% passengers and 25% staff travelling sustainably by 2035.

Northumberland and North Tyneside connectivity

There are currently limited local services on the ECML linking Northumberland towns and villages to Newcastle.

Currently, residents of Pegswood, Widdrington, Acklington and Chathill have a choice of just one morning commuter train and one evening return train. This is wholly inadequate and does not reflect the needs of part time workers or those who have variable finish times.

However, in the coming years improving Northumberland rail connectivity is a priority. As well as this, there are plans to reopen new stations such as the proposal is to construct a new station to serve the village of Belford and the surrounding catchment area of north Northumberland.

This will greatly improve peoples' ability to use the train to get to work, education and leisure opportunities.

Taken together with the project to bring rail services back to the Northumberland Line, rail connectivity in Northumberland will be transformed.

Similarly there is currently no direct connectivity to areas within North Tyneside to the ECML. Possible future access will be explored as part of further study work required on ECML North of Newcastle.

Regional and national rail

We want to see a step-change in rail connectivity to regional and national economic centres to maintain and grow our economic competitiveness.

We need to release much-needed capacity on the ECML for additional freight and passenger services and to enable hourly calls at Chester-Lee-Street

We also require capacity improvement to Newcastle and Sunderland stations and associated track works on the approaches. There is a further ambition to link Sunderland directly to the ECML, by utilising the southern section of the Leamside line to enable better connectivity to other northern cities.

Investment in the Durham Coast Line must not be overlooked. The route links some of the largest centres of population in the North East, including Sunderland with plans to double the resident population of the city centre it will become an increasingly well-used transport hub. Additional capacity is also much needed at Hartlepool station to meet demand growth. Parts of the route have suffered from under-investment over

the years, end to end rail journey times from Newcastle to Middlesbrough are considerably slower than travelling by car. The ambition is for a more frequent service for all stops along the line as well as the semi fast regional service'

Rail freight

Making sure that freight can travel sustainably by rail is crucial.

The North East needs to develop an additional freight routing option through the region, providing additional paths and capacity away from the congested ECML.

The opportunities for freight to have more consistency in a similar way to rail and Metro needs to be explored whilst not diminishing efforts to provide a faster service for passengers along those routes.



How do we get there

Metro and local rail

We must invest in Metro and local rail to extend and improve the network.

We will also seek to build new stations on the existing networks where demand, funding and operational integrity allow.

We will continue working with partners to explore various corridors to restore railways and reconnect some of these disconnected communities back into the railway network.

We have a recent track record of this. In recent years, the region worked together to open a new local rail station in Horden, County Durham.

Transport North East, Nexus, North East Councils and the rail industry are already working together progressing schemes for delivery such as restoring passenger services on the Northumberland Line and removing constraints on the Metro network (Metro Flow project).

Although the government has decided not to accept many of our bids to the “Restoring Your Railways Fund” in relation to the restoration local heavy rail passenger services, we believe that there is a significant opportunity to improve the connectivity and social and economic outcomes for communities in the North East.

We therefore propose to commission studies through our own budgetary provision in the coming years.

Regional and national rail

Work is underway to examine capacity increases on the East Coast Main Line.

Whilst it is disappointing that the Integrated Rail Plan (IRP) effectively rules out government national investment in the Leamside Line as a means of adding capacity to the ECML, the strategic case remains strong for the region to develop a business case for the route to be used for Metro and local rail services. We will ensure that our work to progress the reopening of the Leamside Line for Metro and local passenger services allows, where possible, for its future use by **long-distance** freight and **passenger** services.

The North East Joint Transport Committee will also continue to work with local, regional and national stakeholders to provide strong evidence (through business case development) of the need to significantly invest in rail connectivity within and between the North East and the other main economic and social hubs across the north and the rest of the UK.

Rail Freight

We will need to ensure a fair allocation of network capacity and delivering additional capacity where required, including investigating whether facilities for transfer of goods between road and rail are feasible in the region.

We will need additional capacity on the ECML in our region to grow the number of both freight and passenger train paths.

A key element of this is providing W12 gauge clearance where possible to the region’s rail network to enable all existing and future freight to use it.

We do not accept the government's Integrated Rail Plan (IRP) analysis that only 7 or 8 paths are required on the ECML in our region. This would meet the short-term need but does not allow for any future growth in services – passenger or freight – and it does not improve the resilience of the route. **We will therefore continue to make the case to the government for future investment.** We will also ensure that our work to progress the reopening of the Leamside Line for Metro and local passenger services allows, where possible, **for its future use by long-distance freight** and passenger services.

Reopening the Leamside Line and assessing the feasibility of a Strategic Rail Freight Interchange for the region will also enable this.

Through delivery of the NERMS we will reduce inequality and stimulate economic growth by:

- Extending the reach of local rail and Metro to serve more communities by upgrading the
- Existing network and services, and through expansion and adding new stations.
- Investing in long distance transport infrastructure increasing the capacity and resilience of the East Coast Main Line and Durham Coast Line to improve the regions connectivity.
- Making sure that freight can travel sustainably by rail and ensuring a fair allocation of network capacity and delivering additional capacity where required.

Description of project

In 2018, Network Rail produced strategic advice on the northeast rail network. This identified that current constraints on the Durham Coast are restricting future aspirations for improved connectivity both within the region (Metro Expansion), between the region and Tees Valley (half hourly local rail service) and also longer distance connectivity (York, Leeds, Manchester, London).

One of the major constraints is Sunderland (underground) Station. Uplifted infrastructure is key to improving connectivity and goes hand in hand with the transformation of Sunderland Station to provide a modern facility that is an appropriate gateway to the City and to the region.

The station project will be delivered in three phases and the first part of the project, a dynamic new entrance to the South side of the station will commence construction in early 2022. The new entrance features a large glass wrap around design, and will include a new ticket office and reception, public toilets, retail space and cafes, comfortable waiting areas, as well as a new mezzanine level that will have office space reserved for railway industry staff. It is the first part of a development programme that includes plans for the northern entrance of the station to be reimaged and platform-level works undertaken to increase the capacity of the station, with four tracks and four platforms to unlock future connectivity and separate Metro services from mainline services.

As well as Sunderland Station and its approaches, constraint were also identified at the stations at Newcastle Central, Hartlepool and Middlesbrough (all of which are progressing under separate workstreams).

Innovative solutions implemented

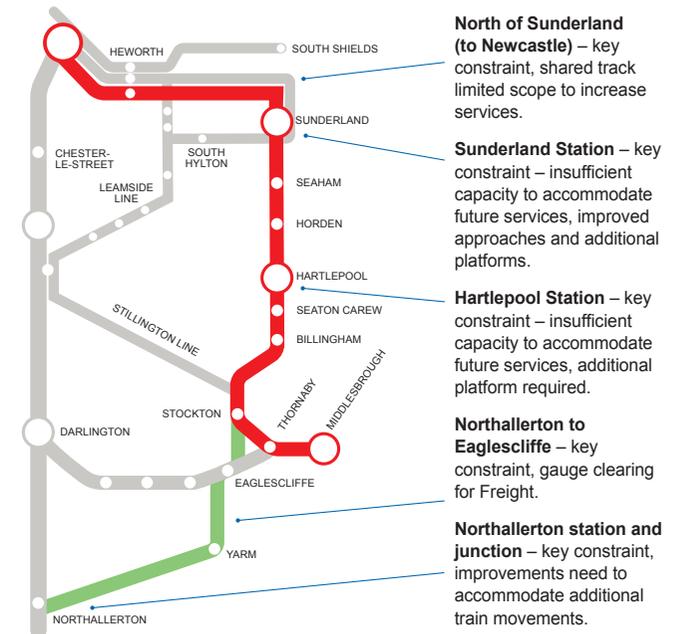
Working with Network Rail and Tees Valley, Sunderland CC and Transport North East are seeking a line of route approach to delivering the full suite of interventions that will enable improved connectivity for Metro, Local rail and Regional and National rail.

How does the project help meet our objectives?



This line of route approach seeks to unlock future connectivity which will drive increased rail and metro use linking more residents via low carbon transport to economic and social opportunities within the North East and the wider North.

2035 proposals and challenges to overcome



Description of project

The Leamside line has the potential to play a part in the relief of congestion on the ECML, improve local connectivity (through the expansion of Metro to create the South of Tyne and Wearside loop), to reconnect communities to the rail network and to aid future growth in Freight.

Innovative solutions implemented

A number of studies are/ have been looked at along the ECML/Leamside corridor over recent years, work to coordinate these various studies and assimilate them into a single coherent plan which maximises the benefits to the North East, known as the umbrella strategic outline business case (USOBC), is nearing completion. The publication of the government's Integrated Rail Plan on the 18th November 2021 has necessitated a rethink on the approach both to delivering much needed capacity on the ECML and also the approach to take to reopen the Leamside Line.

The emerging SOBC therefore show four elements to be progressed incrementally over a period of time. These being:

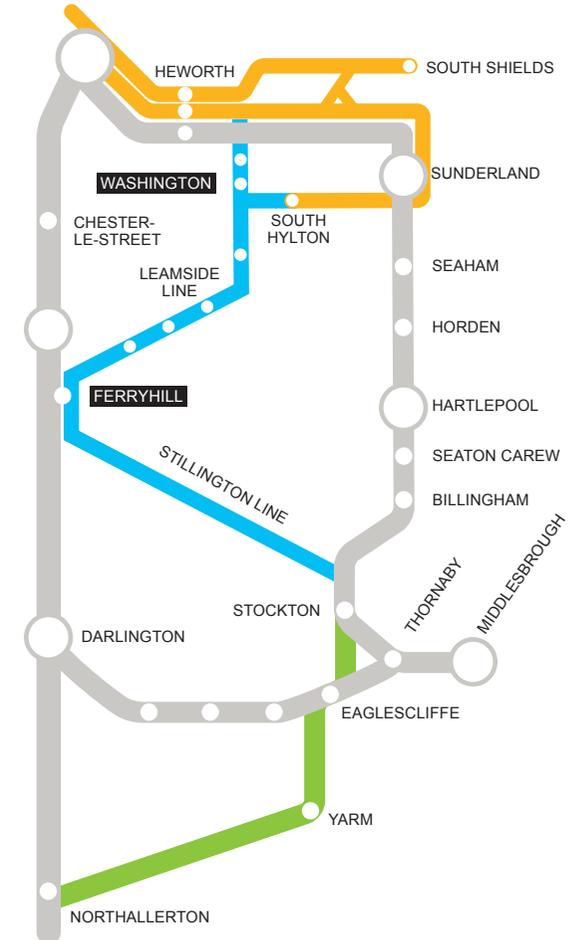
- ECML capacity and resilience.
- South of Tyne and Wearside Loop (Metro).
- Local and regional rail connectivity.
- Freight enhancements to meet future demand.

How does the project help meet our objectives?



As well as solving the ECML capacity constraints, reopening the Leamside Line also offers the potential for local rail connectivity, managing congestion and access to jobs in our region. It would also offer the opportunity to integrate our local railways and Tyne and Wear Metro, enabling major improvements in connectivity for people across the region. Washington is the fourth largest town in the UK without a rail service.

Leamside and Stillington Lines map (including South of Tyne and Wearside loop)



8. Carbon neutral rail and Metro in the North East

Issues in the North East

The landscape of the North East is a beautiful mix rural and urban areas in which our rail and Metro service work to connect the two. However, the contribution to carbon emissions has made the Local Authorities in our area call climate emergencies to protect the North East, collectively more can be done. One element, is eco-friendly travel whilst supporting the government's Net Zero Plan 2021 and providing great passenger experience.

This strategy will assist the North East in becoming a greener and healthier place to live, work and visit.

Congestion

High proportions of car use in the region result in road corridors into the centres of Durham, Newcastle, Gateshead and Sunderland being regularly congested, especially at peak times and particularly at city centre river crossings. Increased number of cars on the road for an extended amount of time caused by congestion is leading to poorer air quality. Higher levels of congestion can lead to a higher risk of road traffic accidents.

Car use

Recent decades have seen rising levels of car use and ownership in the North East. According to DfT in 2019 76% of people in the North East opt to commute to work using a car. Patterns of car ownership and use may change permanently post-pandemic as road-space reallocation favours buses and active travel modes, with air quality interventions having a similar impact. Under these circumstances, the presence of a high-quality integrated transport network with rail, Metro and bus at its core becomes ever more relevant.

Rural residents are more dependent on cars than urban residents due to some having little to no viable public transport option.

In the government's Net Zero Plan they aim for the end of sale of all new petrol and diesel cars by 2030, however we must ensure our public transport is a high quality alternative to private car use whilst working to run decarbonised rail and Metro services.

The use of car is not the only issue for residents, but freight on the road is a similar cause for congestion and accidents.



Collectively, Metro and Local Rail supported 34,800 daily commuting trips within the North East in 2018.



A full Metro train has the potential to take 119 cars off our local road network.

Air Quality

An impact of the dominance of travel by car has resulted in hotspots of poor air quality which has pushed government and Local Authorities to put plans in place to reduce it. For example, Newcastle City Council's Clean Air Strategy is planned to come in action in Summer 2022. Their clean air zone will cover Newcastle city centre as well as routes over the River Tyne bridges and will apply to all taxis, vans, buses, coaches and HGVs that do not meet national Clean Air Zone emissions standards. Whilst private cars will not be subject to charges Newcastle and Gateshead Councils are encouraging use of other modes of transport. Durham is also looking at methods to reduce carbon emissions in their area.

A key theme from the 2019 Tyneside Air Quality Public Consultation was that improvements to public transport and walking and cycling routes are needed before many people, who said they rely on their cars for essential journeys, would feel able to change their travel behaviour.

By supporting the reduction of carbon emissions in the North East we could see a resultant reduction in public health issues.

Metro is currently one of the most sustainable forms of transport within the region, each Metrocar has the potential to take 119 cars off the road and per passenger KM only active travel and electric vehicles have a smaller carbon footprint. The introduction of the new fleet of Metrocars from 2023 will reduce this further with a minimum 30% reduction in energy usage. In addition, many of the interventions that have been delivered through the asset renewal programme aim to reduce energy consumption and the carbon footprint of the wider Metro operation. This includes lighting, lift and escalators that are more energy efficient.

Fuelling rail

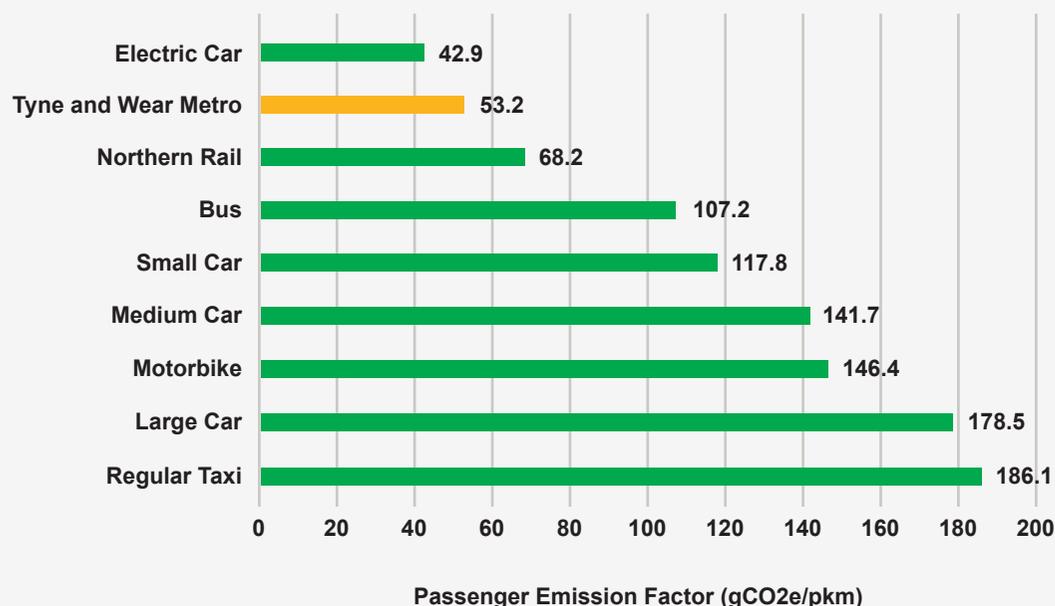
There is a marked difference in the way Metro and heavy rail is powered. Whilst all Metro trains are electric, only 31% of the region's heavy rail network is electrified. It is necessary to move to greener trains, including increased electrification of our rail network, where practicable. Where electrification isn't possible it is necessary to assess the possibility of other traction types for trains including hydrogen and battery power to drive our rail services.

Similar investment in electrification to serve Freight is vitally important as the country as a whole moves to a carbon neutral future.

Where are we now?

Recognising the importance of the environment, both locally through declared climate emergencies and local air quality proposals and in response to national government's Transport Decarbonisation Plan.

Metro and rail amongst the least polluting modes



Metro

In 2022 Nexus will publish an Energy and Environment Strategy which will cover all its operations including Metro. Nexus' vision is to continue to serve the North East with Metro being the cleanest, greenest mode of transport. One of the biggest environmental benefits to be gained is to offer people an attractive low carbon alternative mode of transport through Tyne and Wear. Driving growth in public transport usage is central to delivering any Net Zero regional transport network.

The new Metro train is due to enter passenger service in 2023 with a full roll out in 2024. The new Metro fleet will be more energy-efficient coupled with an increased passenger capacity per train, allowing emissions per passenger-kilometre performance to further improve. The new Metros will also have battery provision that gives the ability to run 'off wire' creating new expansion possibilities.

Local rail

Local rail provides connections from outside the urban core and plays an important role for some of the slightly longer journeys to the economic and social hubs in the North East.

Local rail expansions are being developed with the most advanced of these being the Northumberland Line, which is currently planning to be operational during 2023/24. There is a significant outflow of commuters from Northumberland into Tyne and Wear. Congestion is already an issue on the strategic road network into the urban core and alternative modes of transport need to be provided to ensure the population of South East Northumberland can access key areas of employment by sustainable modes.

Unlike the Metro there are as yet no firm plans to replace the current diesel fleet for local rail services. We will seek to work with Northern to support the case for a North East rolling stock strategy.

Regional and national

Currently, the East Coast Main Line is fully electrified through our region, however other sections of the network require further development, to accommodate longer distance services which currently run diesel trains 'under the wires' on services to and from the North East. Without substantial investment, there is also limited power availability to cater for future growth in services.

The Azuma and Nova fleets introduced on the East Coast Main Line are lighter and more energy-efficient in comparison to the older stock they have replaced, many of which were diesel units. In December 2021, East Coast Trains Limited (a new Open Access operator) have launched a new long distance electric service calling at Morpeth and Newcastle.

Freight

As of 2021, none of the region's rail freight services were hauled by electric locomotives, due to a need for electrified sections, particularly on local routes and freight-only sections connecting to our freight terminals, ports and depots. The freight market in the North is heavily dominated by road with 87% of the tonne kilometres transported using road.

Where do we want to be?

We want to play a part to enable the reduction in congestion on the roads of the North East by enabling a modal shift through extending the reach of Metro and Rail to more communities infrastructure of trains and other alternative transport methods. We are continuing to look at opportunities for an expanded rail and Metro service to best serve the North East and encourage more passenger to travel sustainably. **Our plans are detailed in the Overcoming inequality and growing our economy chapter.**

Similarly, we are seeking ways to increase the use of existing services, with more details in our Appealing sustainable choices chapter.

We will progress plans for network extension to both the rail and Metro lines making an attractive offer as an alternative to a private car. Whilst the government plans for stop sale of new all petrol and diesel cars by 2030, we also need to continue to ensure other choices are available to those not choosing or not able to buy a zero emissions vehicle.

We want to continue to investigate options to reduce road congestion, carrying passengers and freight by using less energy than other modes of transport. To support our Local Authorities plans to achieve cleaner air and support the reduction in health issues in their

area. We aim to seek opportunities for local rail and Metro Park and Ride options to help reduce congestion and therefore emissions in our main centres.

In 2019/20, Network Rail and the wider rail industry came together to assess the issues and options for being closer to becoming carbon neutral. The resulting Traction Decarbonisation Network Strategy (TDNS) sets out the rail sector's response to the government's climate challenge by outlining how the direct emissions from trains on the network can be removed. The TDNS considers where overhead electrification, battery or hydrogen trains might be most effectively be deployed on key routes in our region with recommendations put forward, and fully endorsed by this strategy to help our region meet emissions targets.

In Autumn 2021, the government published its Net Zero Strategy and supported switching to a carbon neutral rail and Metro by 2050 by pledging to remove all diesel only trains (both passenger and freight) and deploy new low-carbon technologies on the network. We welcome the government's pledge to deliver as hydrogen and battery trains will need to form a part of our local Rail solution. We will work with stakeholders to take advantage of the government incentive to take up of low carbon rail options at the earliest opportunity.

How do we get there?

A greener way to travel

Our aim is to improve accessibility of rail and Metro to increase usage and reduce reliance on private cars. Greener travel through modal shift will enable long-term decarbonisation.

Our findings based on local travel habits and average passenger loading show the Metro and local rail the forms of transport with the lowest emissions, despite the age and mix of traction sources of the current fleets in the region. In fact, Metro is one of the greenest ways to travel currently.

With pledges from government to invest in the future of rail to become greener we now have more certainty that voices for an eco-friendly rail and Metro service are being heard. We will continue to explore the opportunities for new technologies to be utilised to benefit both the customer, planet and local economy.

Whilst the introduction of new traction technologies will improve the efficiency of train fleets in our region, these do take time however to research, develop, prove and introduce.

A 'quick win' can be had through greater use of our current rail networks by both passengers and freight, helping prevent increased road traffic levels as part of the post- pandemic recovery, reducing emissions and helping to tackle local air pollution.

Part of encouraging a modal shift is to ensure the areas have convenient access to the network. In the north west of North Tyneside borough, particularly in areas they currently lack convenient access to Metro and local rail. Similarly, Durham would benefit from an hourly connection to Chester-lee-Street. By connecting areas across the North East it will ensure greater connectivity for those living and working in those communities, boosting the economy and employment opportunities, as well as relieving road traffic and congestion for those who use the A1(M). This will also have a positive impact on reducing overall carbon emissions.

Prior to lockdown, most Metro services had adequate capacity with some peak-time journeys carrying the heaviest passenger loadings. Research to assess the impact of introducing Clean Air Zones in Gateshead/ Newcastle/ North Tyneside concluded that whilst some peak-time trains were frequently very busy, there was still sufficient capacity to accommodate the projected modal shift from car to Metro.

In terms of expansion, we will keep assessing and lobbying for more to be done for local rail and Metro in an effort to increase the attraction of our services as the mode of choice. In regard to freight services, the potential for transferring more freight from road to rail is substantial and increasingly important as we move towards the goal of a net-carbon future. The freight market in the wider North is expected to grow by over 30% until 2050 across all modes.

We welcome government's support for modal shift from road and air to rail for freight services within their Net Zero Strategy. Through investment we could increase capacity in the North East to meet current and future demand for freight and take more congestion off the road with an attractive alternative to businesses.

Furthermore, with support, expansion and development of the pre-existing infrastructure, rail would be able to accommodate more freight service in the region. Running one additional freight train per hour over the Pennines could save over 10,000 lorry journeys a week.

Decarbonisation of the trains

The DfT has challenged the industry to remove all diesel-only trains from the network by 2040. The government's Net Zero Strategy is a step in the right direction for the rail and Metro industry with future investment an indicator for the developments in years to come.

There are 533km of rail lines in the North East, only 31% of which are currently electrified (East Coast Main Line plus Metro), meaning most of our region's trains continue to be diesel powered. Many local rail services are operated by diesel trains built in the 1980s, which emit larger quantities of pollutants, leading to poor air quality, particularly in enclosed station environments.

As mentioned previously new Metro fleet is being built and will start to roll out onto the network from 2023. However local rail is lagging behind. We will work with Network Rail/Great British Railways to make the case for investing in a new carbon zero fleet for the North East. As the local services, depots and stations are all 'self-contained' we would seek to be an early adopter of newer technologies to decarbonise local rail in our area.

Our stations and depots

Stations can also play a role in achieving environmental objectives. Investments in upgrades such as solar panels, implementing water efficiency measures, the provision of recycling facilities and installation of LED lighting can all reduce the carbon impacts on the surrounding communities.

The new Metro train depot at South Gosforth will feature sedum roofing, rainwater recycling, daylight capture and other environmental features.

Only 5% of Metro journeys included use of a car to get to a station, so accessibility to or from the network is already highly sustainable. Continuing to provide good accessibility to our local stations through better connections with local bus networks, walking and cycling routes will further contribute towards delivering these environmental benefits.

Working with partners

We will support Transport for the North who within its Strategic Transport Plan (STP), has committed to the development of a decarbonisation pathway to 2050.

The government, and its Net Zero Strategy and Transport Decarbonisation Plan set out key points of business and society will need to do to deliver the significant emissions reduction needed.

Our focus is on making public transport and active travel the natural first choice for public mobility, something which the successful delivery of this Rail and Metro Strategy will enable us to deliver as a region which in turn will help the environment.

The impact of not addressing emissions and supporting those around us to make changes could see detrimental impact on the communities we serve. This is reiterated in our Transport Plan which commits us to initiating actions to make travelling in the North East net carbon zero by 2050. Our local rail and Metro networks are the most efficient and greenest 'powered' mode of travel with respect to emissions, therefore have a significant and ever-growing role to play in tackling these issues.

Through delivery of the NERMS we will reduce transport carbon-based emissions by:

- Increasing the number of people travelling on rail and Metro in preference to the private car.
- Increasing the share of goods transported by rail.
- Introducing new trains, more efficient electric ones on the Metro and electric/battery/hydrogen ones on local rail.
- Improving stations and depots.

Description of project

Replacement of Tyne and Wear Metro trains and new depot.

We are replacing our current 40 year old fleet of 89 Metro trains, with 46 brand new trains that will provide a step change in customer experience and also benefits for the environment. Our brand new depot will reduce our carbon footprint as well, compared to our existing 100 year old depot.

Innovative solutions implemented

- Increased capacity - up to 600 passengers
- At least 30% more energy efficient than current fleet.
- Automatic sliding steps providing easy access for mobility impaired.
- Space for cycle storage on board encouraging integrated journeys.
- Minimum 35 year life span.
- 45-minute wireless running from battery power.
- Some of the old fleet to be scrapped and materials recycled.
- Five trains offered for community use.
- High proportion of new trains built from recyclable materials.

- 11.2 million car journeys taken off road.
- The new fleet is projected to save Nexus approximately 4,100 tonnes of CO2e annually, enough to power approximately 4,000 homes.
- The new depot will have environmental features such as sedum roofing, rain water recycling, daylight capture and designed to high quality environmental standards.
- Customer comfort in mind with air conditioning and heated floors in winter, mobile phone charging points.
- Internal and external facing destination information screens, improving information provision on what is available today.
- Walking through train, rather than two separate cars, improving perceptions of safety and security.
- Four wheelchair spaces per train and retractable ramp at every door (16 in total) plus a further four multi use areas for bikes/luggage areas, more than doubling available space and priority seating, new provision for customers.
- Brighter lighting and visual and audio contrast to the doorsets, digital CCTV cameras throughout each train with footage shown periodically on the passenger information screens, improving safety and security.

How does the project help meet our objectives?



- Fast, reliable and more frequent journey times between key centres of employment and education – connecting communities.
- Encourages mode shift from cars – estimated that there will be an uplift in passenger numbers of 7.8%.
- Reduces carbon emissions through more efficiency and mode shift.
- New fleet is 15 times more reliable than current fleet.
- Improved resilience and maintenance through state of the art depot facilities.
- Helps integration through cycle storage on trains.



9. Rail and Metro for a healthier North East

The Rail and Metro Strategy will help to achieve better health outcomes for the region.

By working in partnership to deliver schemes and initiatives which encourage use of rail and Metro, more sustainable methods of travel will improve local air quality and will help our region move towards attaining better levels of health.

Issues in the North East – deprivation

There is a strong link between deprivation and public health risks. In 2019 Parliament found that areas with more income deprivation are more likely to have a range of health conditions, including mental illness, obesity and diabetes. In 2021, following a number of lockdowns, Public Health bodies found that those at risk of developing health issues did so or were borderline.

The 2019 Index of Multiple Deprivation shows all areas of Tyne and Wear have above average levels of multiple deprivation. Furthermore, we have experienced a worsening in the overall deprivation levels, with significant pockets of concern around the banks of the Tyne and into South East Northumberland - 23 of the 60 Metro stations are in the bottom 20% of deprivation areas.

Air quality

Poor air quality and high levels of air pollution within the urban areas of the North East are becoming an increasing health concern. The elderly, children and those with pre-existing health conditions are more sensitive to the health impacts of air pollution. Long-term exposure to air pollution reduces life

expectancy by increasing deaths from cardiovascular and respiratory conditions, and from lung cancer. It is estimated that long-term exposure to air pollution in the UK has an annual effect equivalent to 28,000 to 36,000 deaths (Public Health England 2018).

Active travel

Based on a 2019 survey of 1,298 Gateshead, Newcastle, and North Tyneside residents aged 16 or over, 72% of participants felt that more cycle tracks alongside roads physically segregated from traffic and pedestrians would encourage them to cycle more (Bike Life Gateshead Newcastle, and North Tyneside, March 2020).

Environmental factors such as poor lighting, secluded areas or woodland on the journey exacerbate these fears. Other studies have found that people from deprived areas consider safety to be a barrier to walking for travel or leisure and that women are constricted by perceived dangers from the external environment. Traffic is an issue for older people and people with mobility impairments, who also mention that narrow pavements and obstacles such as parked cars on pavements impact on safety and cycle tracks and bus lanes create hazards.

Disability

The incidence of disability is higher in the North East region than England, with 28% of the North East population having a life limiting illness in 2018/19, compared to just 21% across England.

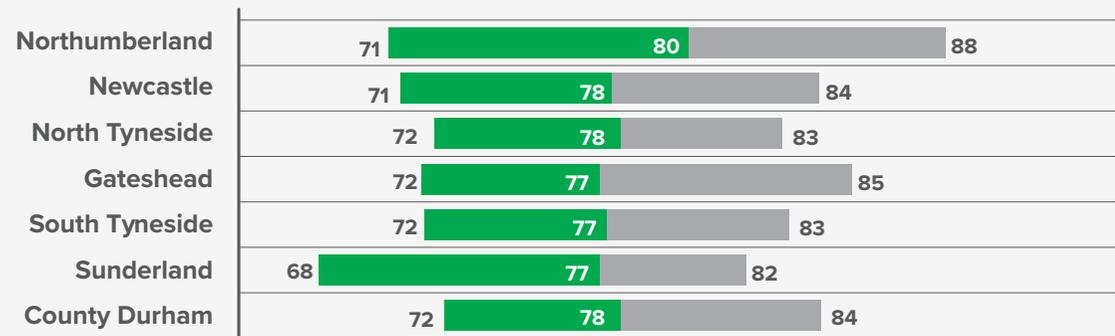
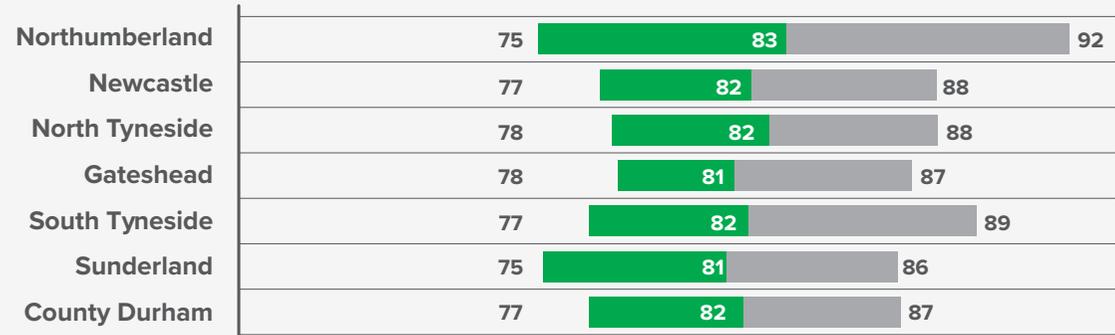
It is important to recognise that people's needs, and experiences vary depending on whether they live in an urban or rural area. Some people experience particular barriers to mobility and access such as people with a disability or injury, elderly people and people with hidden disabilities and conditions.



Life expectancy is about one year lower in the North East in comparison to the rest of England. Similarly, healthy life expectancy is about four years lower.



Life expectancy at birth – median, minimum and maximum values within North East local authority areas, 2013-2017



Where are we now?

The health and wellbeing gap within our region remains a great cause for concern. During the pandemic many of the services people depended on were limited to keep within government guidelines, or services went elsewhere to focus on helping Covid-19 patients.

During the lockdowns, outdoor activity was permitted, meaning people did enjoy walking and exploring their local surroundings. We've seen an increase in walking (37%) and cycling (15%) in our region between April and July 2020, with increases in cycling up to and over 100% at some locations.

Pre-pandemic the catchment radius for the Metro was 800 metres, research suggests that this potentially will rise to 1200 metres, due to more active travel uptake.

Nexus and its local authority partners will continue to focus on identifying and delivering sustainable links to Metro stations and key bus corridors through the delivery of designated safer routes, based on the concept of TfL's Healthy Streets programme.

The importance of mode choice in 'first mile, last mile' connections is linked to the improved healthcare objective. By making it safe and intuitive for public transport users to walk and cycle to and from public transport, public health and local air quality will be improved. Demand-responsive transport and mobility as a service will also have a role to play in the context of last-mile trips.

The North East has an ageing society and there is a need to address the changing societal needs. According to Public Health England, as of 2019/20 only 48.1% of over 65s receive the amount of social contact they would like. The provision of sustainable public transport services connecting our older generations to the essential services is increasingly important.

Our rail and Metro networks are the most efficient and greenest mode of travel with respect to emissions, therefore have a significant and ever-growing role to play in tackling issues brought about from poor air quality. It can also play a valuable role if considered in conjunction with active travel as a means of accessing the network.

Where do we want to be?

The December 2020 'The Big Transport Conversation' highlighted that users would like to see more done to encourage more active travel. We want to see the provision of suitable routes to and from our stations (Metro and local rail), coupled with secure cycle parking and where practicable on board cycle use.

We want to help to encourage a modal shift to public transport with could result in personal health and fitness benefits resulting from increased exercise levels relative to car use. A high proportion of our passengers walk or cycle to Metro and local rail stations. We are planning to improve access to our stations through a 'healthy streets' approach.

We want to better link existing and future stations to active travel corridors to extend the accessibility to the networks to more people.

We want to develop the carriage of cycles on trains, where practicable. Currently, the different booking arrangement between train operators remains confusing and continues to act as a barrier to use. We want to ensure users have access to secure cycle parking facilities which could encourage more people to cycle to and from their local station. Users cycling to the station increases the catchment of our existing rail and Metro networks even further.

We want people to be connected to the outdoors using the services and be able to explore walks and trails across the North East, such as those in Northumberland.

We want to work with our stakeholders to encourage more sustainable journeys using our region's rail and Metro networks, whilst also helping to expand the reach of our existing rail stations beyond the traditional distances typically associated with journeys on foot.

We want to make rail and Metro a suitable alternative to car use. Reducing the number of cars on the road will help to make the roads safer and less congested and improve air quality. This in turn could lead to fewer hospital admissions and a healthier North East.

We want people to feel connected. Through and improved rail and Metro we can work together with our partners and promote social inclusion whilst aiming to reduce loneliness and related mental health issues.

Our Rail and Metro Strategy will work alongside the Active Travel Strategy and will help Local Authorities and stakeholders in the region to increase the uptake of active travel and deliver infrastructure that is safe, appealing, well designed, and accessible for all.

How do we get there?

The North East Transport Plan outlines the necessity to ensure the network caters to all, accessibility is key to addressing issues. We've adopted the TfL approach on routes to selected public transport interchanges, to encourage sustainable and healthy access to improve public health, but more needs to be done.

Rail and Metro are the solution to enable an ageing society to be more independent for longer by connecting people to the essential services they need such as health and social care and access to outdoor spaces.

We will continue to work with local authorities to promote a shift to using public transport and listen to passengers on how to make rail and Metro move accessible. For example, how we can make it more convenient for walking, disabled and cycling access to rail

and Metro stations. We will work towards enabling people across the region to consider transitioning to using rail and Metro for the right journey circumstances.

We will seek to collaborate with Local Authorities to consider suitable routes and provision for active travel as vital components of our region's transport network. Our developing cycling network requires further investment to deliver its full potential on a wider scale allowing users to travel longer distances including links to our Metro and local rail services. We want to do our part for creating a healthier, happier North East.

We will continue to promote Park and Ride via Metro and local rail links as a means of improving air quality in urban centres and promoted walking and cycling for active travel and wider public health benefits.

To encourage active travel into stations and customers taking advantage of cycle routes, we will work with stakeholders to ensure storage or onboard carriage of cycles is available where practical. By encouraging active travel into Metro stations, we could firmly increase the catchment by at least 15%.

Through delivery of the NERMS we will encourage more active travel as part of people's sustainable journeys by:

- Improving walking and cycling links to existing and new stations.
- Increasing the number of people travelling on rail and Metro in preference to the private car.



10. Safe and secure network

We want people to feel safe and secure when travelling to, or waiting at stations for rail or Metro services. This is just as important as the safety and security passengers feel when on board rail or Metro.

Issues in the North East

In the North East, similar to other areas, we experience anti-social behaviour and crime. The North East is covered by Northumbria, and Durham and Cleveland police forces and the rail network is covered by British Transport Police which means collaboration is necessary with all to achieve a safe and secure public transport service. However, the North East suffers a need for a fairer funding structure to tackle anti-social behaviour and crime in general.

We understand that the rail or Metro journey doesn't start at the station but includes travelling to it. The effort to make people feel safe shouldn't be only by the rail and Metro services but more a collaboration between local authorities, train operators and police forces for support. Negative perceptions of safety and security impacts on patronage, especially at night.

A panel survey from June 2018 showed passengers' most significant personal security concern (on Metro) to be the risk of experiencing anti-social behaviour which negatively impacts people's perceptions of personal safety and overall satisfaction, especially when travelling at night.

Where are we now?

Personal safety and security are important when travelling on our networks. We know a negative perception of safety and security can affect the travel choices of individuals, in that they might not choose public transport out of fear, more particularly at different times of day. In order to ensure a successful and attractive integrated transport system, high levels of personal security need to be in place, and passengers need to feel that their safety is not under threat.

Personal safety on Metro scored between 6.8 and 7.7 out of 10 with similar levels for security.



85% of passengers were very or fairly satisfied with personal security on board a Northern service in the North East.



Nationally, 73% of rail users rated personal security whilst using stations as good, rising to 75% when on board a train.

Perceptions of safety on the rail network in our region is generally positive. 85% of rail passengers are very or fairly satisfied with their personal safety.

A 2019 Nexus survey of perceptions of safety on Metro found that 68% of respondents have felt worried about their personal safety while on board the Metro, 21% while waiting for the Metro and 11% when walking to/from stations and stops.

Staffing

Since 2017, there has been a new focus on security on the Metro, with a dedicated Security Manager appointed and increased staff patrols across the system. Body-worn cameras were introduced in 2018 to deter troublemakers and provide extra reassurance to passengers as lockdown eases. From late 2020, a new 12-strong customer support team has been deployed to encourage compliance with the face coverings rule, to deal with anti-social behaviour and fare evasion on the Tyne and Wear Metro.

On Metro, Nexus and its partners at Northumbria Police and British Transport Police have undertaken a series of community reassurance exercises, aimed at providing a physical presence at locations across the system to address antisocial behaviour and

fare evasion. Northumbria's Police and Crime Commissioner has set out a Safer Streets initiative to make public transport safer whilst working in partnership with Nexus. We continue to work with our partners, using intelligence to address problem spots on the network. An increased staff presence on the Metro network is highly valued by customers, not only for provision of information but also in terms of perceptions of safety and security.

Metro's new fleet will be able to live stream on CCTV which will be another added security and safety measure across the network.

For increased security Northern Rail are introducing person identifying camera onboard which can be used for prosecution if needed. Northern Rail work closely with British Transport Police (BTP) and colleagues across the rail industry to make the network as safe as possible. They have Travel Safe Officers who work across their trains and stations to help make passengers feel safe and secure when travelling.

Cleaning regimes

Following the COVID-19 pandemic the government advised the public not to travel on public transport where possible. This caused a decline in patronage which the rail and Metro industry have worked hard to overcome with improved cleaning regimes and advertisement and clearly communicating this to members of the public. There is still work to be done to reassure passengers that public transport is safe.

To address concerns regarding cleanliness cleaning teams regularly sanitise ticket machines, handrails and other touch points around the station.

On Metro, trains are being treated with a new anti-microbial sanitiser throughout the passenger areas which protects surfaces for up to 30 days. A device uses an ultraviolet light beam to sanitise handrails on escalators and hand sanitiser can be found near entrances of the busiest stations.

A team of over 600 cleaners cover the Northern Rail network; cleaning all carriages and key stations every day, with extra focus on cleaning touchpoints like handrails and armrests, using an anti-viral sanitiser which stops the virus for longer. These cleaning regimes will be kept in place to provide safe rail and Metro travel.

Text for help

British Transport Police have recently introduced a text for help initiative to improve safety and security on their trains. Passengers can send a message to 61016 to receive immediate assistance and guidance. Northern work closely with British Transport Police (BTP) and colleagues across the rail industry to make their trains and stations on the network as safe as possible.

There must be further communications work to advertise the Text for help scheme to ensure it is being used to provide a safer and securer network. This will improve the level and perception of safety on the network.

Incident reduction

By continuing investments in CCTV and staffing we can hopefully minimise incidents happening. If they happen in the stations or on the tracks, as well as the emotional impact on friends and family, they also can have significant impacts on other passengers through delays to services.

There is work necessary to reduce the risk of sexual assault and harassment on the network. This includes staff training to spot the signs and provide appropriate support to victims as well as increased CCTV and the use of the text for help scheme.

The Hate Crime Charter is in place for bus and Metro operators as well as members of the public to report incidents. This service offers free and confidential support. The service will help people report a Hate Crime to the police, either directly or through Victim Support's National Hate Crime Report and Support Centre, where people can remain anonymous.

The new Metro fleet which will be fully rolled out in 2024 has more robust windows, doors, seats as well as support poles which should reduce incidents effecting the Metro services.

Publicity

We are continuing to improve our communication with the public on the steps being taken to maximise personal safety whilst traveling by Metro. We will keep people involved through our usual online and on-site channels, and actively explore any new products and processes which come to market that will improve the safety of customers and staff.

Where do we want to be?

People must feel confident in using public transport for it to be a mode of choice. We must continue to improve the perception of safety and security of our local rail and Metro

systems, ensuring people are confident and reassured whilst travelling around the North East.

We want to increase the amount of CCTV and staffing presence to deter possible acts of vandalism or assault. It is necessary to provide appropriate support and care should an incident occur.

We want to see improved modal interchange, lighting and CCTV along popular walking routes together with support from local authorities and police services to ensure people feel safe on their journey to the stations. We will also seek funding to raise the standard for passenger environment on trains, at stations and along station approaches.

How do we get there?

This strategy, in conjunction with the Nexus safety and security strategy, will support processes and interventions to improve personal safety and security for users of our local rail and Metro networks across the region. Passengers must feel safe when using our networks. We need robust systems in place to deter those who create safety and security concerns for passengers this will encourage higher patronage on rail and Metro services by making a safer environment for all.

Nexus have developed specific recommendations which are grouped by:

People:

- Investigate the costs and feasibility of increasing the levels of Metro Police Unit (MPU) officers to extend the reach of the MPU.
- Consult with stakeholders around the introduction of Travel Safe Officers to the public transport network.
- Set up a working group to examine how to better use frontline staff on Metro, bus and Shields Ferry.
- Implement a change to the Penalty Fare Notice system to increase the deterrent.
- Work with local councils and police forces to ensure the journey to the stations are well lit and have CCTV.

Technology:

- Examine if the use of analytical CCTV is cost effective and useful to Nexus.
- Use a CCTV working group to examine where existing gaps are in CCTV coverage.
- Further roll out the use of body-worn CCTV across the Metro.

- Pilot a trial covert surveillance scheme in the Metro depot.
- Use further plain clothed patrols of Customer Service Assistant's to tackle fare evasion in data driven hotspot.
- Increased gatelines at more Metro stations and remote monitoring can help to tackle fraud, anti-social behaviour and provide customer reassurance.

Consultation and Liaison:

- Set up a "Meet the Manager" type campaign and ensure representation from key areas across the business at the events.
- Work with Youth Offending Teams to incorporate SafetyWorks! into the rehabilitation program.
- Reach out to collages and 6th forms to encourage the introduction of "Travel Ambassadors".
- Introduce an age-appropriate Safety Works course for 15–18-year-olds.

Connectivity

- Improved connectivity and integration between transport modes will reduce risk to safety and security when travelling between stations.
- Active modes of travel should be improved with increased lighting and CCTV on popular walking/ cycling routes.

Through delivery of the NERMS we will improve the safety and security of rail and Metro travel by:

- Maintaining enhanced presence on trains and at stations.
- Providing safer routes to stations.
- Raising the security standards at stations and on trains.
- Undertaking targeted initiatives and campaigns to improve passenger safety.

1 1. Appealing, sustainable transport choices

The region must introduce measures which make sustainable travel a more attractive, convenient and easy alternative to getting around by car. Only through this, will modal shift occur and patronage increase.

Our ambition is to have improved, greener and more sustainable transport options, including public transport, cycling and walking. Our aim is to deliver continuous improvement to a modern, integrated transport system that underpins our economic ambitions and encourages people to travel more sustainably.

We have a solid foundation upon which we can continue to build a greener and more sustainable transport network across our region. The emphasis of this chapter will focus on ways to increase patronage on rail and Metro by making it more attractive to retain existing users and encourage new users.

Some of the key aspects are covered in other chapters including Safety and Security and the benefits of new rail and Metro trains and carriages.

Thus, the key aspects covered in this chapter are:

- Improved customer experience.
- Ensuring punctual and reliable services.
- Affordability and value for money.

Under the changes being looked at following the Williams Shapps Rail Plan the North East will aim to work with the Great British Railways Transition team to better align influence and accountability enjoyed on the Metro with that on Local rail in particular. This work is described in more detail in the Integration chapter.

Issues in the North East

Customer experience

Customer experience is high on the agenda for many businesses and their customers. More than two-thirds of companies now compete primarily based on customer experience. Over the next five years, customer experience is expected to overtake price and product as the number one brand differentiator. Research from PWC has found that 73% of customers point to experience as an important factor in their purchasing decisions, behind price and product quality. Furthermore, 43% of consumers would pay more for greater convenience, and 42% would pay more for a friendly, welcoming experience. Failing to meet customer expectations has been shown to have twice the negative impact as delighting customers has a positive impact. Nexus have recognised the importance of improved customer experience and are producing a Customer Experience Strategy to focus on improving positive customer experience.

Therefore, improved customer retention often provides the most obvious rationale for making customer experience improvements.

Punctuality and reliability

Passengers repeatedly ask for certainty that their train will arrive on time. To compete with the convenience of the car, public transport needs to offer certainty of journey (as far as is practicable). Delays to services, infrequency and lack of accessibility can make customers view rail and Metro as an unreliable form of transport, especially in comparison to car travel.

Affordability and value for money

Pricing and affordability can be a barrier to sustainable transport use. Transport poverty can be the result of low income, poor availability of public transport and needing to make lengthy journeys to access essential services. The impacts of transport poverty are worst for disadvantaged people in rural areas according to a recent Evidence Review for the Department for Transport. Improved ticketing and integration of public transport services can provide better value for money.

Passenger choices can depend on certainty that their train gets them to their destination on time. To encourage a modal shift public transport needs to offer connectivity and timely updates for alternative routes if a delay occurs which would amount to a whole network approach.

Where are we now?

Customer experience

Rail and Metro operators regularly survey their passengers for feedback on the customer experience. In addition, Transport Focus also regularly conduct surveys to ascertain the current level of feeling amongst passengers.

The Spring 2020 Transport Focus Customer Satisfaction Survey found that only 77% of Northern Rail customers were satisfied with their journey. This was the second lowest score across the country. 73% of customers were satisfied with their station, a reduction of 6% since spring 2019. Only 30% of customers were satisfied with how Northern Rail deals with delays; whereas 36% rated it as poor/dissatisfied.

Respondents to a 2019 Nexus Insight Panel Survey voted the local rail and Metro network as most important to invest in to provide benefits to the North East.

Before taking a Metro journey passengers voted these as the three most important items:

- Cost/VFM.
- Security approaching the station.
- Facilities for buying tickets.

Current Nexus customer surveys show that customer satisfaction is currently at 80%, the highest it has been for 7 years.

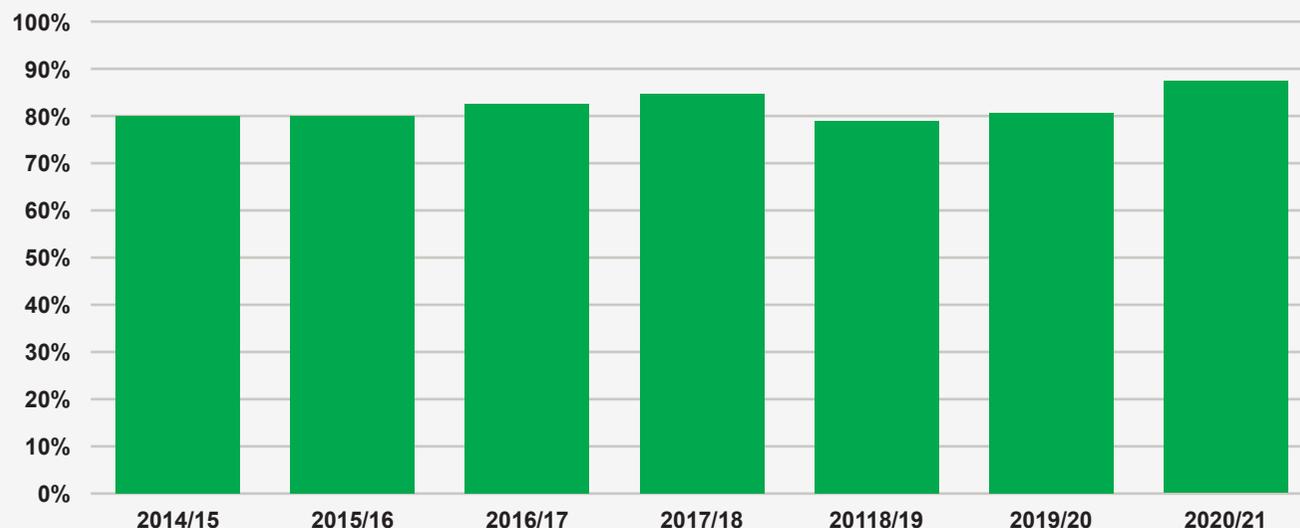
Punctuality and reliability

Rail and Metro record their punctuality and reliability on a regular period by period basis. Pre Covid-19 73% of Northern Rail customers were satisfied with the punctuality

and reliability of the services. However, as of the Spring 2020 Transport Focus Customer Satisfaction Survey satisfaction has fallen to 63%.

If the Metro is reliable then journey times are not dependent on other factors (unlike car journeys that are often subject to delay through congestion) and the Metro will be punctual. Metro has become more punctual in 2020/2021.

Average Metro punctuality



Affordability and value for money

In a 2019 Nexus Insight Panel survey, cost/value for money ranked highest importance for Metro passengers but only 62% of respondents felt the ticket offered fair, good or very good value. Similarly, on our local rail services where only 60% of passengers in our region were satisfied with the price of their journey. Integrated and easy to use ticketing would provide better accessibility to customers.

Jobcentre Plus Travel Discount Card is provided to those unemployed claiming Jobseekers Allowance or Universal Credit for 3-9 months (18-24-year-olds) or 3-12 months (over 25s). Cardholders are entitled to a 50% discount on selected rail tickets. There are also a range of discounts available to those in full time education e.g., Home to School Transport, Care to Learn and the 16-25 Railcard. There is Concessionary Travel Scheme for Tyne and Wear residents aged under 16 for use on Metro journeys. This helps to provide affordability to those in need to allow them to access education and employment opportunities.

Integrated and easy to use ticketing would provide better accessibility to customers.

Where do we want to be?

Customer experience

We want people to experience excellent customer service no matter the network they use. Many of the providers have great customer service strategies in place. The Metro Customer Experience Strategy aims to deliver a greater customer experience for our passengers by analysing customer feedback data to make targeted improvements in our physical and digital presence, along with embedding customer-centricity throughout Nexus.

Northern Rail have a Customer Charter as a way of showing their pledge to provide the highest quality rail service.

They have also shown commitment to improving customer experience by introducing a new customer interaction tool. Transpennine have also shown commitment to customer experience with the introduction of a Customer and Community Insight Panel, hoping to facilitate ongoing dialogue.

Our strategy will work to provide easy to plan integrated journeys, easy product purchase, safe and secure routes to stations, welcoming stations, clean, comfortable and reliable trains.

We also hope to increase discourse between operators, authorities and passengers so that the system works for all users.

Punctuality and reliability

We aim to provide improved punctuality and reliability across rail and Metro.

Northern set standards for train punctuality and make every effort to get customers to their destination on time. Their 2020 target was to ensure 79% of trains arrive within 3 minutes of their scheduled arrival time.

Metro aim for the highest levels of reliability and performance and measure punctuality performance against the timetable. They publish the results every four weeks on Passenger Charter posters at stations and online. Their most recent results for September – October were 82% of trains arriving within 3 minutes later or within 30 seconds earlier than scheduled. They aim to provide the best possible punctuality, reliability and customer service. They will refund customers if trains are delayed more than 15 minutes, whatever the cause.

Improved reliability can be provided with well-maintained and updated infrastructure; such as new fleets, improved signalling and better accessibility.

Affordability and value for money.

We want to provide improved affordability and value for money and reduce the impact of transport poverty on those in need of affordable access to rail and Metro.

Improved ticketing through integration and easier payment will provide better access. Nexus have been working on their Products and Payments Strategy to give customers the ability to buy products at home, at work or the move, making it easy for the customer. Fares will be affordable without placing undue subsidy burdens on local taxpayers and set at levels that allow Nexus to continue to invest in Metro. Payment methods will maximise customer convenience and revenues, deliver best value and minimise transaction costs.

A review is also underway on the national rail network. We would like to see simpler fares and better integration of ticketing between Metro and local rail which would be easier to achieve through further levels of devolution to the North East.

How do we get there?

Customer experience

Understanding of customer experiences and needs allows specific changes to be made to provide a better experience for passengers. Rail and Metro conduct regular customer experience surveys and produce strategies based on the key themes.

The published Metro Customer Experience Strategy sets a clear vision and interventions rooted in a collective sense of purpose to serve our customers.

Northern Rail have a Customer Charter to show their pledge to provide the highest quality rail service, including:

- Easy access to ticket services.
- Reliable trains that run on time.
- Clean and safe trains and stations.
- Helpful customer service staff throughout your journey.
- Extra help if you need it.
- Clear and helpful travel information.

Other areas we wish to improve are:

- Refurbishment of Metro and local Rail stations to provide more welcoming and community-based stations.
- Improvements to the signalling system is necessary to provide more reliable and punctual Metro services.
- Improved connections with walking, cycling and other transport services as well as supporting sustainable travel in rural areas with electric vehicle charging points in car parks will provide more sustainable choices to rail and Metro users.

These link into our ambitions within the Transport Plan for encouraging modal shift (away from car) across the region in rural and urban areas. By having more local control and powers, we are confident we will can deliver a better experience for our customers based on the needs of the North East.

Punctual and reliable services

Improved signalling, the new Metro fleet (and future Northern trains) and improved accessibility will improve the reliability of rail and Metro.

The new metro fleet will be 15 times more reliable than the current fleet based on the current fleet performance over the last 4 years.

Journey times must be reduced for rail to be more competitive with road-based journeys. This could be achieved by line speed improvements and longer-term electrification of lines or higher performing non diesel trains. Longer-term electrification of the Tyne Valley route is desired to provide greener journey opportunities, linking to the existing ECML and WCML electrified routes, especially given the TVL's secondary function as an ECML diversionary route.

Improved affordability and value for money

Tickets need to be made more affordable and easier to purchase/ understand to ensure purchase of the correct ticket type. The use of digital technologies, apps and contactless payments can improve a customer's experience by ensuring seamless transactions across all modes, reducing the complexity of understanding and purchasing the 'right' ticket.

We must also investigate if the impacts of Brexit and Covid-19 have changed the way in which people perceive affordability to previous years.

This can help to increase use of our rail networks and meet today's growing consumer expectations by making best use of new technological platforms.

The costs of cash handling on the Metro network account for around 0.5% of fares income – any reduction in these ongoing costs could be re-invested into new product development and reducing the cost per transaction associated with non-cash payment methods. Cash lying in TVMs at stations heightens the risk of theft and vandalism, resulting in substantial lost revenue and repair costs.

Improved affordability and value for money can be provided by:

- Move single trip, day and season tickets away from paper products to Pop PAYG.

- Move all season ticket product purchases and renewals online.
- Integration of smart products.
- Introduce payment apps and remote top-up facilities and download app.
- Introduce mobile ticketing and EuroPay Mastercard Visa (EMV)-based products.
- Utilise account-based technology.
- Investigate use of host card emulation technology.
- Development of app-based portal for new mobility services.
- Remove cash as a payment mode.
- Marketing and media campaigns.
- Further use of 'discounted' travel such as the 'take kids for free' initiative on Metro and discounted travel for those aged 18 and under.

Maintained and modernised infrastructure

To provide a satisfactory customer experience, punctual and reliable services and affordable ticketing we must provide well maintained and modernised infrastructure. This is covered in detail in Metro operations, maintenance and renewals.

Metro

The new Metro fleet arriving in 2024/25 will help address issues of reliability and availability, providing a more appealing service through increased frequencies and a better on-board travelling experience.

Getting to the station on a bike and taking it on a train will be made easier. This links to the Healthier North East objective for encouraging more sustainable journeys to be made using our region's rail networks, whilst also helping to expand the reach of our existing rail stations beyond the traditional distances typically associated with journeys on foot.

Devolution

Through expanded devolution from the current partially devolved system of TfN, the North East will have greater control over more aspects of rail in the region. This will allow for greater controls of the fares system in the region, so that ticketing can be made multi-modal, and prices reflect the needs of the region. We would also have greater control of infrastructure and line of routes so that the network is more efficient.

Through delivery of the NERMS we will improve the attractiveness of rail and Metro, encouraging more passengers by:

- Improving the customer experience.
- Integrating fares and ticketing across rail, Metro and bus.
- Improving reliability and punctuality of services.
- Extending the reach of local rail and Metro to serve more communities.



Description of project

To establish better connectivity for Northumberland and the wider region, the Northumberland Line rail project will bring passenger trains back into service between Ashington and Newcastle.

The scheme has the potential to transform the economic landscape of South Northumberland. It will help residents access employment opportunities in business clusters along the corridor. It will also incentivise new employment and training opportunities across the region, particularly in the growing renewable and advanced manufacturing sectors. This will attract new investment to the region and help the transition to a clean growth future.

Led by Northumberland County Council and through positive working with the Department for Transport, Network Rail, Northern Trains Ltd, Nexus and other key partners, this ambitious project will reintroduce passenger trains on the line by December 2023.

The new half hourly passenger service includes station stops at Ashington, Bedlington, Blyth Bedside, Newsham, Seaton Delaval, Northumberland Park, Manors and Newcastle Central.

The service will provide seamless interchange with the Metro system via a new station Northumberland Park allowing easier travel throughout Tyne and Wear. Improved access to the national rail network at Newcastle Central is a further benefit.

Innovative solutions implemented

One of the first pilots for a national initiative called 'Project Speed', both project costs and delivery time were reduced through innovative working across the project delivery partners.

Another innovation is to enable full fares and ticketing integration between the Metro network and the Northumberland line. This will create a joint fares structure based on an expanded Metro zonal map and enable ticket acceptance on both networks.

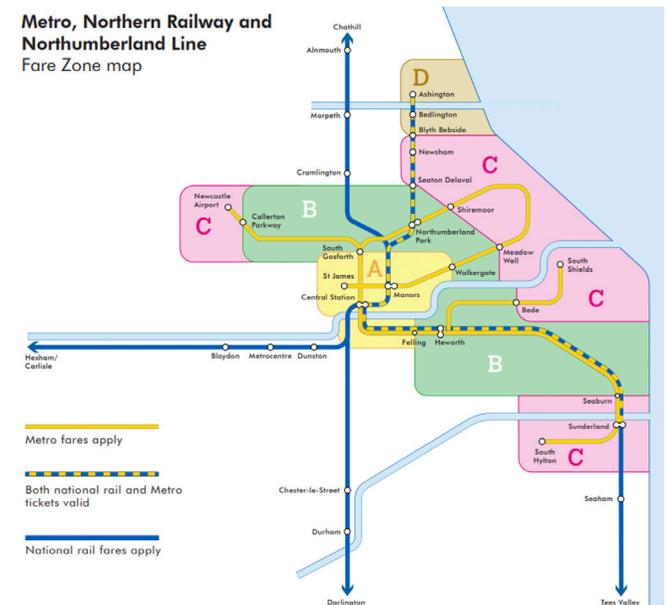
The project has utilised Land Value Capture and secured Contribution Agreements for 16 development sites which have the potential to generate a significant capital return.

How does the project help meet our objectives?



The reintroduction of passenger services has the potential to deliver economic benefits of up to £470m as well as offering a real alternative to private car use for local journeys.

Metro, Northern Railway and Northumberland Line Fare Zone map



12. Integration

We will seek better integration between local rail, Metro and bus to provide one coherent public transport network covering the whole of the North East. We will expand, improve and integrate our rail and Metro network through a series of network extensions, enabling rail to unlock greater access to opportunities for people, communities and businesses. We are confident that this will result in growth in modal share and patronage on our rail and Metro network.

Barriers to effective Integration in the North East

There are a number of issues which provide barriers to good integration between public transport modes. This is a problem because ultimately passengers have a choice and if they feel that travelling between public transport modes is too difficult, confusing and frustrating then they will at best stick to one mode or alternatively travel by car. As passengers will already be considering journey times and value for money – a seamless, hassle free, well integrated end-to-end experience is essential.

Inaccessible and unsafe locations

Rail and Metro stations, some of which were sited in the Victorian era, are not always in the ideal locations and poorly designed to meet the needs of new developments, emerging markets and to encourage greater accessibility to the local public transport network. Residents have also informed us that some walking routes to and from quieter, remote stations feel unsafe.

Physical Impediments

At too many locations passengers face physical barriers to integrated travel. Long walks from bus stops or between station platforms; a lack of car park spaces or inadequate bike storage facilities.

Active Travel

Whilst the provision of cycling parking at stations is improving and there have been increases in the number of cycles accepted on trains, more can still be done. The limits on the carriage of cycles on trains and the different booking arrangements between train operators remains confusing and continues to act as a barrier to use.



Timing and coordination

Integration between public transport modes is made harder by difficult service patterns rather than complementary timetables. Often local rail, Metro and bus timetables lack the coordination passengers require, leading to longer wait and journey times. For some local rail journeys integration is also limited by reduced station calling patterns. Too many passengers experience the frustration of seeing their next train or Metro depart into the distance just as they are alighting the bus or first train leg of their journey.

Fares & ticketing

Rail, Metro and bus fares are seen as complex by many passengers. There are numerous competing options on offer which makes obtaining the best deal very difficult. The situation becomes even more confusing when using multiple modes. Passengers believe an integrated public transport network across the region would provide better value for money. The ticket options need to be made easier for passengers with simpler fare structures. Tickets should be provided and purchased in 'smarter' ways across the whole public transport network.

How integration can be improved and the benefits to passengers

Integration of the rail and Metro networks and improving their connections with the wider public transport network and active travel modes will provide greater access to opportunities for people, communities and businesses.

Accessibility

Expansion of rail and Metro networks coupled with closer links with other modes of transport will increase the levels of accessibility for all. A wider rail network, which reflects both the current and future economic geography of our region, could be created across the North East by reviving disused routes and integrating them into our existing networks. This can be done at a lower cost than new-build railways.

We want to deliver new stations on existing lines and reopen routes, such as the Northumberland Line and the Leamside Line, alongside Metro network extensions to widen access to jobs and training, grow the economy and reduce deprivation.

Cramlington station improvements along with other stations set to be enhanced could encourage a modal shift. Cramlington works once complete will also enable more frequency at the station and benefit residents.

The Metro Flow project will see an existing freight line upgraded and electrified in South Tyneside from September 2022, making it capable of carrying Metro services. The project will allow Metro to have the capability to increase the frequency of Metro trains to one every 10 minutes outside central areas and boost the capacity for an extra 24,000 passenger journeys every day.

Park and Ride

Park and Ride facilities make using rail and Metro easier especially when passengers are not within walking distance of a station.

There are car parks at several stations letting you switch easily from car to the train or Metro to avoid city centre traffic jams, or any trouble finding a parking space.

Metro has just over 3,500 car parking spaces at stations and is expanding this further at Callerton.

Any park and ride initiatives will include consideration of cycle users. The provision of Park and Ride may offer benefits to more rural communities as part of potential rural transport hubs at stations.

Safety and security

Shorter and safer access routes to Rail and Metro stations will improve levels of safety and security for users. Improved levels of safety and security will help to reduce the likelihood of incidents and increase the number of network users.

Physical impediments

Improved integration between local rail, Metro and other forms of transport must include physical measures on the ground which will make it easier and quicker for passengers to interchange with bus services, park their cars or bicycles at rail stations or more generally allow pedestrians to have improved access both into and between stations and platforms.

Station design standards as well as proposals to improve the layout of existing stations will be considered. This will involve consultation with local users and community stakeholders.

Active Travel

We want to see the provision of suitable routes to and from our stations (Metro and local rail), coupled with secure cycle parking and where practicable on board cycle use.

We want to help to encourage a modal shift to public transport with could result in personal health and fitness benefits resulting from increased exercise levels relative to car use. A high proportion of our passengers walk or cycle to Metro and local rail stations. We are planning to improve access to our stations through a 'healthy streets' approach.

We want to develop the carriage of cycles on trains, where practicable. The new Metro fleet will make it easier for people to take bikes on trains and allow Nexus to expand and make permanent its current long-term trial of bike access. We want to ensure users have access to substantial cycle parking facilities which are based on best practice principles in terms of security and design. This would include consideration of adapted cycles for people with disabilities. This could encourage more people to cycle to and from their local station.

Timing and coordination

Whilst acknowledging that there are wider network considerations, public transport connections at key interchange stations must be made as effortless as possible, especially if certain services operate hourly or not to a regular pattern. We must also consider and address uneven rail stopping patterns and adjust timetables so people can easily connect between buses, Metros and trains. This will significantly reduce passenger wait times and improve overall journey times. The capability to run a 10 minute frequency on Metro, as part of Metro Flow, will improve integration and reduce waiting times for passengers.

As part of the region's Bus Service Improvement Plan (BSIP) proposals 'Connect' will be the network of socially and economically necessary links between the local, sub-regional and regional centres in our area, complementing the rail, Metro and new interurban express bus services.

In addition, there will be more early morning, evening, and overnight bus services as well as better connections beyond our boundaries.

Fares & ticketing

Integration of ticketing across the whole public transport network aims to make fares systems more equitable and simpler to use for all passengers across the North. This will improve customer experiences and in turn attract more users to the network. Work is progressing to enable full fares and ticketing integration on the Northumberland Line between the Metro and national rail networks, including ticketing, retailing and settlement arrangements. Fares would be based on the Tyne & Wear Metro fare zones, thus facilitating ticketing integration between Metro and Northumberland Line services. We will seek to build on this approach for other local rail lines. Pay As You Go journeys will be expanded to make millions more trips straightforward. Digital tickets across the network for a fully integrated ticketing offer to include local rail, Metro and bus services under the one system.

Information systems

Metro plans to invest £16m up to 2025 to provide improved real-time information including new screens and online app-based solutions, better interfaces with the Urban Traffic Management Control Centre and closer integration with data feeds produced by National Rail.

An Intelligent Transport System (ITS) scheme is being delivered for Real Time Passenger Information (RTPI). Automatic Vehicle Location (AVL) data can be used in combination with data from Metro and rail to feed all related Real Time Passenger Information (RTPI) infrastructure in our integrated transport system.

The region's Bus Service Improvement Plan (BSIP) proposes simple and intuitive information to make buses easy to understand and use, with improved integration with Metro and other rail services. Under the proposals, all interchanges and rail stations will be supported with multi-modal passenger information, showing real-time information about connecting journeys.

Special events

We need an integrated network that has the flexibility to meet local spikes in passenger demand. Our region is fortunate to have some major event venues and to hold significant annual special events including the Great North Run and Sunderland Air Show. Well integrated public transport and particularly rail and Metro services play a massive part in the planning and successful operation of such events.

Stations and Interchanges and park and ride

Stations and particularly interchanges are the focal points of a well-integrated network. We have mentioned the importance of stations in terms of accessibility, safety and the need for good facilities. Stations should look outwards as well as inwards and we will seek greater community involvement and benefits from stations and their assets.

Under the BSIP proposals a strategic plan will be developed to select 'hub' shelters that can serve as a community focus for interchange opportunities, between bus routes, with cycling and walking, rail, ferry, Metro and our Pocket Park & Ride and Kiss & Ride. This will open up parts of the region which currently do not have access to the rail network, and increase modal share.

Community Rail Partnerships (CRPs)

Community Rail Partnerships are the key mechanism by which more local community involvement in rail is encouraged. Since the inception of the CRP idea numerous successful partnerships are now in operation. This includes two within our area, the Bishop Line CRP which covers the line from Bishop Auckland to Darlington and the Tyne Valley CRP which covers the line from Newcastle to Carlisle.

Both these partnerships have been proactive in promoting their respective lines and increasing ridership. CRP members have a wealth of knowledge, strong community ties and can act as the eyes and ears of the rail network.

How improved integration will meet our objectives

The Transport Plan set out a target to have a properly integrated and efficient public transport network across the whole of our region, including simpler fares and ticketing, easily available and accurate travel information and seamless interchange between different forms of transport by 2035. The ambition is to create one, total network approach, aligning different types of transport together. We want to create a transport network where rail, Metro, bus, cycling and walking work together to better connect all of our communities and increase modal share.

Through delivery of the NERMS we will work to improve integration of local rail and Metro by:

- Working with GBR to seek greater influence over local rail to match the flexibility and accountability of Metro.
- Coordinating services and improving interchange between all modes of transport.
- Integrating fares and ticketing across rail, Metro and bus.

13. Measures of success – key performance indicators

We have developed a set of Key Performance Indicators (KPIs) to monitor how we are meeting our objectives in this strategy.

In this respect they can be thought of as a cross-cutting set of indicators showing the direction of travel that our strategy needs to achieve to deliver our vision and objectives. We have developed these KPIs to test whether we are moving in the right direction over the coming years, to ensure that rail and Metro play a key part in helping the region to achieve its wider transport objectives

We believe that by following this strategy, we can transition the number of journeys people make onto more sustainable and public transport modes such as rail and Metro. This will drive our economy and improve our environment, achieving our vision and objectives by 2035. Our proposed KPIs have been prioritised based on what we aim to achieve over the period to 2035. This following section sets them out in detail.

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Between TOCs, there are different methods of collecting data e.g., Northern satisfaction is measured as a percentage whereas Nexus/Metro satisfaction scores are a score out of ten.

Appealing sustainable choices

Overall passenger usage

Metro – 680,000 Journeys pw
NERMS area stations - 9,904,258 (19/20)

- A key part of this strategy is to grow the use of local rail and Metro services to help tackle the challenges set out in the strategy.
- We will measure annual passenger flows using existing and any enhanced data collection sources.
- MEASURED ANNUALLY

Overcoming Inequality and Growing our Economy

Access to key NPIER sites by Metro and (local) Rail

Baseline data to be established

- The local rail and Metro systems in the North East play a key part in supporting the local economy and ensuring that people have access to employment in the region. The strategy aims to make sure that existing access is maintained, and also new access opportunities are explored.
- We will measure the increased access to employment sites by rail and Metro within 30 minutes and 60 minutes of a station.
- MEASURED ON A 5 YEAR BASIS

Increasing economic value of Metro and (local) Rail to the North East

Measured as £224m GVA in a 2019 study

- We aim to refresh this work on a 5 year basis.
- If each journey was worth £8.50 in 2019 the total GVA figure should grow in the years ahead.
- MEASURED ON A 5 YEAR BASIS

Appealing sustainable choices

Access to stations

Baseline data to be measured in house for stations

- Increasing the number of people who have access to Metro and (local) Rail so that the Metro is a more appealing choice to travel rather than individuals relying on or turning to private vehicles as a first choice.
- We will measure the number of households within 1200m of a local rail or Metro station through the use of a mapping tool.
- MEASURED ANNUALLY

What do you think?

Passenger satisfaction

TOCs – 75% (Transport focus average for 2020)
Metro – 7.75 / 10 (Result for September 2020)

- Customer satisfaction is one of the key elements to be measured to indicate a positive direction of travel of improvements in the rail and Metro networks of the North East. By measuring passenger satisfaction, we can aim to retain current passengers but also encourage new passengers through promoting positive experiences.
- Measured with the continuation of public forums and surveys – data can be provided by Nexus for Metro; Transport Focus for rail generally and we will work with the train operators to obtain targetted data for local rail.
- Nexus release customer satisfaction data monthly and both the TOCs in our area have shown commitment to improving passenger satisfaction with the introduction of new customer interaction methods.
- MEASURED ANNUALLY

Carbon-neutral rail and Metro in the North East

North East Fleet

TOCs: 100% Diesel | Metro: 100% Electric

- An important step in reducing the effect greenhouse gases and polluting gases in the North East is by reducing the number of vehicles using diesel.
- We will compare the number of non-diesels, updated trains and alternative fuel trains against the current fleet to see a trend towards a carbon neutral trains.
- MEASURED ON A 5 YEAR BASIS

Carbon-neutral rail and Metro in the North East

Rail freight uptake

Rail freight share 12% (2016)

- 1 rail based freight train can take up to 75 HGVs off the road, vastly reducing the gases emitted on the roads and also freeing up road space leading to less congestion.
- Using existing metrics we will measure the rail freight modal share against lorry use.
- MEASURED ON A 5 YEAR BASIS

Rail and Metro for a healthier North East

Walking and Cycling to stations

Metro – 81.8% walk to stations & 0.2% cycle to stations

Northern – 42.1% walk to stations
& 2.2% cycle to stations

- We wish to build rail and Metro into the active journeys that people make in the North East. To do this, we will promote hybrid journeys- pairing rail and Metro with walking and cycling for those traveling further afield. We aim to do this by improving safer routes to stations, increasing the availability of cycle infrastructure at stations and on the trains themselves.
- We will measure the number of people cycling to stations.
- We will measure the number of stations that meet 'Healthy streets' accessibility standards.
- MEASURED ANNUALLY

Safe and secure public transport

Safe and Secure travel

Metro: All 60 metro stations are fitted with CCTV, Full platform lighting and help points on the platform – Security survey score: 70.1

Northern: 3 Stations have help points, 23 have platform CCTV and all stations have platform lighting but with secluded areas – 68% satisfied with personal safety in station

- We know that people will not travel on a rail system if they do not feel safe. Safety is paramount on any stage of the journey, from the journey to the station, the time spent at the station, and on-board a train.
- We will measure the perception of safety on the networks using passenger surveys.
- MEASURED ANNUALLY

Appealing sustainable choices

Punctuality/ Reliability of the network

TOCs - 90% to 3 minutes / 98% to 15 minutes
Metro 87.50% - % of trains that leave 'on time'

- For metro data, 'On time' is defined as between 29 seconds before and 3 mins after the timetable time.
- Punctuality will be measured using data provided by the train operators and Nexus. The data will be broken down by lines of route.
- We will measure reliability by recording the number of service cancellations and changes to scheduled services.
- MEASURED ANNUALLY

Affordability/ Value for Money

TOCs: 52% | Metro: 6.6/10

- Affordability of the network comes under constant pressure as it is often one of the key drivers of poor customer feedback. Therefore it is key to measure public perception.
- We will measure, through passenger surveys, the public perception of whether services are value for money and affordable.
- MEASURED ANNUALLY

Monitoring and evaluation

To ensure that our plan's policies and interventions are helping to meet our objectives, we will monitor and evaluate the performance of our Key Performance Indicators and use the data to enable us to adjust our approach if necessary.

Performance will be reported to the Joint Transport Committee at key points.

Individual projects will be required to submit Monitoring and Evaluation Plans within the business cases at stage gates of the framework.

These projects should undertake a detailed impact assessment of the transport, employment and economic impacts of investment in line with DfT guidance. Results will help us better understand the overall plan's performance against the KPIs. To make best use of our local and national data assets Transport North East will continue to work in partnership with:

- The seven local authorities in our region;
- Nexus;
- Regional Road Safety Resource;
- The North East Local Enterprise Partnership.

Central Government Sources:

- Department for Transport;
- the Department of Business, Energy and Industrial Strategy;
- the Office for National Statistics; and
- Public Health England;
- Government Office for Science
- Transport for the North; and
- Public Transport Operators.

Targets

Funding has yet to be guaranteed from government and other sources for the schemes which will deliver improved performance in the KPIs. Once funding is received, we will consider what targets can be introduced for these measures.

14. Investing in rail and Metro – delivering our strategy

Introduction

To realise the ambitions of this strategy, Transport North East and Nexus will work in collaboration with central government, Network Rail (and in time Great British Railways), Transport for the North, transport operators, our constituent Local Authorities, the North East LEP, businesses, the third sector (particularly the Community Rail Partnerships), and crucially local people.

Our plans for investment have been developed by the partnership working that led to the creation of the North East Transport Plan. These proposals have been embedded into the strategy and expanded on to show how they meet Transport Plan and Rail and Metro strategy objectives.

All improvements that we deliver will be fully developed as projects in accordance with the region's assurance framework or that of partners. This will demonstrate the propositions are socially acceptable, economically viable and deliverable as well as supporting the achievement of objectives nationally, regionally and locally.

Identified programme

Our programme of investments stems from the North East Transport Plan. This sets out a live programme of interventions. All of these interventions were initially tested to ensure that they are consistent with Transport Plan objectives and that they have a degree of deliverability.

But that is not the end of the process: they will all be subject to more rigorous testing and appraisal and will only be delivered where they have demonstrated through detailed business case development so that they can appropriately contribute towards the delivery of the objectives. If schemes cannot contribute towards objectives and don't support the Transport Plan, they will not be taken forward for delivery.

This strategy has utilised the Transport Plan pipeline and Nexus' capital pipeline schemes and has identified schemes that will support Rail and Metro Strategy objectives from the above work packages.

In turn these are presented as schemes that can be delivered in varying time horizons, these are:

- **Schemes for delivery in the next five years – requiring funding to be accelerated:** These are either smaller-scale schemes that can be quickly developed and delivered or larger schemes at an advanced stage of development. Accelerating development funding will move them to 'Shovel Ready' status.
- **Schemes for development and delivery in the next ten years:** These again will be a programme of smaller-schemes coupled with ambitious schemes requiring development funding to bring them to an advanced stage and move to delivery; and
- **Schemes for development and delivery beyond 10 years:** These ambitious schemes are long-term visions which require development funding to bring them to an advanced stage and move to delivery.

Our investments surround:

- A mix of customer experience enhancements.
- New infrastructure (to extend the reach of local rail and Metro and provide enhanced regional and national connectivity).
- Asset maintenance and upgrades (to future proof the network).
- Cleaner and greener trains and Metros.
- More accessible and welcoming stations.

This programme has been further tested to exemplify how it meets the objectives and the Key Performance Indicators of the Rail and Metro Strategy. The primary objective of each scheme has been identified. This is set out in the table overleaf.

Delivery options

This programme is broadly split into three delivery routes:

1. Projects delivered by Transport North East and constituent authorities.
2. Schemes specific to Metro infrastructure, delivered by Nexus.
3. Rail schemes delivered by Great British Railways on behalf of central government or any subsidiary bodies.

The remainder of this chapter is split into the three delivery routes and the actions that Transport North East will take in order to realise this ambition.

Projects delivered by Transport North East and constituent authorities

The Transport North East Programme team will manage this programme and will be responsible for sponsoring the development of various schemes and projects that support this plan, as well as a series of region-wide initiatives.

Implementation of the interventions that are regional initiatives are within the region’s control and will be delivered in accordance with the region’s programme management and assurance frameworks.

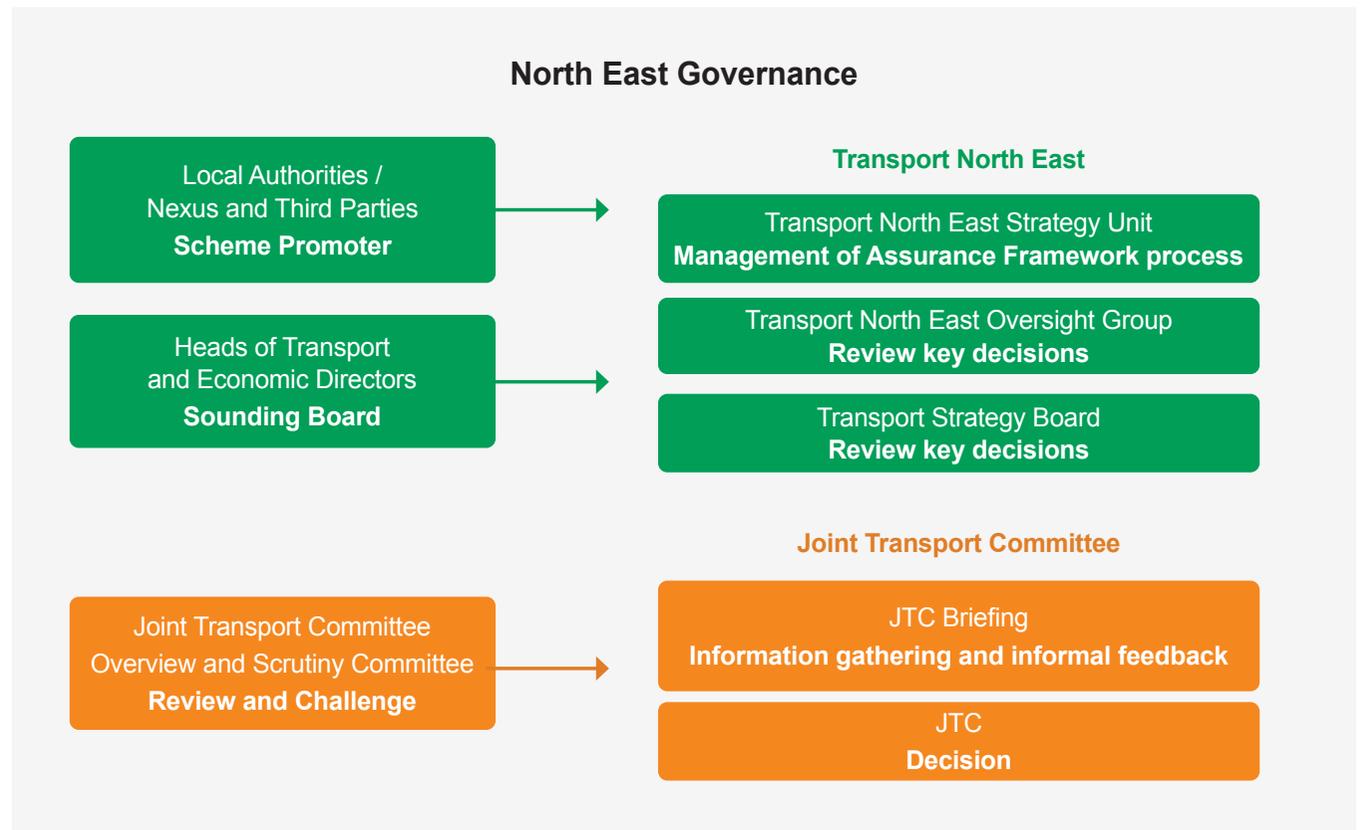
Transport North East’s role is varied in some cases we will act as the promoter of schemes and will be responsible for delivery and in other circumstances delivery may be undertaken by another organisation, for example our constituent Local Authorities with Transport North East securing funding at a regional-scale and providing technical assistance as required.

Programme management and assurance

The funding required to realise the ambitions of this strategy is substantial, however the region is fortunate to have a well-established and ratified Transport Assurance Framework in place which is proportionate to the nature, scale and value of schemes.

That has guided the delivery of our devolved £270 million Local Growth Fund for the last six

years and was flexible enough to deliver our Transforming Cities Fund programme. The heart of our Transport Assurance Framework is a scalable series of gateways that provide our governance structure with the confidence that each component investment is delivering on the requirements of the programme and delivering the NERMS and Transport Plan outcomes that have been ascribed to that investment.



Our assurance framework has been developed in stages. Each stage represents a gateway in the process. Approvals and reviews are applied at each stage of this process.

Project Delivery Lifecycle



Concept	Transport improvements of any kind can enter the programme as concepts (any idea can be considered)
Approved gateway, proceed to Objective assessment	
Objective Assessment	Schemes are assessed based on the transport plan objectives and those of individual funding opportunities with a positive and balanced view sought.
Approved gateway, proceed to Business Case Development assessment	
Business Case Development	Some schemes are subject to the development of business cases which are developed in line with the latest government guidance / the region's assurance framework. These include environmental and economic appraisals of the impact of schemes
Approved gateway, proceed to Consultation and powers assessment	
Consultation and powers	Some schemes may require consents or powers such as planning permission or traffic regulation changes, this will be sought and members of the public will have the chance to comment and influence plans
Approved gateway, proceed to Reporting assessment	
Reporting	Regular reporting to programme board and members of the Joint Transport Committee is undertaken when decisions are to be taken.
Approved gateway, proceed to Funding and Delivery assessment	
Funding and Delivery	Most schemes require funding to enable their delivery, this is only confirmed once the scheme is developed all risks have been considered and the case has been made. Funding will come from a variety of sources.
Approved gateway, proceed to Monitoring and Evaluation assessment	
Monitoring and Evaluation	The Transport Plan will be monitored and evaluated alongside the individual scheme components to ensure we are addressing the objectives.
Updates	Our programme of interventions will be updated continuously with new ideas added to reflect the most pressing issues facing the region, ensuring transport investment is agile to change.

Sequencing and prioritisation

To ensure the strategy demonstrates a robust pipeline, the interventions selected have initially been appraised against the plan's vision and objectives to ensure strategic fit. The interventions that form part of the pipeline for the plan have to be developed to Stage 0 in accordance with the region's assurance framework. This ensures a consistent level of detail is available for all schemes.

Sequencing has been developed into a series of five-year blocks over the lifetime of this plan, linked to stages of development through the region's Transport Assurance Framework.

Crucially, where there is evidence around the need for a project to be developed in a certain timeframe to realise wider benefits, this has been reflected in the framework.

The North East has a track record in selecting and prioritising projects which balance objectives around the economy, environment and society. It is important that the plan is flexible to respond to funding opportunities and as such a prioritisation process has been designed incorporating the assessment against the vision and objectives that can be deployed based on the fund that is available.

Costs and funding

The main source of funding for transport is from central government. Previous rounds of the Local Growth Fund (LGF) and Transforming Cities Fund show how the region can deliver significant packages of investment. The plan will be refreshed on a regular basis.

The exact costs will vary and will need to be carefully monitored. Based on our latest estimates, a funding requirement of circa £783m worth of capital investment would fund the schemes highlighted in this strategy with a further £120m revenue to maintain and operate infrastructure and services (all our schemes are set out in the tables and forthcoming maps). This figure excludes the estimated cost of £2.5bn for all Metro and rail extensions included in this strategy. The extension proposals require further refinement and a separate funding strategy.

This will grow as further schemes are developed over the lifetime of the Plan. We believe this to be a fair share of national transport funding which should be allocated to our region from central government in the period 2022-2035.

Transport North East works with and will continue to work with government to secure funding through competition based funding and longer-term devolved settlements to unlock schemes.

For certain investments, developer contributions will form a viable part of the financial model. In others land value capture could be a viable proposition. We will work with the individual authorities to secure appropriate levels of contributions or works in kind where the investment is directly related to the development and is needed to mitigate the impact of the scheme in question.

Realising the ambition of this strategy will be partially reliant on the ability to secure the necessary powers and consents for delivery. The appropriate power and consent route will be determined through the development of each project in full consultation with the local planning authority/DfT/Planning Inspectorate.

Alternative funding possibilities will be investigated on a case by case basis. These include.

- Borrowing against future fares revenue, where there is demonstrable demand evidenced by a sound business case.
- Other regional funding streams, such as the Levelling up Fund.
- UK Infrastructure Bank loan finance.
- Commercial sponsorship opportunities.
- Local government funding.

Example Initiatives:

North East Rail Concession, Improved Facilities and information at stations.

Schemes specific to Metro infrastructure, delivered by Nexus

Metro is a vital public service which will cost £101.3m to operate in 2020/21. Whilst almost half of Metro's total operating costs are covered by fare income, it places heavy reliance on a sizeable amount of public subsidy in the form of revenue grant from central government and the NE Joint Transport Committee (circa £63.7m (made up of Covid Emergency grants, Metro Rail Grant and BSOG, ferry funding and NESTI) and circa £59m respectively in 2020/21). In addition, capital investment in Metro has traditionally been funded from capital grants is also financed from central government. Looking ahead, it will be important to secure an on-going long-term commitment to a continuation of this level of public subsidy, and discussions are underway to understand the government's position.

Metro travel was significantly impacted by the Covid-19 lockdown and April 2020 saw passenger levels fall by 95.5% in comparison to the same month in 2019. In mid-2020, the system was operating at a loss of approximately £0.9m per week, excluding costs associated with making the system Covid secure. However, passenger numbers have started to recover (albeit to around 87%

of normal mobility levels) than the local rail services. The funding model for operation, maintenance and renewal of the Metro network continues to be challenging and multi-year settlements are required as part of the funding model to place operational costs on a sustainable footing.

The cost of improving and expanding the Metro system will also be significant. Although the options identified in this strategy aim to explore the opportunity of using existing assets wherever possible, nevertheless the capital construction costs of any new railway lines are likely to run in the hundreds of millions of pounds, and new operating costs will be added to existing levels of expenditure. To achieve expansion of the system, investment decisions by Network Rail, Nexus and Local Authorities will need to be aligned and a clear demand identified for each addition to the network.

Programme management and assurance

In some cases, funding for the improvement of the network will be secured by Transport North East for delivery in this scenario the assurance process noted above will be triggered. In other scenarios direct grants will be allocated to Nexus for funding management and delivery.

Nexus has an inhouse project management function and process and reports directly to the Joint Transport Committee including the Tyne and Wear Sub-Committee on the progress of scheme delivery. Delivery is undertaken in accordance with the Corporate Plan which provides the framework for Nexus to deliver its services and prepare for the future.

Costs and funding

The Nexus budget is set and monitored by the Joint Transport Committee (JTC). Policy is set and activities overseen principally by the Joint Transport Committee's Tyne and Wear Sub-Committee.

In January 2020, the NECA agreed a budget and issued a transport levy to the constituent councils within Tyne and Wear so as to meet a proportion of its liabilities/expenses for 2020/21. The apportionment of the levy is calculated by reference to the total resident population of each Council. This is done in accordance with Section 7(5) of the Transport Levying Bodies Regulations 1992. In the case of Tyne and Wear, the NECA and NTCA set a levy for the financial year 2020/21 of £59.0m. This levy funding pays for the local transport Nexus provides including free or cheaper concessionary travel, subsidised bus services (about 10% of routes in Tyne and

Wear including school buses), bus stations and stops, the Shields Ferry and specialist services for disabled people.

Metro does not make a profit and all the revenue from it is reinvested in providing a service for local people.

Capital and major maintenance grants are therefore needed to deliver major investments, and this can come in the form of devolved regional funds, grants direct to Nexus, developer contributions and similar. Based on our latest estimates, a funding requirement of circa £426m worth of capital investment would fund the schemes highlighted in this strategy with a further £250m revenue to maintain and operate infrastructure and services.

Example Initiatives:

Station refurbishments, maintenance projects, new stations and payment/technology upgrades.

Rail schemes delivered by train operating companies (Great British Railways), on behalf of central government or any subsidiary bodies

Investing in and supporting the transport assets that enable us to connect with the rest of the world has never been a higher priority for the North East. Quality infrastructure will make for reliable, fast journeys with improved connectivity into national and international freight and passenger networks. This network will be the enabler to sustainable growth and opportunity, and to the North East being an outward-looking economy attracting trade, investment and visitors from across Europe and the world.

Following the publication of the government's Integrated Rail Plan, we will continue with our ambitious plans for more, faster and better rail connectivity to the rest of the UK and we will continue to work closely with the government, and Network Rail to seek maximum benefits for our region.

Programme management and assurance

As we have identified projects in this plan that are national or pan-Northern in nature. To deliver these we will work with organisations including Transport for the North (TfN), Northern Acceleration Council, Network Rail and others to secure investment.

The North East and North of Tyne Combined Authorities are represented on TfN's board and continue to make the case for investment in pan Northern Infrastructure including devolved budgets to TfN for development and delivery.

The region is immersed in the work of the Union Connectivity Review and Northern Transport Acceleration Council as mechanisms to oversee progress in the development and delivery of schemes – these influence the spending priorities of Great British Railways.

The new public body Great British Railways was announced by HM Government in May 2021 as a body to integrate the railways and deliver passenger-focused travel with simpler, modern fares and reliable service. Once established it will deliver on the priorities of the Williams-Shapps Plan for Rail and will assume the work of Network Rail.

Costs and funding

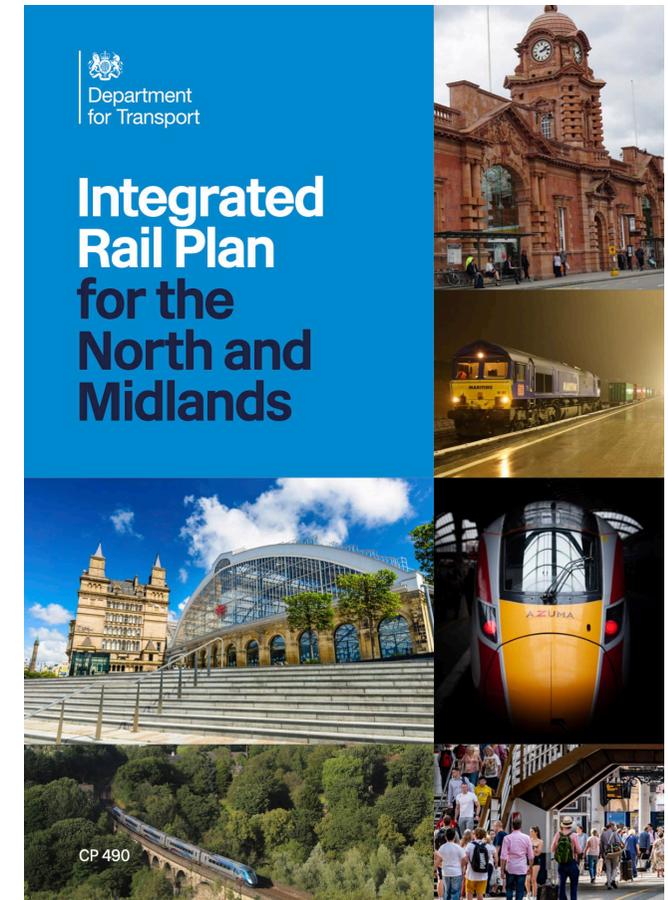
The costs of the package of investment identified in this strategy that will be delivered by bodies on behalf of central government and its subsidiaries including rail operating companies is substantial and will be refined as projects are developed in detail by various bodies.

The viable source of funding for such projects is at a national level. Following publication of the government's Integrated Rail Plan in November 2021, we are now working with Network Rail to secure an affordable, deliverable, fully costed pipeline of core investments to improve rail in the North.

Conclusion

Transport North East has set out a range of initiatives within this plan that will meet the objectives of this strategy and our Transport Plan and get us to our vision of moving to a green, healthy, dynamic and thriving North East. We will keep this pipeline updated and have plans in place to develop schemes, so they are ready for delivery.

We will actively investigate all options for the future financing of these projects including much needed maintenance and revenue support that offer the best combination of security, flexibility and value for public money.



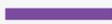
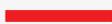
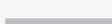
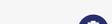
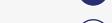
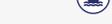
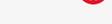
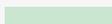
The UK government's Integrated Rail Plan was published in November 2021.

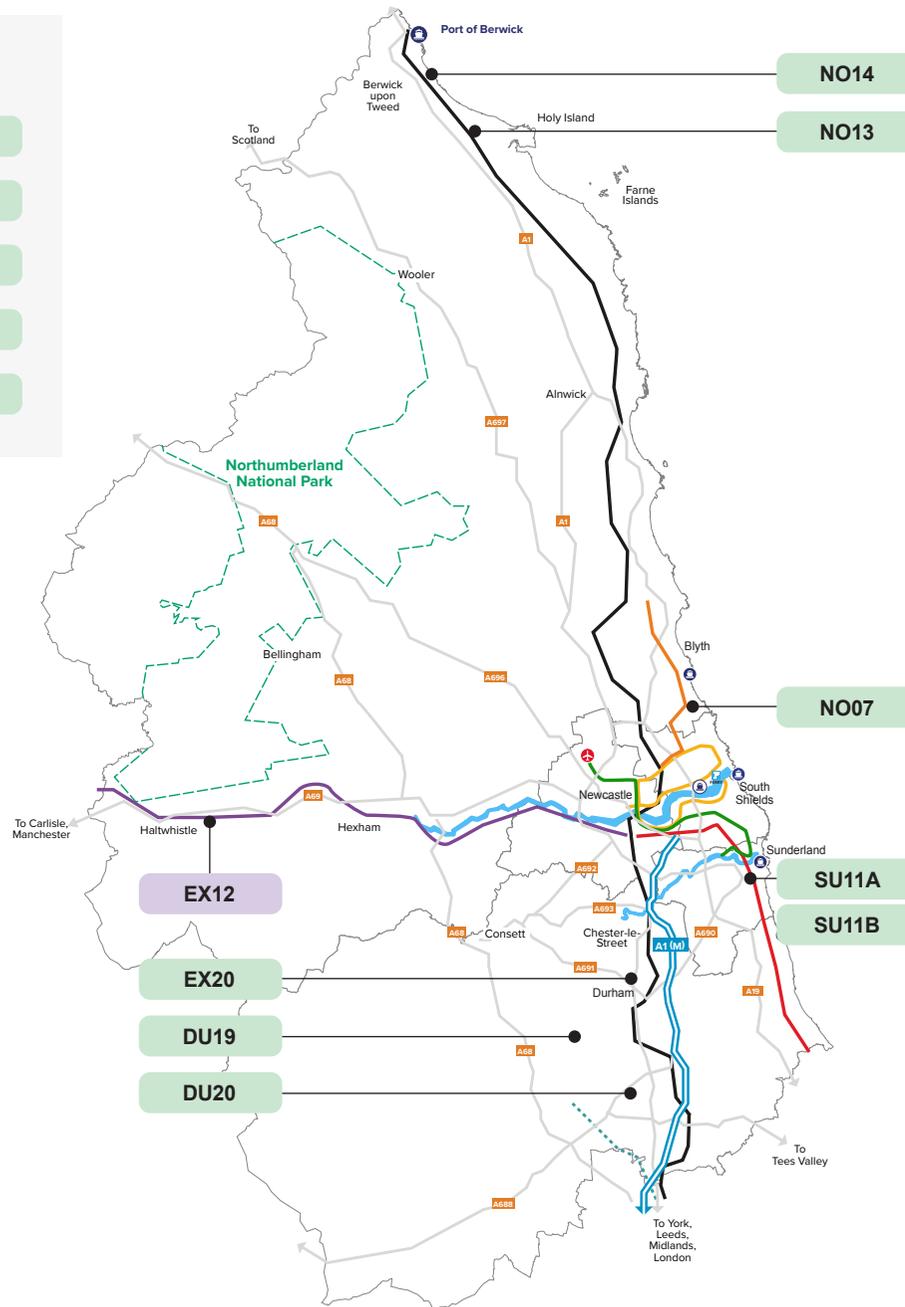
15. Delivery plan

Regionwide schemes:

- TNE10A
- TNE10B
- TNE16
- EX16
- TNE17
- EX17
- EX18
- EX19
- TNE22
- EX22
- EX23
- EX24
- EX25
- NX29
- EX40

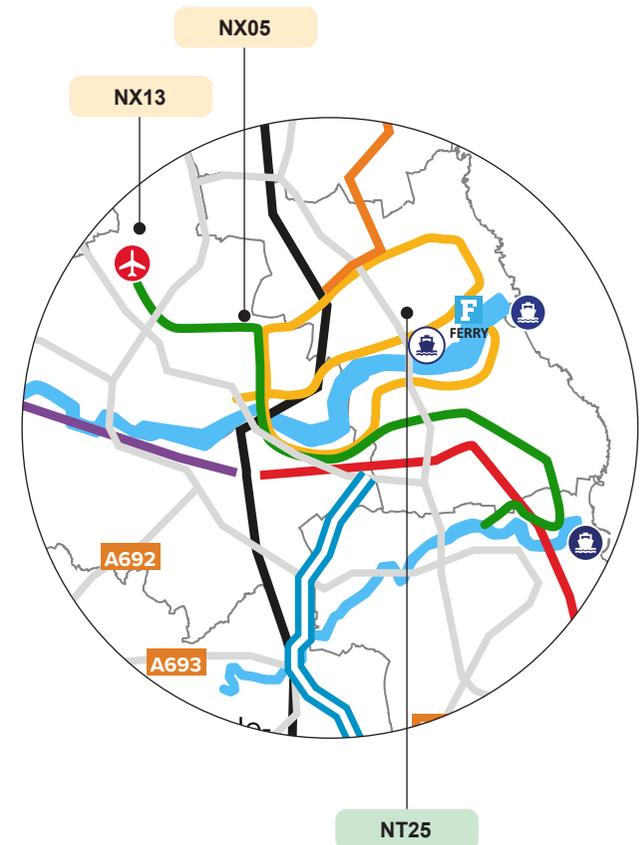
Map key:

-  Tyne and Wear Metro
-  Shields Ferry
-  East Coast Main Line
-  Tyne Valley Line
-  Northumberland Line
-  Durham Coast Line
-  Motorway
-  Major Road Network
-  National Park
-  Ports
-  Port of Tyne Ferry Terminal
-  Newcastle International Airport
-  TNE/LAs
-  Network Rail
-  Nexus



Metro wide schemes:

- NX08
- NX10
- NX11
- NX15
- NX16
- NX17
- NX19
- NX21
- NX26
- NX28
- NX31



Scheme number	Scheme name	Promoter	Secondary Promoter	Scheme description	Capital / Revenue
NX05	Regent Centre Interchange Upgrade	Nexus	Newcastle City Council	Refurbishment of the Metro area and the upgrading of the bus area with five new waiting shelters and removal of the canopy over the roadway outside the station entrance, improvements to the car park	Capital
NO07	Northumberland Line - Opening	Northumberland County Council	Network Rail	Upgrade and passenger service re-instatement	Capital
EX16	Improving Rail Connectivity in Northumberland	Network Rail		Enhancements to service frequency in Northumberland on ECML	Capital
EX17	Expanding the number and role of Community' stations	Transport North East	Community Rail Bodies	Through Rail Devolution regenerate underused stations as community hubs	Capital
EX12	Tyne Valley journey time improvements	Transport North East	Network Rail	Introduce improvement to reduce the end to end journey time to be more competitive with car based journeys.	Capital
EX25	Local rail Diesel fleet replacement – regional	Northern Trains Ltd	Transport North East	Support Northern in bid to secure funding for carbon zero fleet	Capital
EX18	Delivering a North East Rail Concession	Transport North East	DfT	Work with DfT to secure local rail concession/s	Revenue
EX19	Improved facilities at information at North East stations	Transport North East	Network Rail		Capital
NX08	Enhancing Public Transport passenger information	Nexus	Operators	Addressing the perception of reliability and convenience of public transport, as highlighted through market research, through the provision of accurate and easy to access information.	Capital
NX11	Small Metro Station Upgrades systemwide	Nexus	N/A	Comprehensive refurbishment and remodelling to support Transport North East with customer experience, including accessibility, access to information, perception of safety and cleanliness, reduction in vandalism and graffiti	Capital
NX13	Airport Metro Station Refurbishment	Nexus	Newcastle Airport	Refurbishment of the station and remodelling of the ramp to ensure compliance with accessibility regulations, improved information and ticketing options	Capital
NX16	Energy-saving measures on Nexus infrastructure	Nexus	N/A	Energy-saving measures on Nexus infrastructure	Capital
EX20	Increasing local rail frequency in Durham	Transport North East	Durham County Council	Chester le Street hourly service	Capital
EX22	Rationalise local rail and Metro fares and ticketing	Transport North East	Nexus/ Northern Trains Ltd	Through Rail Devolution rationalise local 'rail ' fares and ticketing to reflect local economic reality.	Revenue
EX23	Introducing earlier and later local rail services systemwide	Transport North East	Northern Trains Ltd	Achieve minimum standards regarding first and last train times to match working patterns and leisure needs,	Revenue
EX24	Small scale local rail reliability measures networkwide	Transport North East	TfN	Through line of route improvements plans implement small scale improvements to improve service reliability.	Capital
NX19	Metro Essential renewals (post 2025)	Nexus		Programme of essential renewal of the Metro infrastructure post 2025 and the end of the current funding arrangement (10 year programme) Also includes £5m for track improvement works at Howdon Viaduct	Revenue

Scheme number	Scheme name	Promoter	Secondary Promoter	Scheme description	Capital / Revenue
NX21	Upgrade of Switchgear at Nexus Substations	Nexus		Upgrade of switchgear at substations	Capital
NX26	Development of a Multimodal smart ticketing solution for the region	Nexus		Development and implementation of a multi modal smart product through either smart cards or EMV	Capital
TNE22	Revenue and Maintenance Funding for Metro, Bus, Ferry and Highways	Transport North East		Revenue funding to recover from Covid 19 impacts on Metro, Ferry, Bus	Revenue
NX28	Bringing contactless payment to Metro	Nexus		To make Metro travel simple and convenient by introducing the ability to pay by contactless card or device with capped daily fares being charged. This would obviate the need to visit a ticket machine reducing the risk from any contamination introduced by touching. This introduces the ability to turn up and go without needing to make any ticketing provision in advance. For this to be introduced there would need to be investment in hardware at the gatelines and validators and also the back office to collect the taps and calculate and collect the best value fare.	Capital
DU19	Burnigill Bank ECML Maintenance	Durham County Council		Structural repairs related to an ongoing landslip and subsidence. Protects the highway and the ECML from ongoing damage. If there was a closure would divert traffic on a significant rerouting via the A167 and A690, which are both part of the MRN. Also through the Nevilles Cross junction which is congested and is designated within the AQMA	Revenue
DU20	Reopening of Ferryhill Line and Stillington Line to passenger services to Teesside.	Durham County Council	Network Rail	Reopening of Ferryhill Station. SOBC submitted. Eventual scheme could be £12m.	Capital
NX31	New payment technologies for Metro	Nexus		New payment technology to accelerate the introduction of cashless and contactless payment options which will minimise contact with ticket machines, barriers and physical cash.	Capital
TNE16	Customer Experience Strategy	Transport North East	Nexus / Northern Trains Ltd	<p>A customers journey starts before they have even left the house. To make effective decisions customers we need to both provide the incentives to travel sustainably and break down the barriers from which to do so. We intend to develop a strategy which develops a high level accessibility standard for the region together with knitting together all aspects of the journey storyboard, setting expectations around how the transport plan will operate. A linked idea is that the strategy will be supported by funds in order to garner new ideas and make changes to the network to improve the quality and access of the system.</p> <p>This strategy will set out a framework for ideas around:</p> <ol style="list-style-type: none"> 1) Information and Ticketing. 2) Access to stations the public transport network. 3) Safety, access and security on the public transport network. 4) Access to destinations. <p>The second component will be built around an access audit framework with an application to a number of case study locations.</p>	Capital

Scheme number	Scheme name	Promoter	Secondary Promoter	Scheme description	Capital / Revenue
NX29	Delivery of North East Connect	Transport North East	Northern Trains Ltd	Working with Northern Trains and Metro to secure an additional semi fast service on the Durham Coast line. Sponsoring a programme to organize the delivery of North East Connect, ECML calling patterns, Bishop and Tyne Valley journey times	Capital
TNE17	Freight Gauge Clearance	Transport North East	Network Rail	Work closely with Network Rail and private sector to improve gauge clearance along freight routes	Capital
TNE10A	Comprehensive ticketing and information package - including single smart transport payment system	Transport North East		Sponsor the delivery of a Comprehensive cross modal ticketing, information and planning services, solution built in partnership with authorities and operators; Build on and integrate available data sources to help travellers and staff better manage and plan journeys on our network in real time; Enhance back office systems including UTMC technologies to build databases and tools for transport planners to continually enhance the offer to travellers; Deliver a single smart transport payment system that works across all modes and incentivises sustainable travel choices; Adopt strategies and technologies to reduce the cost of maintaining and operating of ticketing and information assets whilst enhancing customer experience.	Capital
TNE10B	Regionwide mapping and realtime information package for public transport	Transport North East	Nexus and Northern Trains Ltd	Utilise state-of-the-art mapping, real time information and price comparators to give a full range of transport options for users; provide users with information on the environmental impact of their transport choices; able to be extended to retailers and other commercial providers to allow discounts for using sustainable forms of travel	Capital
NO13	Belford Station	Northumberland County Council	Network Rail	The proposal is to construct a new station to serve the village of Belford and the surrounding catchment area of north Northumberland. Since the previous station closed demand for travel from Belford and the surrounding area	Capital
NO14	Enhanced service between Berwick and Newcastle	Northumberland County Council	Network Rail	The proposal is for a new hourly service to serve stations between Newcastle and Berwick-upon-Tweed on the East Coast Mainline. Currently, residents of Pegswood, Widdrington, Acklington and Chathill have a choice of just one morning commuter train and one evening return train.	Revenue
EX40	Upgrades to Active travel routes to all NE rail stations	Transport North East	All Authorities	improve walking /cycling routes to rail stations.	Capital
NX10	Increased Park and Ride at Public Transport stations and car park maintenance	Nexus		"Consideration to extending park and ride facilities at multi-modal interchanges across the North East region. Not just limited to Metro stations, but also bus / train stations. With improvements required at Hebburn, Tyne Dock, East Boldon and Fellgate within South Tyneside."	Capital
NX15	Creating Electric Vehicle charging points across Nexus car parks	Nexus	Transport North East	EV charging infrastructure at all Nexus owned car parks	Capital
NX17	New cycle parking hubs at Metro and bus stations	Nexus	N/A	Increase availability of secure cycle parking and Metro and Bus stations	Capital
SU11A	Sunderland Station Southern Ticket Hall	Sunderland City Council	Network Rail	Comprehensive Redevelopment of the Southern Ticket Hall with improved accessibility, additional station and retail facilities	Capital
SU11B	Sunderland Station Northern Ticket Hall	Sunderland City Council	Network Rail	Comprehensive Redevelopment of the Northern Ticket Hall with improved accessibility, additional station and retail facilities	Capital
NT25	Murton Gap - New Metro stations in North Tyneside	North Tyneside Council	Nexus	Development of new stations on the Northern Metro loop, and associated infrastructure/equipment, linked to key sites in the North Tyneside Local Plan (Murton Gap)	Capital

Regionwide schemes:

TNE34B

TNE36

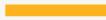
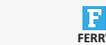
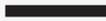
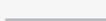
EX10

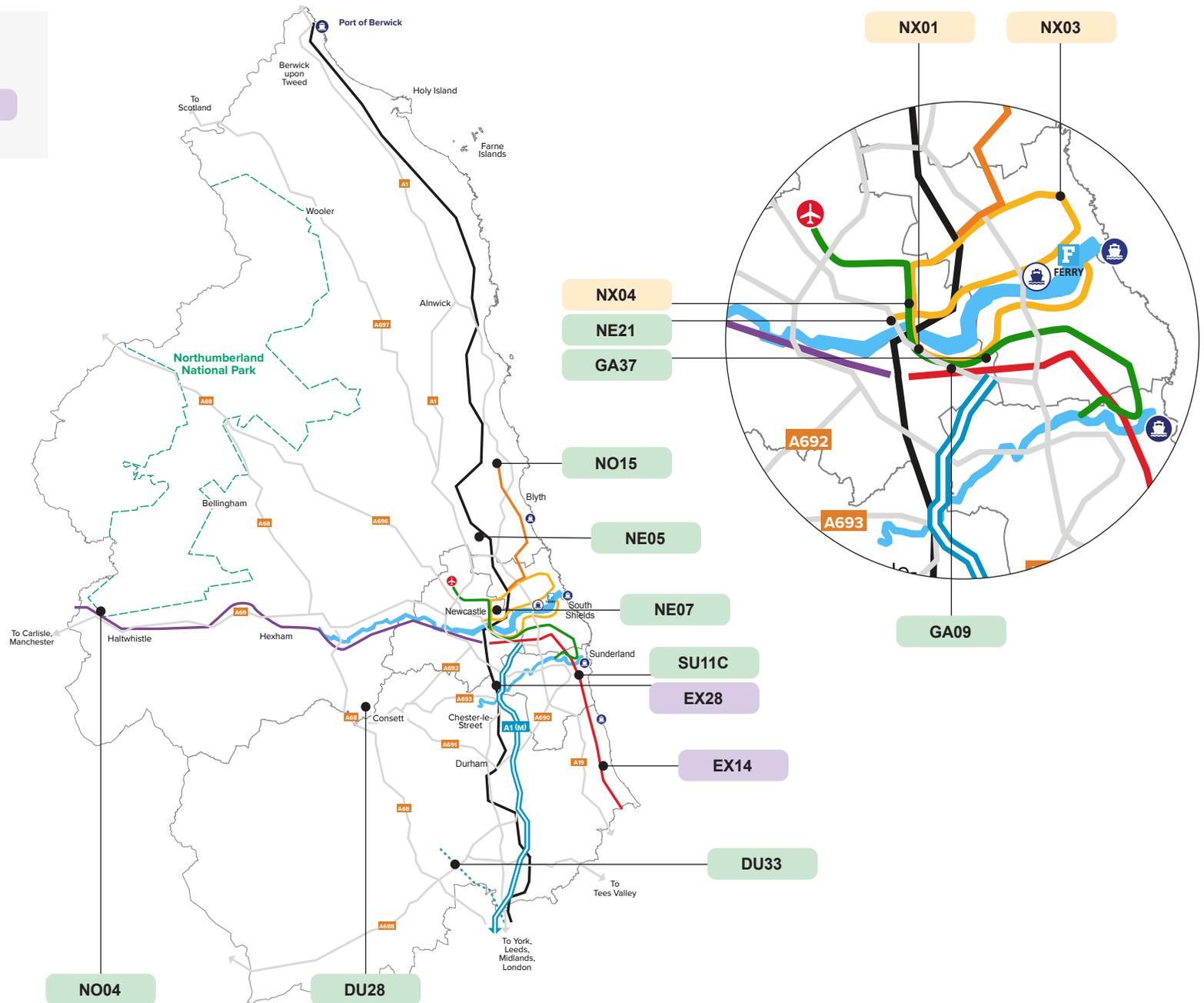
Metro wide schemes:

NX20

NX30

Map key:

-  Tyne and Wear Metro
-  Shields Ferry
-  East Coast Main Line
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-  TNE/LAs
-  Network Rail
-  Nexus



Scheme number	Scheme name	Promoter	Secondary Promoter	Scheme description	Capital / Revenue
NX03	Upgrading Heritage Stations on Tyne and Wear Metro	Nexus	All Local Authorities	Upgrading of Cullercoats, Whitley Bay, Monkseaton and West Monkseaton Metro stations with a distinctive historical lineage dating back to the North Eastern Railway/ LNER	Capital
NX04	Monument Metro Station Refurbishment	Nexus	Newcastle City Council	Refurbishment of Monument Metro station to match the standard of other recent station upgrades in Newcastle city centre	Capital
NE07	Newcastle Station	Newcastle City Council	Network Rail	Investment to unlock the potential around Newcastle Central Station including access improvements to Stephenson Quarter (Southern Entrance) Lengthening some of the bay platforms at Newcastle to enable longer trains to terminate in the station.	Capital
NO04	Gilsland Railway Station	Northumberland County Council	Network Rail	The proposal is to reopen the Gilsland Railway Station on the site of the former station.	Capital
NO05	Cramlington Station improvements	Northumberland County Council	Network Rail	Infrastructure improvements required to facilitate improved frequency of service from station and better station facilities.	Capital
SU11C	Sunderland Station capacity improvements and track layout improvements	Network Rail	Sunderland City Council	Sunderland Station and Sunderland Station track layout improvements	Capital
EX14	Durham Coast Line (route upgrade and service improvements)	Network Rail	Transport North East	Durham Coast Line (route upgrade and service improvements)	Capital
GA09	East Gateshead Station	Gateshead Council	Network Rail	Station to serve the Gateshead Quays development	Capital
NX20	Metro Signalling System upgrade	Nexus		Replacement of the Metro signalling system	Capital
NX30	New Metro Stations	Nexus		Improve access to the Metro system to those are disconnected from it. Reduce congestion on highway network. Reduce carbon emissions. Connect areas of new growth and development to the Metro network.	Capital
DU28	Public transport connectivity improvements between Consett and Tyneside	Durham County Council		Connectivity improvements along the Derwent Valley Line. SOBC submitted	Capital
TNE34B	A regional energy Package	Transport North East		Innovation - A regional energy package focused on generating energy on our transport assets, depots, stops and stations	Capital
TNE36	Metro and Local Rail Enhancements and Extensions	Transport North East		Local Rail Infrastructure Corridors	Capital
				Cobalt Link	
				South of Tyne and Wearside Loop	
				West Newcastle / Gateshead Links	
				Airport Link (using the Benton Curve)	

Scheme number	Scheme name	Promoter	Secondary Promoter	Scheme description	Capital / Revenue
EX10	High Speed Gateways in the region	Network Rail		Ensuring the region is high speed ready as high quality gateways to the region	Capital
N015	Future extensions for the Northumberland Line	Northumberland County Council	Network Rail	Improving accessibility to South East Northumberland by rail.	Capital
DU33	Darlington – Weardale Railway	Durham County Council		A rail service to reconnect isolated communities in Weardale, to the Bishop Auckland/ Newton Aycliffe/Darlington corridor, enhancing access to employment, education, health and leisure opportunities. The railway will become the framework for economic regeneration of the railway corridor, both in South Durham and Weardale, realising substantial tourism potential.	Capital
GA37	Heworth Interchange refurbishment	Nexus	Gateshead Council	Remodelling of Heworth Interchange	Capital
NX01	Gateshead Interchange Refurbishment	Nexus	Gateshead Council	Refurbishment of all elements of the interchange	Capital
EX28	Major upgrade to the East Coast Mainline	Transport for the North	Network Rail	Major upgrade via East Coast Main Line (and Leamside) reinstatement to include provision for 7/8 trains per hour	Capital
NE21	New PT Route delivered to the West of Newcastle	Newcastle City Council	Nexus	New Westbound public transport from Central Station/St James, either using Forth Banks alignment or any other	Capital

16. Conclusion

By 2035, we will achieve significant improvements in the contribution of rail and Metro towards achieving the key Transport Plan objectives. Through greater devolution of powers and funding we will improve the existing passenger experience, extend the reach of both local rail and Metro, seek freight improvements, and deliver passenger growth as part of an integrated North East public transport system. Details of the intervention proposed are included in the Delivery Plan and our success will be measured through a series of performance indicators.

Objectives	Key Commitments
 Overcoming Inequality & growing our economy	<ul style="list-style-type: none"> Extend the reach of local rail and Metro, upgrading existing networks & services, adding new routes & stations. Increase the capacity & resilience of the East Coast Main Line and Durham Coast Line improving connectivity. Ensure freight can travel sustainably by rail and delivering additional capacity where required.
 Carbon-neutral transport	<ul style="list-style-type: none"> Increase the number of people travelling on rail and Metro in preference to the private car. Increase the share of goods transported by rail. Introduce new trains, more efficient electric ones on the Metro and electric / battery/ hydrogen ones on local rail and modal shift from road to rail on freight. Improve stations and depots.
 Healthier North East	<ul style="list-style-type: none"> Improve walking and cycling links to existing and new stations. Increase the number of people travelling on rail and Metro in preference to the private car.
 Appealing sustainable transport choice	<ul style="list-style-type: none"> Improve the Customer experience. Integrate fares and ticketing across rail, Metro and Bus. Improve reliability and punctuality of services. Extend the reach of local rail and Metro to serve more communities.
 Safe, Secure Network	<ul style="list-style-type: none"> Maintain enhanced presence on trains and at stations. Provide safer routes to stations. Raise the security standards at stations and on trains. Undertake targeted initiatives and campaigns to improve passenger safety.
 Integration	<ul style="list-style-type: none"> Work with GBR to seek greater influence over local rail to match the flexibility and accountability of Metro. Coordinate services and improving interchange between all modes of transport. Integrate fares and ticketing across rail, Metro and bus.
 Metro Operation, Maintenance and Renewal	<ul style="list-style-type: none"> Enhance the Metro timetable made possible by the introduction of the new fleet and Metro Flow. Deliver an asset renewal programme to maintain a high quality service in terms of passenger requirements. Further deliver improved energy efficiency. Deliver a re-signalisation scheme to ensure continued safe operations of the Metro and enable future expansion plans.

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