



NORTHERN

Northern Trains Limited: Socio-economic impact assessment

April 2022

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Foreword

Northern's vision is to 'make a positive impact for the North in all we do and for all we serve'. We know that our customers, our people and our stakeholders value our operation enormously, but we wanted to understand this in much more detail.

It is critically important for us to understand the value of Northern as we build our plans for the future, deliver sustainable development, support the Government's "levelling up" agenda and in helping the North to "build back better" as we recover from the COVID-19 pandemic. It is a crucial time for Northern and for the rail industry.

We have partnered with Atkins to undertake a detailed assessment of the social, economic and environmental value that Northern generates for the North, and for the UK. The results of that work are summarised in this report, and we hope you enjoy reading and find the outputs interesting.

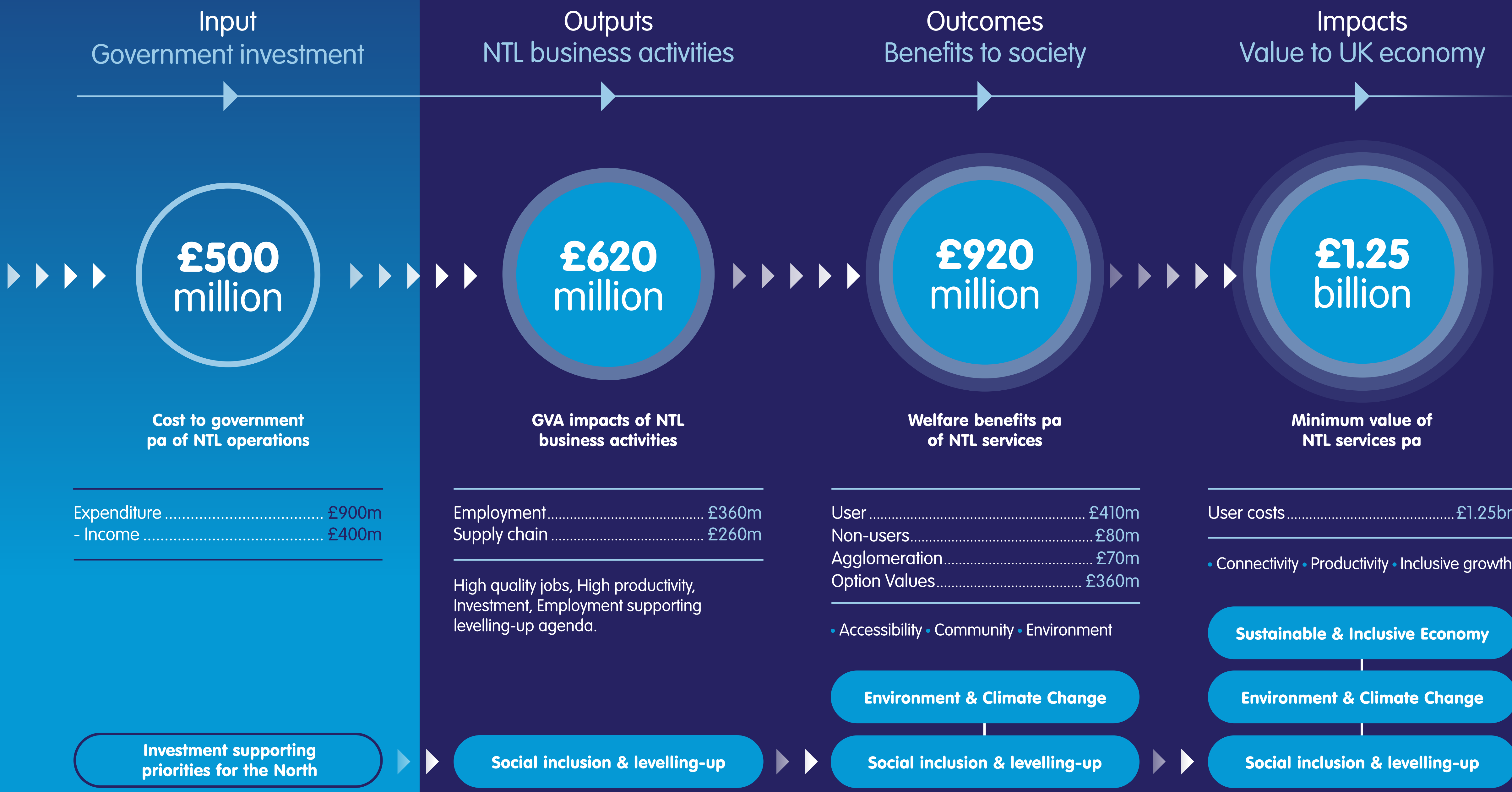
The study focuses on the year immediately prior to the onset of COVID-19. While the pandemic has clearly affected this impact in the past two years, it demonstrates the value that we want to return to and improve on in the future.

Only by understanding the key areas in which Northern brings value, both directly and indirectly, can we pinpoint the priority areas for investment and the greatest value for money interventions needed to achieve our vision to make a positive impact for the North.

The findings from this study have been used to inform our strategy and the metrics are being actively monitored to understand our ongoing impact.

We thank Transport for the North for their help with data modelling and information sharing, and look forward to working in partnership with all of our stakeholders across the North to make Northern, and the railway in the North, the best it can be.

Northern Trains Limited



Input
Government investment

Outputs
NTL business activities

Outcomes
Benefits to society

Impacts
Value to UK economy

£500 million

£620 million

£920 million

£1.25 billion

Cost to government pa of NTL operations

GVA impacts of NTL business activities

Welfare benefits pa of NTL services

Minimum value of NTL services pa

Expenditure £900m
- Income £400m

Employment £360m
Supply chain £260m

User £410m
Non-users £80m
Agglomeration £70m
Option Values £360m

User costs £1.25bn

• Connectivity • Productivity • Inclusive growth

Investment supporting priorities for the North

Social inclusion & levelling-up

Environment & Climate Change

Social inclusion & levelling-up

Sustainable & Inclusive Economy

Environment & Climate Change

Social inclusion & levelling-up

Executive summary

This report provides an analysis of the contribution made by Northern Trains Limited's (NTL) operations to the UK economy in a typical year. It also explores the important social benefits delivered by the Northern network and how its role in the economy might evolve in the aftermath of the COVID-19 pandemic.

The study has reviewed regional strategies to identify the recurring strategic priorities across the North of England to which NTL's network contributes. It has mapped how the Government's investment in NTL transmits through the economy in terms of direct jobs creation, its benefits to both transport users and non-users and its role in supporting labour markets and the wider economy of the North.

Key findings

The key findings, illustrated on the previous page, are as follows:

- Net Government investment in NTL was **£500 million** in 2019/20.
- This financial input generates **£620 million Gross Value Added (GVA)** (£360 million through direct employment of 6,600 people and a further £260 million, equivalent to 4,300 jobs, in its supply chain).
- The rail services that these staff and suppliers deliver generate welfare benefits of **£920 million** per year through benefits to both users and non-users.
- In delivering passengers to their destinations, NTL's operations support economic activity of at least **£1.25 billion** per year.

Based on this level of Government investment, and these estimates of NTL's contribution to the UK economy, every pound invested in the Northern network by the Government:

- Generates **£1.24 of GVA**.
- Returns **£1.84 of welfare benefit**.
- Supports **£2.50 of economic activity**.

These economic metrics represent different dimensions of economic contribution and cannot be simply summed to derive a total return on investment. However, it is clear that the Government's investments in NTL represent good value for money across a diverse range of economic, social and environmental criteria.

NTL in the North:

- Carries almost **50% of all rail trips**
- Is the sole service provider for **25% of the population**
- Operates 479 stations, **70% of the total**
- Serves across **four National Parks**
- Supports **21 Community Rail Partnerships**



Executive summary

NTL's role in supporting the North's policy priorities

NTL's importance to the economy of the North is highlighted in the findings of a policy review undertaken for this study. Transport Authorities across the North are looking to local rail services to support a wide range of important strategic priorities:

Connectivity:

NTL provides critical transport links into important regional economic centres such as Leeds, Manchester, Sheffield, Liverpool, Newcastle and Hull and for more peripheral rural and coastal areas.

Environment and climate change:

Rail is instrumental in the UK's transition to a zero carbon economy, supporting economic growth and enabling people to shift from more polluting road-based transport.

Sustainable growth:

Stations provide important gateways to towns and cities around which economic activity clusters. Rail is also important in providing the transport capacity needed to unlock urban regeneration.

Social deprivation/inclusion:

Rail plays a key role in supporting inclusive growth, supporting access to education, employment and services for young people and households without access to a car.

Rail, and local services in particular, can play an important role in building a Northern Powerhouse, supporting spatial planning policy for delivering new homes and quality jobs in the right places, enabling dynamic city, town and district centres and promoting inclusive and sustainable economic growth.

NTL's network will also play a role in supporting delivery of our most pressing national policy agendas:

Decarbonising transport:

While rail's direct contribution to transport emissions is relatively marginal (1.4% of domestic transport emissions), local services have an important role to play in achieving net zero, sustaining marginalised communities and supporting economic growth without continued reliance on road traffic.

Levelling up:

The significant investments in the North's infrastructure being considered by Government recognise that transport, and especially rail, will be an important enabler of social and economic progress in the North. However, the benefits of enhanced regional connectivity and high speed rail risk being confined to the centres of the North's major cities without investment in the local routes and services that connect these hubs to the communities and businesses in their hinterlands and beyond.

Economic recovery from COVID-19

Through 2020 and 2021 the pandemic and the associated movement restrictions have had a dramatic impact on rail passenger demand. Though there remains much uncertainty around the extent to which rail demand will recover, many of the underlying drivers of rail demand growth in the North will remain intact after the pandemic. In fact, the North has already seen a relatively strong recovery in the past year.

There are likely to be a range of behavioural and land use changes as a result of the pandemic, with people travelling to places of work less frequently and changes to shopping and leisure habits. However, these effects may be less pronounced in many areas of the North owing to the mix of industrial sectors represented, particularly in the smaller cities and sub-regional centres, and the wide range of leisure assets available. A speedy and robust recovery can be secured for the North through encouraging people back to the railway and stimulating new travel markets with promotions and high-quality services.

Conclusions

This study has considered the economic contribution of NTL's operations to the UK economy and examined its role in supporting policy priorities in the North of England, including the recovery from the COVID-19 pandemic.

Our analysis shows that NTL's operations represent a highly effective means of generating social and economic value for the North, supporting businesses and communities, and generating many good quality and well-paid jobs.

The wide range of social, environmental and economic benefits from NTL's services means that the rail network is a cornerstone of transport policy across the North and it represents an important enabler of pressing national priorities. Reimagining and reinvigorating the Northern network must play a central role in the economic recovery from COVID-19, the levelling up agenda and the country's pursuit of net zero carbon.

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Chapter One

Introduction

Overview

Recognising the significant challenges it has faced in recent years, Northern Trains Limited (NTL) is working with stakeholders and partners across the North to re-energise the franchise and transform its services.

As part of this process, NTL is seeking to understand how its operation contributes to delivering a wide range of economic and social benefits throughout the North of England. This work is critical in informing future strategy.

This report examines the value of NTL's operations to the economy of the North of England and the wider UK and in supporting the Government's policy agenda, including levelling-up, decarbonisation and the recovery from the COVID-19 pandemic. Primarily, this will focus on the year immediately prior to the onset of the pandemic.

Methodology

This work captures, as far as possible within the constraints of the available data, the full range of impacts of NTL's operations.

A five-step approach to appraisal has been undertaken:

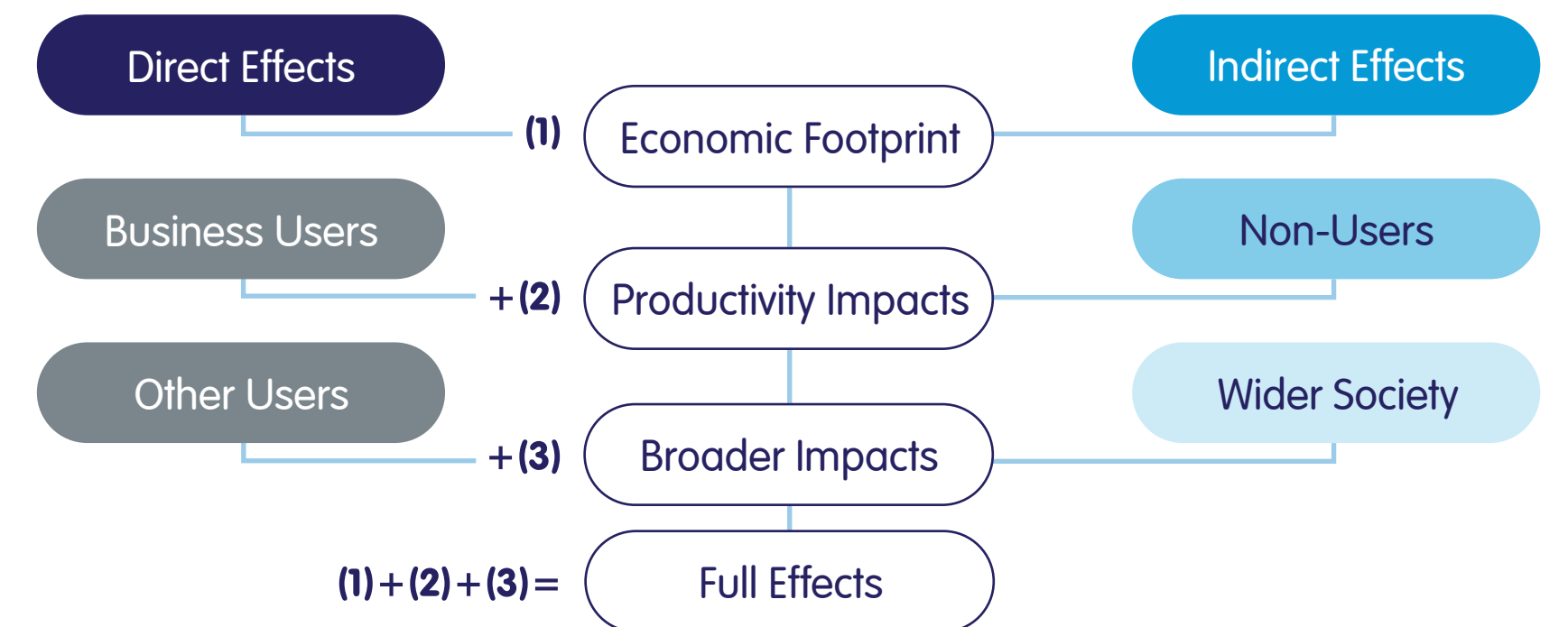
- **Step 1:** Confirmation of methodology – Similar previous studies in the region and across the UK provided the initial basis for developing the appraisal methodology. Stakeholder views were sought, and a final set of appraisal measures covering a range of impact groups were confirmed.
- **Step 2:** National and regional policy review - Policy documents were analysed to provide the evidence base onto which to map the critical challenges for the UK, across the North and different sub-regions.
- **Step 3:** Data collation – A wide range of data was identified and collated from various sources including:
 - Social and demographic data from the Office of National Statistics
 - NTL employee and supply chain data
 - The rail industry software package MOIRA for modelling demand and revenue impact changes
 - Transport for the North's Northern Transport Modelling System.
- **Step 4:** Appraisal (using the framework shown in Figure 1) – Making use of the different datasets to undertake comprehensive analysis of the direct, indirect, productivity and wider impacts of NTL's operations.
- **Step 5:** Reporting.

Figure 1: Appraisal framework

Impact Groups

Direct Effects	NTL's own business: number of people employed by NTL, wages and GVA impacts
Indirect Effects	Supply chain impacts: people employed by NTL's suppliers, wages and GVA impacts
Customers	People using NTL services: value of their journeys to access jobs and opportunities
Non-Users	Value to other people from people using NTL services: less congestion on the road network
Wider Society	Value to wider economy, society, environment: agglomeration, regeneration, social inclusion, health and wellbeing, carbon impacts

Impact Framework



Introduction

NTL's operations

NTL is owned by DfT OLR Holdings Limited (DOHL), which assumed the operation of Northern rail services on 1 March 2020. It operates 33 regular routes and two irregular routes, covering every metropolitan and ceremonial county throughout the North of England. Its network covers approximately 3,000km, and the routes serve 535 stations, of which:

- 524 stations have a regular daily service
- 396 stations are serviced exclusively by NTL
- 479 stations are operated by NTL.

In total, NTL calls at approximately 20% of all UK rail stations, and 70% of those located in the North of England. It is the primary service provider in Greater Manchester, South, West & East Yorkshire, where it provides a service to every train station.

In most other sub-regions NTL serves most stations, with the exception of:

- Independently operated city region metro services (Merseyside and Tyne & Wear)
- Areas at the periphery of the network (Derbyshire, Nottinghamshire, Staffordshire and Lincolnshire).



Figure 2: Rail network in the North

- NTL only service
- Shared station
- NTL Line
- Other Lines

Table 1: Breakdown of TOC station operations in the North

Region	NTL only service	NTL irregular service	NTL shared service	No NTL service	Total
Cheshire	26		12	12	50
Cumbria	45		2	1	48
Derbyshire and Nottinghamshire	12		15	42	69
East Yorkshire and Northern Lincolnshire	25	4	12		41
Greater Manchester	76	2	13		91
Lancashire	53	1	6	2	62
Lincolnshire	1	0	3	18	22
Merseyside	17		12	56	85
North Yorkshire	36	2	7	3	48
Northumberland and Tyne & Wear	15	3	5	58	81
Shropshire and Staffordshire	0		3	25	28
South Yorkshire	24		5		29
Tees Valley and Durham	23		8	1	32
West Yorkshire	46		23		69
Total	399	11	126	218	755

In 2019/20 NTL's operating expenditure was £900m, against a total income of just less than £400m, leaving a net cost to public accounts of £500m (including £387m subsidy).

Table 2 shows how this operating deficit has grown from 2015/16.

Table 2: NTL Income and expenditure 2015-16 to 2019-20 (£m)

	2015-16	2016-17	2017-18	2018-19	2019-20
Operating income	340	364	357	374	397
Operating expenditure	576	643	639	745	899
Operating income less expenditure	-236	-279	-282	-371	-502

Source: Office of Rail and Road: Table 7226 – Franchised passenger train operator finances over five years by franchise.

This report demonstrates how a narrow financial assessment of NTL's operations fails to capture its strong value for money and the wide-ranging economic and social value generated for the North of England.

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Chapter Two

Policy context

Policy context

Overview

In its 2019 Strategic Transport Plan², Transport for the North (TfN) identified that the economy of the North of England is worth around £343 billion, equivalent to being the 27th largest economy in the world¹. The region is home to over 15 million people and around 1.1 million businesses providing more than 7.7 million jobs.

The North has built world leading capabilities in a number of high value industries, many of which are recognised as nationally important in the 2017 National Industrial Strategy²:

- Tourism/cultural/creative and leisure
- Freight and logistics
- Advanced manufacturing, automotive and aerospace
- Low carbon and renewable energy sector
- Agriculture, agri-tech and food and drink manufacturing.

Despite these successes there remain significant challenges in terms of marginalised economies and entrenched deprivation, with the wealth created by these industries not being equitably distributed across the North. This is illustrated by the fact that the North is home to over 23% of the UK's population but its economy only contributes 19% of the UK's total economic output. The gross value added (GVA) per person in the North is now 18% below the UK average, a gap which is widening.

Geography of the North

The North has a unique economic geography which relies on interconnectivity between the various cities, towns and industries that each play different roles to the overall regional economy.

A large share of the economic activity and jobs are focused within the major cities of the North. Manchester and Leeds are the largest cities in the North and account for 24% of all jobs in the region and 35% of all knowledge intensive business services (KIBS).

Cities and economic centres located in less densely populated areas such as York, Blackburn and Lancaster also serve as functional local centres for their region.

The Northern region also includes extensive rural areas, which face different issues including accessibility to public transport provision.

Figure 3 shows the sub-regions³ of the North considered in this study, along with the geographical disaggregation used in the analytical work that follows in subsequent chapters. Derbyshire and Nottinghamshire are included due to NTL's presence in these areas. NTL also operates services at fewer than 5 stations in each of Staffordshire and Lincolnshire.

Chapter summary

- Transport Authorities across the North are looking to local rail services to support a wide range of important strategic priorities.
- NTL provides critical connectivity into important regional economic centres such as Leeds, Manchester, Sheffield, Liverpool, Newcastle and Hull and for more peripheral rural and coastal areas.
- Rail is instrumental in the UK's transition to a zero carbon economy, supporting economic growth and enabling people to shift from more polluting road-based transport.
- NTL's services support sustainable growth in the North, its stations provide important gateways to towns and cities around which economic activity clusters and its services provide the transport capacity needed to unlock urban regeneration.
- Rail plays a key role in supporting inclusive growth, supporting access to education, employment and services for young people and households without access to a car.

¹ TfN-final-strategic-transport-plan-2019.pdf (transportforthenorth.com)

² Industrial Strategy: building a Britain fit for the future

³ Nomenclature of Territorial Units for Statistics

Figure 3: Geography of the North and study area



Key challenges

The documents shaping the direction of economic, social and transport policy in England and the North set out a range of rail-related ambitions. Some of these are common across the region, while others vary as a result of factors such as location, demographics and industrial structure. The common themes and potential outcomes are outlined in this section.

Connectivity

TfN cites poor economic interaction between the key economic assets and clusters of the North as the fundamental challenge for the region's economy.

This lack of agglomeration leaves towns and cities across the North unable to take full advantage of the spatial concentration of economic activities which in turn leads to increased supply chains and labour demand.

Growth

Facilitating sustainable growth is another key economic challenge facing the region. As described earlier in the chapter, GVA per person in the North is 18% below the UK average. Closing this productivity gap represents one of the key challenges for the UK's Industrial Strategy.

Population growth is also an important consideration. The North's population has grown by 5% between 2009 and 2019, compared to 7% growth nationally⁴. There are currently around 6.5 million households in the North, but analysis by Homes for the North⁵ shows that at least 50,000 new homes will be required every year for the next decade across the North to meet projected demand. Furthermore, many policy documents for the North highlight the challenges of the ageing population. This is a national challenge, with projections showing that one in four people will be aged over 65 years by 2050, compared to one in five in 2018⁶.

The growing population is also putting increasing strain on the regions transport network, with congestion growing on the strategic and local road and rail network, resulting in lost time.

⁴ ONS Population estimates
⁵ H4N-Levelling-up-the-Green-Book-Stage-1-Full-report.pdf
⁶ ONS (2019) Overview of the UK population

Social deprivation

With over two million people of working age living below the poverty line in the North², entrenched deprivation poses a major socio-economic challenge for the region. The North has a disproportionately large share of high deprivation areas given its population. More than half of the most deprived neighbourhoods (Lower Super Output Areas - LSOAs) in England are located in the North, despite the region accounting for just 29% of all LSOAs in England⁷.

The inclusive growth agenda is dependent on the need for everyone to have equal access to opportunities, and rail connectivity has an essential role to play. 28% of households in the North do not have access to a car or van, compared to the national average of 26% (or 23% excluding London)⁸. Providing journey opportunities to people that might not otherwise be able to make them is a crucial role for rail as a public transport service in the North.

Environment & climate change

Most authorities across the North have declared Climate Emergencies, highlighting the environmental challenges faced by the region. Passenger cars are known to contribute the majority of transport-related carbon emissions in the UK, and car dependence is a key challenge that the authorities of the North must tackle in order to meet the region's ambitious net zero targets.

Poor air quality due to transport issues (mainly emissions from cars) is a further environmental challenge for the region. This is reflected in the designation of a number of Air Quality Management Areas across the North.

Role of rail in the North

Around 115 million rail trips are made every year on rail services in the North. Over the last decade, the North's railway has experienced substantial growth (in the region of 30%) in passenger numbers despite a legacy of underinvestment.

With existing rail infrastructure reaching capacity the Government is investing in the rail network both in the short-to-medium term (such as Transpennine Route Upgrade) and in the form of longer-term transformational schemes.

Planned government investment in rail presents a sizeable opportunity for the rail network in the North. Increased network capacity and new and upgraded infrastructure have the potential to expand rail services, making it easier to move between the region's towns and cities. Many authorities in the North are looking to capitalise on these investments and are recognising that the benefits of transformed intercity rail connectivity will only be realised where there are high quality local rail routes and services to connect new high speed rail hubs to the communities and businesses in their hinterlands and beyond.

Figure 4 on the following page provides a summary of the role of rail in the North in helping to meet the main strategic challenges identified in this policy review.

Figure 4: The role of rail in meeting challenges

Connectivity	Locally	Locally, there is also a clear role for rail in providing public transport options between communities and employment, education and leisure opportunities in local economic centres, both big and small. The role that local rail services have in reducing social exclusion and improving accessibility for the most deprived and isolated communities is emphasised across local policy documents. Several local authorities refer to a need to reopen disused rail lines and create new stations to improve local and regional connectivity, further highlighting the value that these communities place on local rail, including in County Durham, Cheshire East, Nottinghamshire and North Yorkshire.
	Regionally	Strong regional connectivity is cited as being particularly important for areas such as Cumbria, the North East and other coastal areas, with rail identified as a key mechanism for reducing the economic impacts of peripherality for these regions. Key destinations of importance often mentioned include Manchester, Leeds, Newcastle, Sheffield and Nottingham due to the employment, education and leisure time opportunities on offer.
	Globally	The rail network is recognised as providing important strategic links to the North's international gateways such as Manchester. Several local transport plans identify a need for rail links to international transport hubs to be improved, such as improved connectivity along the Eastern Access Transport Corridor (to Liverpool John Lennon Airport and the River Mersey) and a new parkway station at Leeds Bradford Airport.
Environmental & Climate Change	Carbon Emissions	An effective rail network is considered to play a critical role in reducing greenhouse gas emissions for the North, where the net zero ambition is more stretching than currently committed to at the national level. A number of TfN's Partners have declared Climate Emergencies and net zero targets of as early as 2030. The rail network's role in facilitating a meaningful shift towards a sustainable transport system is echoed throughout local and regional transport plans and policy documents across the North. As the electrification of the North's rail services continues, rail will become an even cleaner and more sustainable form of transport.
	Reliance on Roads	Many local transport plans produced by the North's local authorities highlight existing and forecast congestion and capacity issues on their highway networks. Rail's role in providing a viable and attractive alternative to using private vehicles is seen as a key mechanism for tackling these challenges, particularly for long distance journeys.
	Achieving net zero	Rail will be instrumental in the UK's transition to a zero carbon economy and away from a dependence on fossil fuels. Continued investment is required to explore alternative propulsion technologies alongside the expansion of electrification, further extending rail's advantage over other modes in terms of carbon emissions.

Figure 4: The role of rail in meeting challenges

Growth	▶ Attracting Investment	▶ Railway stations act as entrance gateways for many of the North’s towns and cities. When it comes to attracting visitors and investment, making a good first impression can be crucial, and the appearance and function of the region’s rail infrastructure plays a key role in this. Authorities across the North recognise the importance of this in their policy documents, with several outlining ambitions to support station improvements and the creation of transport ‘hubs’.
	▶ Specific Industry	▶ The existing rail network in the North is important to the freight and logistics sector, through moving congestion off the road to rail and freeing up movement on roads. The rail network provides a means to take full advantage of the tourism, leisure and cultural offering of the North in a sustainable and accessible manner. The North is developing a reputation for certain high quality agricultural produce and is aiming to further its value addition activities in the sector. The NT network is important to the sector as it opens up access to key ports and supply chain gateways for the sector. Rail is also key to supporting the low carbon and renewable energy sector in the North, through connecting major employment sites to different labour pools and innovation assets, for example along the Energy Coasts in Cumbria and the North East. Advanced manufacturing is well-developed across the North, with output and productivity expected to grow significantly between 2015 and 2030. However, the most productive places are smaller towns and peri-urban areas, which provide an optimal physical and economic environment for industries that are space intensive, such as advanced manufacturing or biotech. They are in need of good transport options and better access to a wider range of skills.
Social Deprivation	▶ Equal Access	▶ The inclusive growth agenda hangs on the need for everyone to have equal access to opportunities and services, rail has an essential role to play here. Rail is a key form of affordable transport in the North which opens up opportunities for people who do not have access or are unable to travel by car. For example, rail is an essential form of transport for young people at early stages in their career where they are unable to afford or access a car, or for sections of the older population who are not able to drive.
	▶ Connection to Opportunities	▶ Connectivity is key to levelling up and creating higher value and quality jobs in the foundational economy. Connectivity creates access to education and training opportunities; supports digitalisation and innovation; and ensures access for all.

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Chapter Three

Direct impacts

Direct impacts

Overview

Gross Value Added (GVA) to the national economy from NTL's employment can be derived from the wages it pays to employees and can be captured in appraisal as a benefit known as direct economic impact.

The direct impacts of NTL are driven by the number of people directly employed for NTL's operation which includes:

- Train crew and maintenance
- Managerial and administration staff
- Customer relations
- Engineering apprenticeships and a range of other roles.

The assessment of direct impacts has used information from primary and secondary resources, including:

- NTL data on employment numbers by role and workplace location, 2020
- NTL data on average wage by role and by workplace location, 2020
- NOMIS Business Register and Employment Survey (BRES), employment data, by Standard Industrial Classification (SIC) at NUTS 2 level, 2017 (latest data)
- ONS Annual Survey of Hours and Earnings (ASHE) annual mean wages at regional and SIC level, 2017
- ONS Regional GVA income approach, by SIC, at NUTS 1 and NUTS 2 level, 2017.

It has been assumed that employee GVA can be attributed to the area in which the job is located. The value of the job and employee spending would be assumed to fall within the area where the job is located. The data has been used at a consistent geographical level where possible, with a focus on the NUTS3 level reflecting the administrative hierarchy as counties, unitary authorities, or districts in England (some of which are grouped). However, some of the data is only available at higher geographical levels, such as the NUTS1 level (regions), and calculations have reflected this as required.

Valuation in relation to NTL services

The NTL employee data, summarised in Table 3, shows a total workforce of 6,620 staff, 206 of whom work part-time. Approximately 50% of jobs are based in the North West, with a further 40% employed in Yorkshire and The Humber. Approximately 80% of jobs are in the Transportation and Storage sector, which includes all train crew, track operations and fleet maintenance, with the remaining staff split relatively evenly between professional and support roles.

Table 3: NTL direct employment by sector and region, 2020

Sector/ Location	North East	North West	Yorkshire & Humber	East Midlands	Total
Transportation and storage	544	2,570	2,025	66	5,205
Professional, scientific and technical activities	34	264	339	-	637
Administrative and support services	35	410	320	13	778
Total	613	3,244	2,684	79	6,620

NTL provided wage data from which workforce income has been calculated and has been compared against regional sectoral averages (Table 4). NTL wages are higher across all broad sectors, in particular for those in professional, scientific and technical roles.

Chapter summary

- NTL is one of the largest employers in the North of England with 6,620 roles producing a direct GVA contribution of over £360 million.
- NTL creates good, well-paid jobs for a diverse workforce. Wages are higher than the regional average across all broad sectors, in particular for those in 'transportation and storage' (24% higher), and 'professional, scientific and technical' roles (56% higher).
- While 60% of the jobs created by NTL are in major cities (Manchester, Leeds, Tyneside, Liverpool and Sheffield), the remainder are distributed across the whole of the North.

Direct impacts

Table 4: Workforce income by sector, 2020

Sector	NTL average wage	Region average
Transportation and storage	£38,257	£30,840
Professional, scientific and technical activities	£51,773	£33,086
Administrative and support services	£24,905	£23,684

Table 5: Estimated workforce income by area (£m, 2020)

Sector/ Location	North East	North West	Yorkshire & Humber	East Midlands	Total
Transportation and storage	£20.0	£97.8	£77.3	£2.6	£197.7
Professional, scientific and technical activities	£1.8	£13.2	£17.5	£0.0	£32.5
Administrative and support services	£0.9	£10.1	£7.8	£0.3	£19.1
Total	£22.7	£121.1	£102.5	£2.9	£249.2

Table 5 shows the NTL employment income at the regional level. Across the NTL network area, £250 million of workforce salary is estimated to be paid, based on the average wages and the disaggregation of workforce jobs.

Direct GVA impacts analysis

The direct GVA impacts have been calculated by multiplying the workforce numbers by attributable GVA⁹ per workforce job, for the corresponding SIC and locale using the formula:

$$\text{Sectoral GVA} * \text{Proportion of GVA attributable to workforce} / \text{Sectoral workforce jobs}$$

Attributable GVA figures were calculated at the NUTS 2 level and for the broad SIC codes relevant for this analysis. The sector wide workforce jobs measure uses BRES employment data (2017) to calculate sector GVA per worker, aligning with the ONS Regional GVA data.

Adjusting GVA per worker for NTL wage differentials

The wage data by role has been used to calculate an adjusted GVA per workforce job. This better represents the high value, well-paying roles that are created throughout the NTL network.

Regional wage data and NTL wage data were then used to adjust the GVA per worker metric:

$$\begin{aligned} & (\text{Share of Sectoral GVA which is compensation to employees} \\ & \times (\text{NT Sectoral Wage} / \text{Regional sectoral average wage})) \\ & + (1 - \text{Share of Sectoral GVA which is compensation to} \\ & \text{employees}) \times \text{Attributable GVA per workforce job}) \end{aligned}$$

Key findings on direct impacts

NTL's direct jobs, adjusted for the level of part-time workers (206 employees), have been disaggregated by sector and location and the adjusted attributable GVA per job has been applied.

This analysis leads to an estimated direct GVA impact value for NTL of **£363 million** as presented in Table 6 by region and sector.

⁹ **Attributable GVA** is the share of GVA which is attributable to the workforce. This is the numerator for the calculation of GVA per Workforce Job. Attributable GVA is calculated using the ONS Regional GVA (income approach) data which provides GVA subcomponents: Compensation of employees (CoE), Taxes, Subsidies and Rental Income.
Attributable GVA includes: CoE + (GOS/MI – rental income) + (Proportion of rental income to GVA * taxes less subsidies)

Direct impacts

NTL's operations play a significant role in the job market and GVA contribution with a direct job creation of 6,620 roles and a direct GVA contribution of over £360 million. This equates to £55,000 GVA per direct employee.

Jobs are not only of high value to the UK economy in quantitative terms but also in terms of quality. Many of the jobs are well paid roles which offer inclusive progression opportunities to a diverse workforce.

Table 7 and Figure 5 show the direct GVA impacts by sub-region.

Table 6: Total direct GVA impacts by sector and region (£m, 2020)

Sector/ Location	North East	North West	Yorkshire & Humber	East Midlands	Total
Transportation and storage	£32.7	£149.8	£111.3	£3.9	£297.6
Professional, scientific and technical activities	£1.9	£17.5	£20.6	£0.0	£39.9
Administrative and support services	£1.0	£13.8	£10.3	£0.5	£25.7
Total	£35.6	£181.1	£142.2	£4.5	£363.3

Table 7: Top 10 sub-regions by direct GVA (£m, 2020)

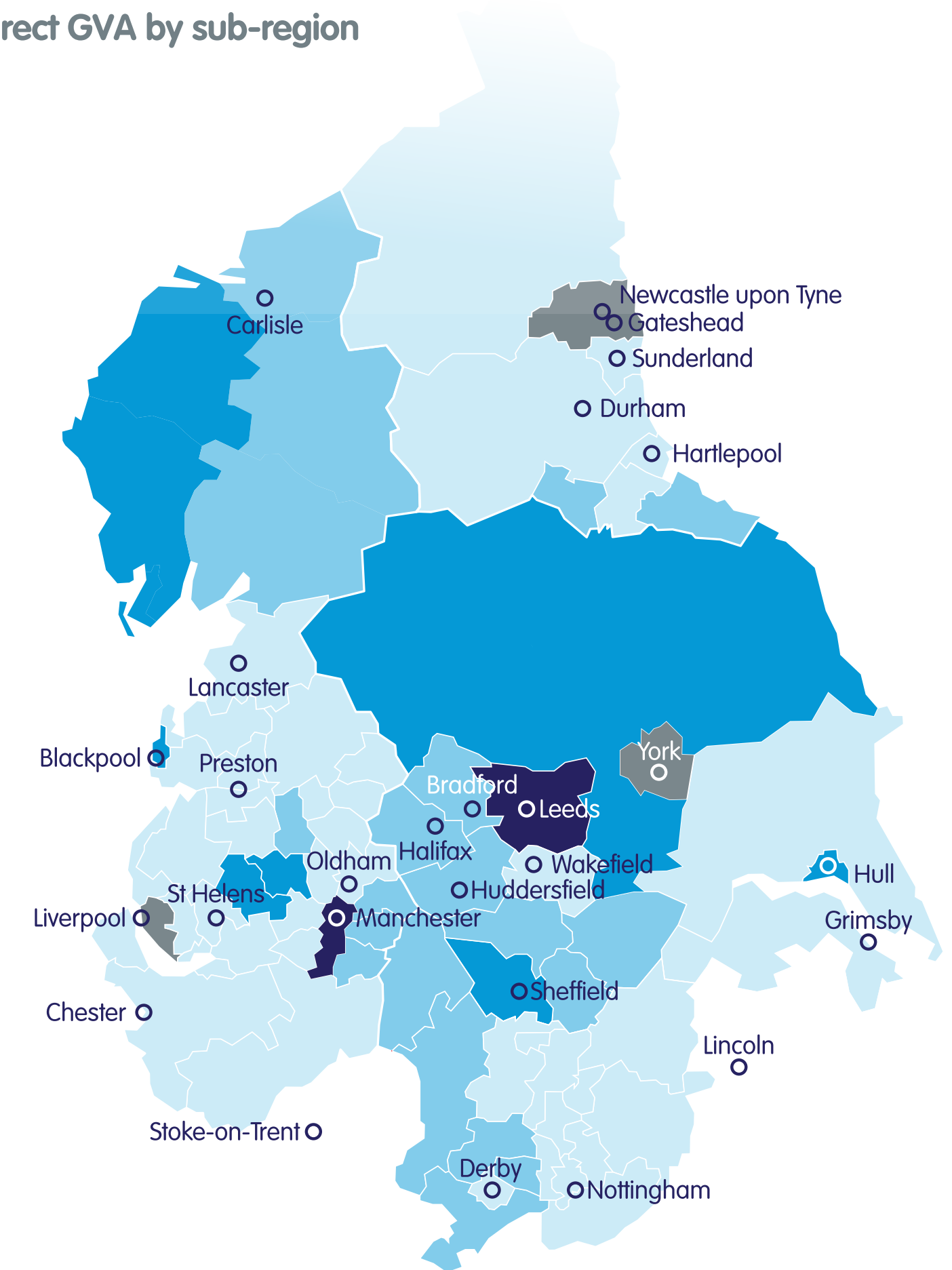
Sub-region	Direct GVA
Manchester (central)	£85.1
Leeds	£61.9
Tyneside	£27.8
Liverpool	£25.0
York	£24.7
Blackpool	£19.2
Sheffield	£19.2
Greater Manchester North West	£14.7
North Yorkshire CC	£13.5
West Cumbria	£13.0

Figure 5: Distribution of direct GVA by sub-region

Direct Impacts

- £0 - £2m
- £2 - £10m
- £10 - £20m
- £20 - £40m
- £40 - £90m

The largest impacts are in Manchester (home to almost 2,000 NTL jobs), Leeds, Tyneside, Liverpool and York, but it is clear that NTL creates a large number of well paid jobs across the whole of the North, and especially within the city regions where deprivation is a particular issue.



Direct impacts

Induced impacts

Induced impacts refer to the further economic activity supported by the spending of workers, where GVA will also be generated through the consumer expenditure of NTL's own staff on UK goods and services.

This induced spending is typically considered to have notable displacement and leakage in the economy with a share being additional output. In previous research, the Oxford Economics study (2018) determined sector wide induced impacts and found these were around 30% of the total direct and indirect GVA impacts.

Comparison to previous research

The Northern franchise Socio-economic Impact Assessment (Arup, 2011) presented a direct employment value of £110m (2010 prices). The 2011 Northern franchise workforce was smaller than today's, with 4,809 employees (provided by NTL, 2020). This study has estimated a higher GVA per worker (£55,000) than this previous work, beyond price and workforce adjustments, which is potentially due to the use of specific NTL wages which are above regional averages.

PTEG's 2014 study 'Economic Value of Rail in the North of England' estimated that NTL and TPE directly employed 6,000 staff. The study estimated that direct impacts contributed £1.3 billion to the total supply side output of £3.1 billion. Of this total, direct output of the train operators reflected approximately 50% of the total and Network Rail the other 50% (equivalent to 2,600 jobs) alongside tax impacts. Taking a train operator perspective, the 6,000 jobs relate to £636 million expenditure (excluding Network Rail charges and profit), of which two thirds was assumed to flow locally. This is reasonably aligned to the present study but would require an adjustment to GVA to be directly comparable.

Oxford Economics' 2018 assessment of the economic contribution of UK rail estimated the railway system's total GVA to be £11.3 billion (2016 prices). For the Northern regions, the work estimated an industry direct GVA of £2.02 billion and 24,300 workers, at approximately £83,000 GVA per worker. The per worker estimates are significantly higher than this study and previous Oxera rail sector estimates (2015). The Oxford Economics study includes a wider definition of the sector with train operating companies, freight operating companies, metro systems and Network Rail, summing total employment costs and capital depreciation for the latter as the standard approach for government activities.

Overall, previous work at the national and sector-wide level estimates higher direct GVA in relation to employment than this study. Such work has considered output and spend including Network Rail and capital investment which are related to a lower number of jobs and thus drive higher overall GVA per worker estimates. The Northern network drives wider sector investment, although this is not captured as a direct impact of NTL.

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Chapter Four

Indirect impacts

Indirect impacts

Overview

The value of goods and services procured by companies from their supply chain reflect a contribution to the UK economy, and can be presented in economic appraisal as GVA of indirect impacts.

NTL has a diverse supply chain providing it with goods from rolling stock to office supplies, and services from train maintenance to consultancy advice.

The calculation of indirect impacts requires primary data (accounts details provided by NTL) and secondary data to determine GVA. The data used in this assessment is:

- NTL supply chain procurement of products and services for the period of 2016 to 2020
- ONS Input-Output analytical tables, multipliers and effects, 2016
- ONS Annual Business Survey (ABS), SIC sections, size-banded by turnover and GVA, 2008 (latest available data)
- ONS labour productivity indices by region (GVA per filled job), 2020 release.

Valuation in relation to NTL services

The NTL orders for the 2016-2020 period (Table 8) show how purchasing has increased over recent years, totalling £625 million by 2020 and sourced from over 1,000 different suppliers.

Table 8: Purchases ordered 2016-20 (£m, 2020)

Year	Supply chain orders
2016	£356.8
2017	£381.1
2018	£480.6
2019	£524.0
2020	£625.3
Total	£2,367.7

The regional distribution of goods and services ordered in 2020 by NTL (shown in Table 9) shows that approximately 45% of the procurement value is spent within the three regions of the North – the majority within the North West. Outside of the North, 31% is spent at companies either located in or registered in London. The East Midlands, where NTL provides a rail service in Derbyshire and Nottinghamshire, also attracts a substantial share of spend.

Table 9: Mapped spending by region 2020

Year	Proportion of spend
North West	31%
North East	8%
Yorkshire and the Humber	6%
East Midlands	11%
London	31%
Elsewhere	13%

Converting the supply chain spend into GVA equivalents requires the application of a GVA-turnover approach.

A spend to GVA turnover ratio was calculated for the sectors in NTL's supply chain using the ONS's latest Annual Business Inquiry dataset at the sector level (2008).

Chapter summary

- In 2020, NTL's supply chain spend totalled £625 million, sourced from over 1,000 different suppliers.
- This procurement spend equates to GVA of £257 million per year, equivalent to 4,315 jobs.
- 45% of this value was spent on suppliers in the North of England.

Indirect impacts

Key findings on indirect impacts

The conversion of spend to GVA shows that procurement by NTL for goods and services amounts to £257 million per year (2020 prices). **Of this total GVA, approximately 45% (£113m) of this supply chain value is retained in the North.**

Breaking this spend down by business sector (Table 10) identifies that the largest indirect impacts relate to Transport and Storage, which includes rolling stock leasing, station and track access and accounts for over three quarters (76%) of all NTL spend in the North.

Manufacturing, construction and professional services each account for a further 4% of spend.

UK wide, transport and storage spend makes a lower proportion (at 71%) of the indirect GVA impact and reflects higher spend on business and administration costs.

Table 10: Indirect impacts GVA by region (£,000s - 2020 prices)

Sector	UK wide	North West	North East	Yorkshire & The Humber
Transport and storage	£182.4	£63.9	£19.3	£4.9
Business and admin support services	£13.5	£1.6	£0.5	£1.7
Professional, scientific and technical services	£12.1	£2.6	£0.2	£2.5
Construction	£8.9	£4.0	£0.0	£0.7
Manufacturing	£8.9	£3.3	£0.1	£1.0
Finance, insurance and real estate	£5.4	£3.2	£0.0	£0.5
Combined other	£25.7	£0.8	£0.6	£1.7
Total	£256.9	£79.4	£20.8	£13.0

The spend (and resulting indirect GVA) has been mapped to sub-regions in the North (Figure 6 and Table 11).

Figure 6: Distribution of indirect GVA by sub-region

Indirect Impacts

- £0 - £500k
- £500k - £1m
- £1m - £5m
- £5m - £20m
- £20m - £30m
- £30m - £70m

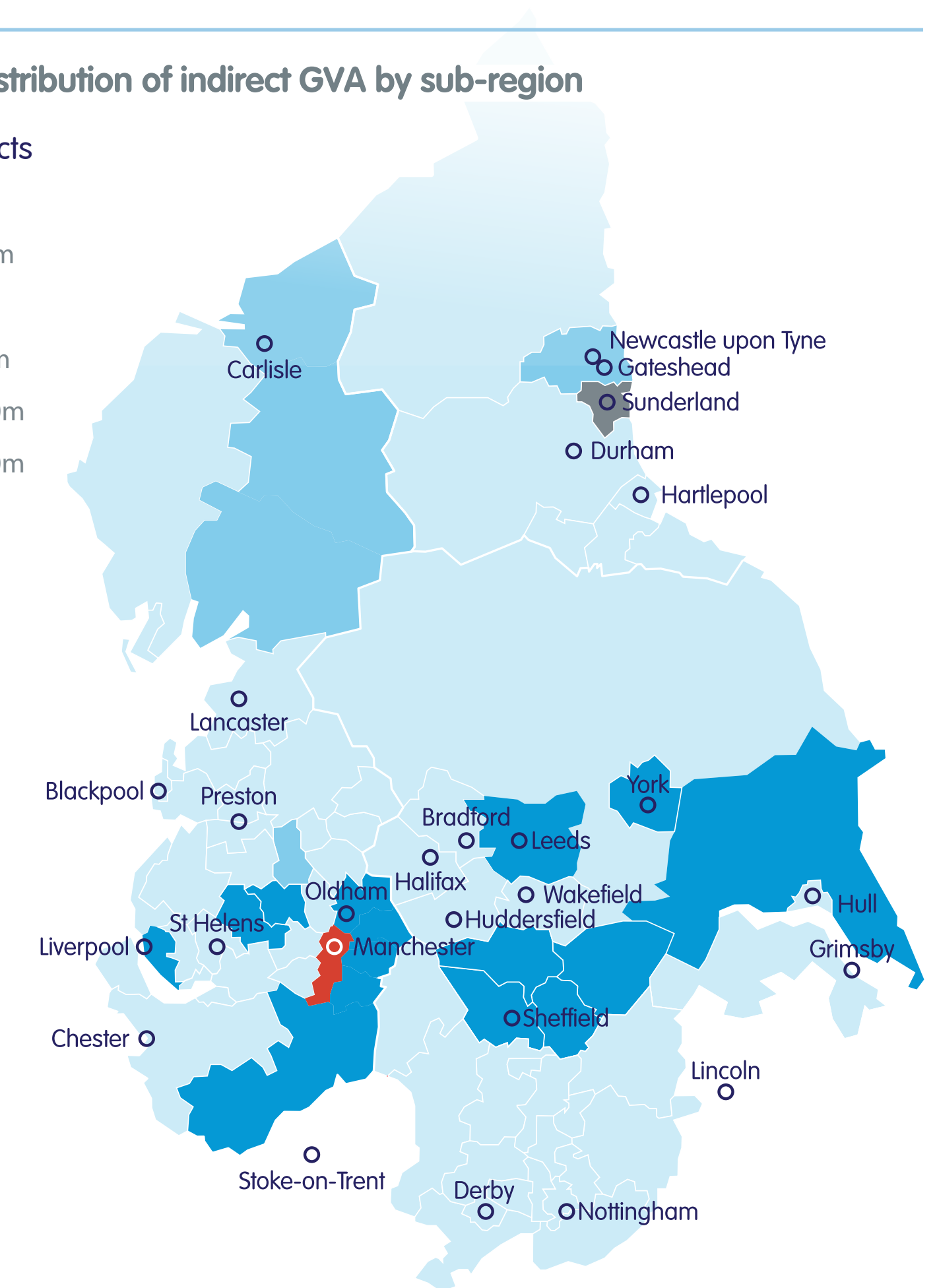


Table 11: Top 10 sub-regions by indirect GVA (£m, 2020 prices)

Sub-region	Indirect GVA
Manchester (central)	£66.8
Sunderland	£19.6
Sheffield	£3.8
Leeds	£3.6
Cheshire East	£3.2
Greater Manchester South East	£3.1
York	£2.5
Liverpool	£2.2
Greater Manchester North East	£1.6
East Cumbria	£1.6

Manchester accounts for a significant proportion (£66.8 million) of the GVA impact due to fees paid to Network Rail for station and track access. The second largest sub-region by spend is Sunderland (£20.6 million), where the vast majority of spend was paid to Arriva (Trains Limited and PLC).

Four sub-regions, Cheshire East, Sheffield, Leeds and South East Great Manchester received over £3 million of GVA impact each, largely in relation to vehicle maintenance and equipment.

This supply chain spend can also be presented as equivalent jobs through applying the disaggregated GVA of NTL's spend to regional GVA: jobs data as provided by ONS. By doing so, NTL is estimated to support 4,315 jobs in the UK economy through its direct day to day expenditure.

Comparisons to previous work

The Northern franchise Socio-economic Impact Assessment (Arup, 2011) did not estimate supply chain impacts.

PTEG's 2014 study 'Economic Value of Rail in the North of England' estimated a total supply side output (direct and indirect) of £1.6 billion for the region and £3.1 billion in total. This was for the rail network as train operators, Network Rail and their supply chain. The employment equivalent of the indirect impact was estimated at 12,000 jobs of the total 20,600 jobs - a significant component. This work applied a multiplier suggested by Invensys Rail research that every ten additional direct jobs in the railways generate 14 indirect jobs elsewhere in the economy.

This present study focuses on NTL's specific supply chain with the GVA attributable to NTL's purchases within the UK economy, and has a lower implied multiplier between direct and indirect impact (6,620 jobs, £363 million GVA to 4,300 jobs and £257 million GVA) than the PTEG work. However, this direct-indirect relationship varies in other work including Oxera's 2015 study¹⁰ (£6.3bn direct to £3.8bn indirect) and Oxford Economics' 2018 study¹¹ (£11.3bn direct, £15.1bn indirect and £8.5bn induced). The Oxford Economics work considered the differences in the supply chain aspects of the Oxera work, both being sector wide assessments, and recognised that station retailers and caterers, export-related impacts and induced impacts were not included. Further, the Oxera economic impact approach included day to day expenditure by train operators and Network Rail but not work of a capital nature undertaken by the sector.

The present study reflects these differences to the Oxford Economics work in that it considers the day to day expenditure of NTL and does not include the wider system supply chain of rail sector capital spend or station retailers and caterers. The Oxford Economics study noted that high levels of rail investment help explain GVA per worker levels that are higher than the UK average. The Oxford Economics work covers a wider basis with the whole railway system, though the present study uses some common secondary data sources and GVA translation approach. Some of the elements of the Oxford Economics work are considered in the section below.

¹⁰ How does rail contribute to the UK economy? Oxera (2015)
¹¹ The Economic Contribution of UK Rail, Oxford Economics (2018)

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Chapter Five
Corporate social impacts

Corporate social impacts

Overview

The previous sections have monetised the direct GVA impacts from employment, and indirect GVA impacts related to the supply chain, which can be robustly calculated within standard economic appraisal. There are, however, numerous other benefits of supply chain procurement and employment that cannot be readily monetised but can still be captured using qualitative approaches.

The qualitative socio-economic benefits of NTL's operation can be considered with reference to standard methodologies, in particular the rail industry's Common Social Impact Framework (CSIF), which brings together a library of social impact metrics and monetised values across social, economic and environmental elements.

Employees and skills

Diversity

Within its recruitment procedures, NTL aims to attract a more diverse range of candidates from typically underrepresented groups in the sector such as women, BAME, people with disabilities, those currently unemployed, former offenders and younger candidates.

There is value in targeting and reporting the share of job role applicants and new starters within these priority groups and to demonstrate improvement.

NTL records the gender and BAME employee shares with annual targets. For the year to date, NTL has 17.6% female workforce participation, which is slightly below its target, and a BAME workforce participation of 4.6% which is slightly above the target. There has been some impact due to COVID-19 on NTL's recruitment. However, it is anticipated that the bespoke attraction campaign as part of NTL's recruitment plan could boost the achievement of these diversity targets. NTL is also working toward Investors in Diversity accreditation.

There is clear social value to having people move from unemployment to employment, and the CSIF provides valuations per person (£14,443 for each adult moving from unemployment to full time employment) according to the HACT Social Value Bank, which can be applied to such new starters at NTL.

"Be Northern, Be You"

- "Be Northern, Be You" is NTL's new recruitment campaign, seeking to recruit 160 new roles to help deliver its ambitious plans.
- The campaign will seek to engage potential employees from the diverse communities that NTL serves, including adverts on targeted websites such as [workingmums.co.uk](https://www.workingmums.co.uk) and [diversityjobsite.co.uk](https://www.diversityjobsite.co.uk).

Chapter summary

- NTL has an ambitious apprenticeship scheme, which has grown to encompass a total of 500 apprentices as of early 2022.
- NTL supports a total of 21 Community Rail Partnerships, bringing together local communities and the rail industry to engage with the wider community and encourage use of the lines they represent.
- NTL operates an ISO14001 accredited Environmental Management System. Rolling stock energy consumption / emissions are monitored, and operating procedures for trains and depots are designed to minimise impacts of noise on communities close to the railway and diesel emissions within closed station environments.
- NTL's supply chain policies take account of suppliers' social and environmental performance.

Corporate social impacts

Apprenticeships

Apprentices are recognised as a social value contributor for organisations, and the CSIF provides an approximate average value per apprentice of £2,400 following the HACT Social Value Bank and recognising the goal and metrics used for Crossrail and HS2. Recruitment of apprentices from priority groups can also further increase further social value.

NTL provides a range of apprentice opportunities with a total of 500 as of early 2022. These include:

These include:

- New apprentice drivers given level 3 train driver training programmes
- New apprentice conductors given level 2 transport and onboard station programmes
- 16 engineering apprentices recruited on 3-year level 3 programmes
- 5 operational and train planning apprentices recruited on level 3 programmes
- 5 project management and business administration apprentices are recruited on 2-year level 4 programmes
- 25 frontline employees on leadership level 3 programmes
- 3 MSc level 7 programmes in leadership at Manchester University
- Graduates undertaking level 4 apprenticeships in leadership
- Further apprentices supported in IT, warehousing and train presentation and cleaning services.

A high-level proxy value for NTL's annual apprenticeship coverage is an estimated £0.75 million in social value beyond the apprentices' wages based on CSIF.

Staff development

Employee training is recognised within the CSIF as providing benefit to the individual, organisation and society in general. UK average values per person completing training (accredited and non-accredited training) are included as £1,100 - £1,600 per person as a general guide. NTL provides a range of employee training including:

- Corporate and dedicated induction role-dependent programmes
- E-learning programmes on NTL Management Systems
- Leadership induction
- Leadership skills boost programmes
- Technical and safety training
- Role-specific technical training
- Level 3 in deaf awareness (30 colleagues per annum).

NTL employee engagement feedback is monitored including real-time information, where employment opportunity, training and wellbeing initiatives are important contributors to employee satisfaction.

Staff wellbeing

Employee wellbeing, both physical and mental, is important in supporting individuals with improvements in their wider life outcomes, whilst supporting the performance and resilience of the network and its teams.

The CSIF recognises the value to employees in engaging with wellbeing programmes alongside the benefits of reduced absenteeism, better health outcomes and in having a safe and secure working environment.

NTL provides a health and wellbeing hub with guidance materials and supports employee wellbeing including counselling services, occupational health provision, Health 'MOTs' at depots/stations, mental health workshops, a cycle to work scheme and employee activity challenges.

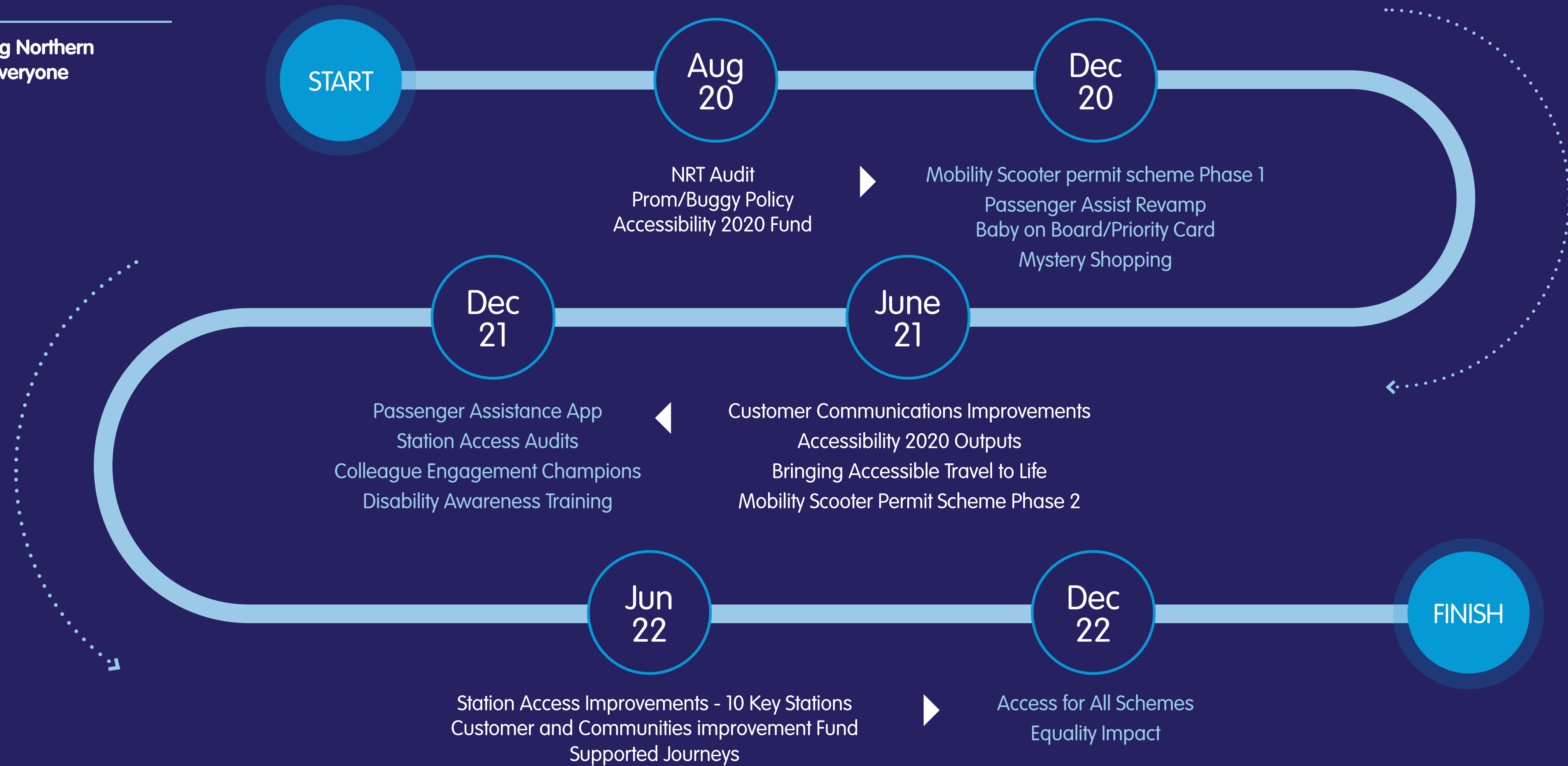
Users and community

Providing an accessible network is a critical aim of the rail sector and the value of this is reflected with the CSIF accessibility module, with guidance on goals, indicators and reporting approaches.

NTL is working with the Northern Accessibility User Group (NAUG), a group of disabled people with various impairments who have an interest in independent travel, using their experiences to shape accessible travel and remove the barriers to inclusive and accessible rail travel. Insights from this programme are informing station accessibility improvements and employee training and guidance to support colleagues and customers with disabilities.

Corporate social impacts

Figure 7: Making Northern accessible for everyone



Corporate social impacts

Accessibility to the NTL's services is also aided by the affordability of its fares, with an average per trip of £3.12 compared to a regional average of £4.10 and £4.27 for London and the South East.

Community value is also provided by NTL with the collection of charity donations at stations, collaboration with suicide prevention agencies including the Samaritans and work with charities to educate managers.

NTL supports a total of 21 Community Rail Partnerships across its network, investing approximately £1m a year to pull together the railway and local communities to bring station buildings back to life, mobilise art and education projects and organise special events to promote the railway and its relevance to the community.

Station safety is supported with the installation of defibrillators, CCTV and trespassing and crime prevention plans with a focus on identified incident hotspot areas.

Environmental impacts

NTL undertakes numerous initiatives to reduce the environmental impacts of its operations. These include active management of energy efficiency of trains, carbon emissions, air pollution and noise. NTL seeks to manage and control environmental impacts through its corporate Environmental Management System, certified to ISO14001.

NTL measures the energy efficiency of its trains, currently focusing on fuel consumption of the diesel fleet, and will in future monitor energy consumption of electric trains. Fuel consumption is systematically monitored with data used to maximise operational efficiencies, including training drivers in using the most appropriate gears at different speeds. Fuel and electricity consumption data is then used to inform estimated carbon emissions. A Rolling Stock Strategy is currently being developed.

In general, the impact of diesel trains' on air quality is limited by the number of sensitive receptors in the vicinity of the railway. Most stations are open but there are some specific challenges where stations are enclosed, most notably at Manchester Victoria. However, passengers do not spend extended periods of time on platforms so the exposure to diesel emissions is limited. NTL works closely with Network Rail to monitor emissions and minimise the standing time of trains in enclosed station areas.

Train services generate noise in urban areas which can, at times, have impacts on local communities. NTL actively monitors complaints data and undertakes noise surveys where there are consistent patterns of complaints. The greatest challenges tend to be in areas close to depots, where rolling stock is moved, for example in Blackpool, where tracks are elevated and close to residential properties. In response, NTL has developed operating procedures to minimise the impacts on sensitive residential areas.

NTL also works closely with Network Rail to maximise the biodiversity benefits of the railway using a Natural Capital approach. This includes working with the Wildlife Trusts on planting schemes and farmers adjacent to the railway to promote pollinator-friendly planting and to prevent landslips.

Supply chain

Through implementing specific criteria in its procurement practices, NTL considers how suppliers help to support social improvements.

Local and sustainable procurement is one of the CSIF topics in making procurement more inclusive with framework goals of a diverse supply chain, development of new suppliers, local supply chains, prompt payment and the management of ethical and environmental risks.

In procurement, NTL considers:

- The role of SMEs in different parts of NTL's supply chain, both direct and via Tier 1 suppliers, including capacity building for local companies to supply NTL goods and services.
- Diversity amongst supplier companies, including balance of different groups of people amongst employees and senior leaders.
- Supplier companies' environmental policies, including responsible input use, carbon management, waste reduction and pollution prevention.
- The overall approach to social value with suppliers, including how they maximise the social benefits of their operations, for example engagement with young people, apprenticeships, volunteering etc.
- The use of local suppliers can generate greater regional impacts as GVA and associated employment.

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Chapter Six

User benefits

User benefits

Overview

The rail network plays a critical role in meeting the connectivity needs of many people who live and work in the North.

NTL's passengers expend a total of £1.25 billion in fares and generalised journey time each year. We can infer that the value of economic activity supported by these journeys must be equal to at least this figure or there would not be incentive to make the journey.

While this simple valuation will capture the user benefit enjoyed by NTL's passengers, it will also incorporate a portion of the value of the economic activity that the rail trip supports, while also excluding any consumer surplus enjoyed by users.

This chapter seeks to isolate from this sum the value that people place on the services provided by the rail network (i.e. 'user benefit'). This is represented, in part, by the time they spend travelling, weighted based on their journey purposes.

It would not be reasonable to equate the total value of users' travel time and cost to the economic value of the existence of NTL's network; in practice people's journeys, employment types, and even land use would fundamentally change in response to significant changes in rail service provision.

In order to provide a representative estimate of the user benefits generated by NTL services, a valuation of how users' time and costs might change with incremental changes in service provision has been prepared.

Incremental changes in timetabled services of 10%, 20% and 40% have been tested. Findings from these tests have been extrapolated to 100% to provide an indication of the scale of user benefits produced by the entire NTL network.

An illustration of the methodology adopted is shown in Figure 8 outlining the input, guidance used and key stages of the analysis leading to the output. This overarching approach applies to both the user benefits considered in this chapter and the non-user impacts in Chapter 7.

Valuation in relation to NTL services

This assessment follows the guidance for estimating Level 1 benefits (which assumes fixed land use and perfect markets) from the DfT's Transport Appraisal Guidance (TAG) Unit A2.1.

It is assumed that the economic value to train users is at least as great as their journey 'costs' in terms of the values of their time spent. This has been estimated using the following equation, with details of the methodology employed provided in Figure 8 on the following page:

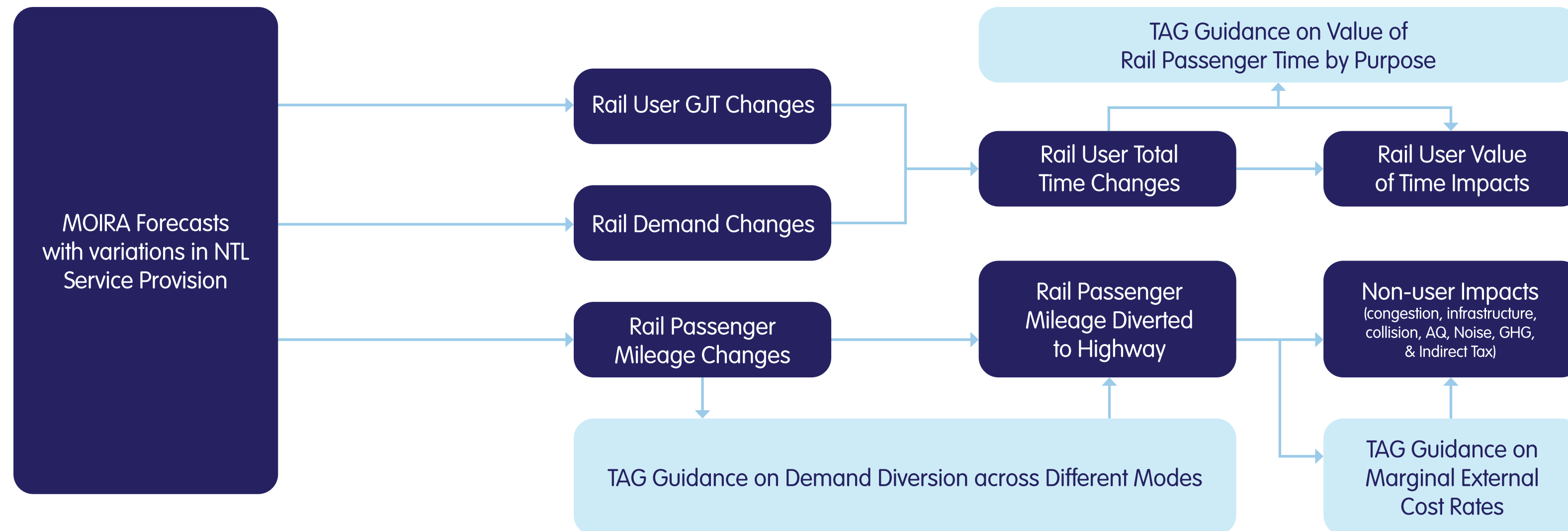
Total user costs = Demand x Generalised Journey Time x Value of Time

Chapter summary

- In delivering passengers to their destinations, NTL's operations support economic activity of at least £1.25 billion per year.
- The user benefit enjoyed by NTL's passengers has been estimated at £416m a year.
- These benefits are concentrated in the major cities of the North where NTL services operate dense urban networks with frequent services.

User benefits

Figure 8: Approach to valuing user benefits



- Rail demand data sourced from MOIRA1, accessed with the permission of the Rail Delivery Group (RDG), comprises Generalised Journey Times, journey distances and passenger numbers by ticket type for each origin-destination pair in England, Scotland and Wales.
- User costs are calculated for each ticket type for all origin-destination journey pairs using the available national rail services, including NTL's services.
- Ticket types (i.e. full, reduced, or season ticket fares), distance bandings and standard PDFH conversion factors are applied to estimate the distribution of trips by journey purpose.
- Rail passengers' average values of time, for commuting and leisure journey purposes, as well as distance-banded values of time for business travel, are sourced from TAG Databook.¹²
- The changes in Generalised Costs resulting from incremental or decremental changes in NTL's service frequencies using hypothetical, randomised reductions in services.¹³

¹² TAG Data Book, July 2020, v1.14
¹³ MOIRA1 scenarios have been run by cutting 10%, 20% or 40% of NTL's timetabled services to determine the scales of impact, and although this modelling approach strictly represents decremental changes, in practical terms the scales of impacts are likely to be of a similar order of magnitude for increasing services.

The calculated differences in user costs, compared to the current full timetable of services, therefore represent the estimated losses or gains in perceived user benefits that could accompany any reductions or increases, respectively, in NTL's timetabled service provision.

Recognising that any reductions or increases in NTL's services would result in corresponding reductions or increases in overall numbers of passengers, this study also applies the 'rule of half' principle¹⁴ for estimating economic impacts where there is a variable demand response to service changes.

As noted previously, all user cost impacts are disaggregated by journey purposes to consider business users, commuters and leisure users, in order that the impacts on business users can be treated as a direct productivity impact, which affects GDP.

Risks / issues and mitigations in the process

MOIRA is designed to recognise demand responses to relatively small changes in rail services (guidance suggests <30% change to generalised journey time). Acknowledging this, the 10%, 20% and 40% changes in services have been specified to ensure that MOIRA provides a reliable simulation of the impacts while also establishing the relationship that can be extrapolated to 100% (i.e. to provide an indication of the scale of user benefits produced by the entire NTL network).

In addition, MOIRA does not correctly attribute passengers and revenue between train operators for operator-specific services and routed fares. For example, there is a known issue of attribution of demand between NTL and TransPennine for journeys between Leeds and Manchester.

Furthermore, the MOIRA data has issues in relation to the 'high-level' approach to testing timetable changes and implications of its use in this study. These risks to the study are summarised in the following Table 12, together with brief discussion of the mitigation applied in the analysis.

Table 12: Key risks considered and mitigated

Risks and potential issues	Mitigation
MOIRA's application is limited to GJT changes of <30%	Service level changes of 10%, 20% and 40% have been simulated to remain within reasonable bounds of MOIRA's limitations.
Potential bias introduced by arbitrary service reduction tests in the time available, particularly at a granular level.	Reporting is based on averages over five random tests undertaken for each level of timetable change to assess variation in the total and at a granular level.
Limitation of MOIRA in handling TOC specific ticketing (e.g. Leeds – Manchester)	Compared with GB rail finance data, MOIRA is reflecting franchise revenues well at the absolute level although it treats all tickets as inter-available so may fall short when dealing with operator specific ticketing. This can be significant for a specific service but relatively modest if viewed in the context of the overall economic value of the franchise. Managed through reporting.
Mismatch between 18/19 demand and the latest timetable in the MOIRA model available	A global uplift factor has been derived using the change in revenue between 2018/19 and 2019/20 as a proxy for the demand differences.

¹⁴ An established economic theory to measure consumer surplus which is also referenced in DfT's TAG Unit A1.3 User and Provider Impacts.

Key findings on current 'user benefits' of services

Headline findings on the impacts of incremental changes in NTL's services are summarised in Table 13, which provides the national and regional totals of the estimated user impacts on an annual basis.

A 10% incremental change in NTL's service would produce a +/- £31.4 million impact from user benefits related to changes in journey times. Of this total, 92% of impacts would be realised in the North, with a strong focus on the Yorkshire and Humber and North West regions as expected.

Higher levels of incremental shift in service provision show that there is a non-linear relationship between the degree of change in services and the consequent changes in user benefits. Doubling the change in services from 10% to 20% results in more than double the impacts on users (from £31.4 million to £68.8 million). A further doubling from 20% to 40% increases the impact to almost £160 million.

Table 13: User benefits by region (£m per year, 2020 prices)

Region	Incremental change in NTL services		
	+/-10%	+/-20%	+/-40%
North East	£1.7	£3.4	£7.8
North West	£14.8	£33.0	£77.1
Yorkshire and The Humber	£12.4	£26.4	£60.0
Rest of UK	£2.6	£6.0	£14.1
Total	£31.4	£68.8	£159.0

Extrapolating the non-linear relationship between level of service and user benefit to simulate a hypothetical scenario where there were no services returns a total user benefit for the network of **£416 million per year**.

Disaggregating the user benefits geographically (Table 14 and Figure 9) shows the ten sub-regions with the largest levels of user impacts on an annual basis for incremental 10%, 20% and 40% changes in NTL services. These ten sub-regions account for approximately 60% of total impacts felt across the North.

The highest benefits are seen in the urban areas with the densest population that are heavily dependent on NTL's network, namely Leeds, Bradford and Manchester.

The substantial impact identified in West Yorkshire highlights the fact that Leeds is the biggest city in Europe without a dedicated mass transit system, with NTL's dense local network in this area instead fulfilling this role. Significant user benefits are also enjoyed by residents of large rural areas in North Yorkshire and Cumbria.

User benefits

Figure 9: Geographic distribution of user benefits resulting from +/-10% in NTL services

User Benefits +/- 10%

- +/- £0 - £100k
- +/- £100k - £500k
- +/- £500k - £1m
- +/- £1m - £2m
- +/- £2m - £3m

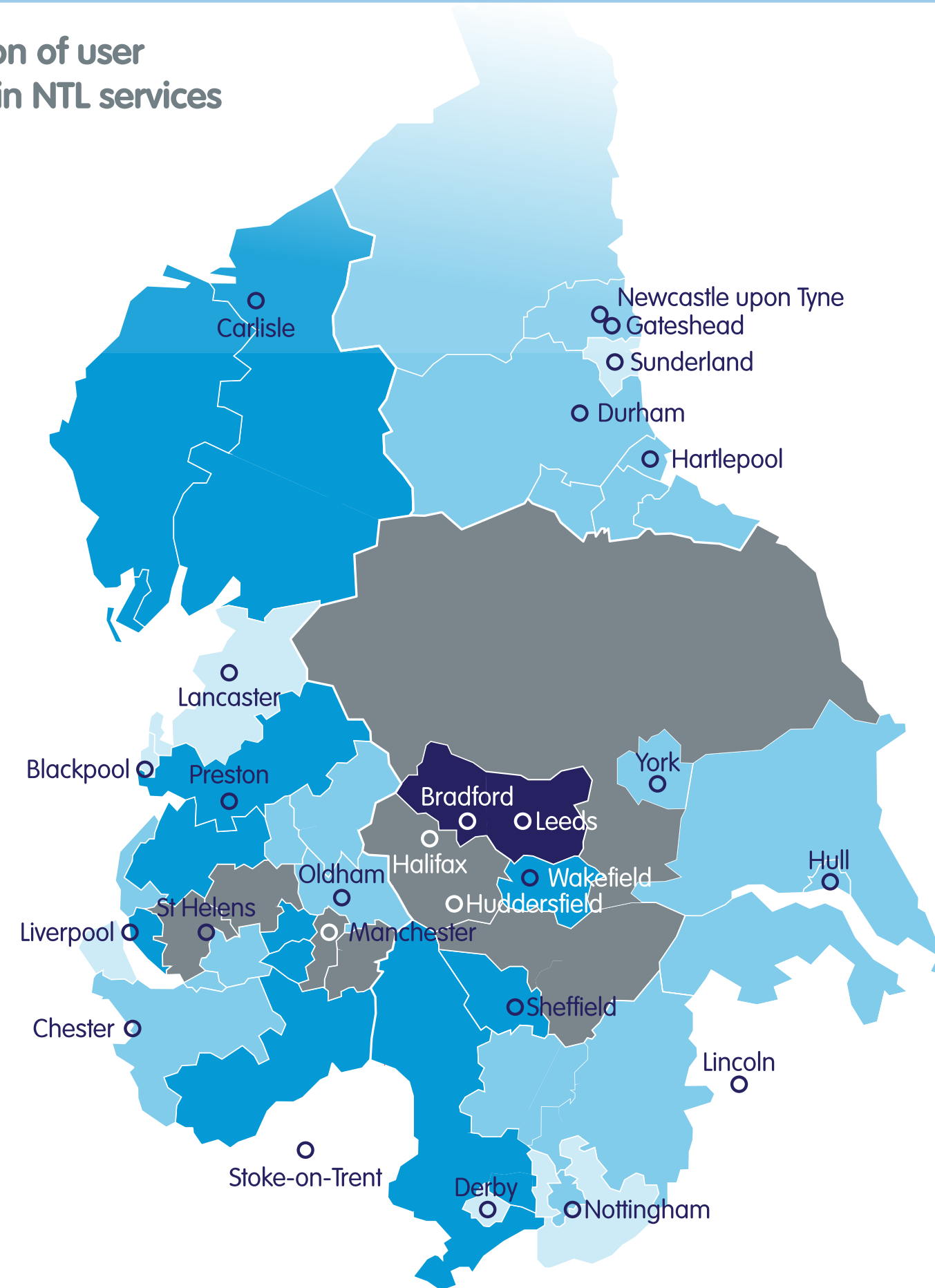


Table 14: Top 10 sub-regions by user benefit (£m per year, 2020 prices)

Sector	Incremental change in NTL services		
	+/-10%	+/-20%	+/-40%
Leeds	£3.0	£6.2	£13.8
Bradford	£2.5	£5.5	£12.4
Greater Manchester South East	£1.9	£4.6	£10.5
Greater Manchester North West	£1.8	£3.8	£8.9
Manchester	£1.8	£4.0	£9.2
North Yorkshire CC	£1.5	£3.0	£7.2
Barnsley, Doncaster and Rotherham	£1.4	£2.7	£6.2
Calderdale and Kirklees	£1.3	£2.9	£6.5
East Merseyside	£1.2	£2.6	£5.8
Liverpool	£1.0	£2.1	£4.8

It should be noted that the impacts from service changes will vary depending on the way such changes are applied (i.e. how, where and at what time of day the changes are made). The analysis undertaken for this chapter is not based on a detailed timetabling exercise, instead it has relied on conducting multiple tests to minimise sampling bias.

7

Chapter Seven

Non-user benefits

Overview

Another aspect of how the rail network plays a critical role in meeting the connectivity needs of its users can be considered in terms of its potential effects on non-users and the broader economy and environment.

If the NTL network provision ceased, some rail users would not make their normal journey (because they would choose to live and work in different places) and other people would be forced to travel by road. On the other hand, an increase in rail provision could result in a corresponding increase in user demand and reduction in travel by road.

To consider the values of these potential impacts, the 'marginal external costs' approach described in TAG Unit A5-4 has been used. This approach estimates the impacts of mode shift, primarily in terms of shifts between rail and road-based transport.

These include changes in:

- costs of congestion
- maintenance of infrastructure
- collisions on highways
- local air quality, noise, greenhouse gases
- indirect taxation impacts relating to fuel consumption.

Valuation in relation to NTL services

The MOIRAI outputs discussed in the section on User Benefits provide the changes in rail passenger mileage that could be attributed to varying changes in service patterns.

These changes are factored using national 'diversion factors' from the TAG data book to estimate the numbers of people that would transfer to or from highway trips in response to changes in the provision of rail services:

- Diversion factors of 27% for short-distance (<20 mile) trips within PTE areas.
- 31% for short-distance trips outside PTE areas and 30% for inter-urban journeys.

On this basis, a 100 person-kilometre reduction in rail journeys would translate into an increase of 27-31 vehicle-kilometres on the road network.

Table 15 summarises the scales of change in distances travelled by rail and highways modes as a result of the +/-10%, 20% or 40% changes in NTL services.

Table 15: Changes in travel behaviour at varying degrees of change in NTL services

Average change in travel distances (million-km / year)	10%	20%	40%
Rail passenger-km reduction (or increase)	95	203	447
Road vehicle-km increase (or reduction)	28	61	134

Key findings on 'non-user benefits' of services

Headline findings on the non-user impacts of incremental changes in NTL's services are summarised in Table 16, which lists the regional and national non-user impacts on an annual basis. Overall, this analysis further reflects that there is a non-linear relationship between the degree of change in services and the consequent changes in user benefits – i.e. doubling the change in services from 10% to 20% results in more than double the impacts on users.

Table 16: Non-user benefits by region (£m per year, 2020 prices)

Region	Incremental change in NTL services		
	+/-10%	+/-20%	+/-40%
North East	£0.4	£0.8	£1.7
North West	£2.6	£5.5	£12.3
Yorkshire and The Humber	£2.6	£5.4	£11.7
Rest of UK	£0.8	£1.8	£4.3
Total	£6.3	£13.5	£30.0

Chapter summary

- NTL's services help to reduce highway congestion, infrastructure maintenance, accidents, noise, greenhouse gases and improve air quality. The value of these impacts has been estimated at £75 million per year.
- These benefits are concentrated in the major cities of the North where NTL services make a significant contribution to reducing travel by private car.

Non-user benefits

Extrapolating the non-linear relationship between level of service and non-user benefit, to simulate a hypothetical scenario where there were no services, provides an estimate of total non-user benefit for the network of £75 million per year.

This summary also indicates that around 88% of the non-user impacts of changes in NTL's services are in the North, which is less than the 92% of user impacts experienced in the North. This effect reflects that most passengers using NTL's services are short-distance trips within PTE areas (especially Greater Manchester and West Yorkshire), and that these passengers would have more transport options available to make the same trips, for example, using buses within urban areas. The diversion factors for shorter trips would, therefore, tend to be lower than those for longer distance trips – hence more mode shift between road and rail on longer distance trips.

Table 17 summarises the total non-user impacts on an annual basis, as well as the ten northern NUTS3 area with the largest impacts, for 10%, 20% and 40% changes in NTL services. These ten areas account for just under 60% of total impacts felt across the North. Similar to the observations in the user benefits forecast, these findings reflects the importance of NTL services for maintaining good access into the urban centre from the rest of the city region and for keeping cars off the roads (through providing a service similar to urban transit).

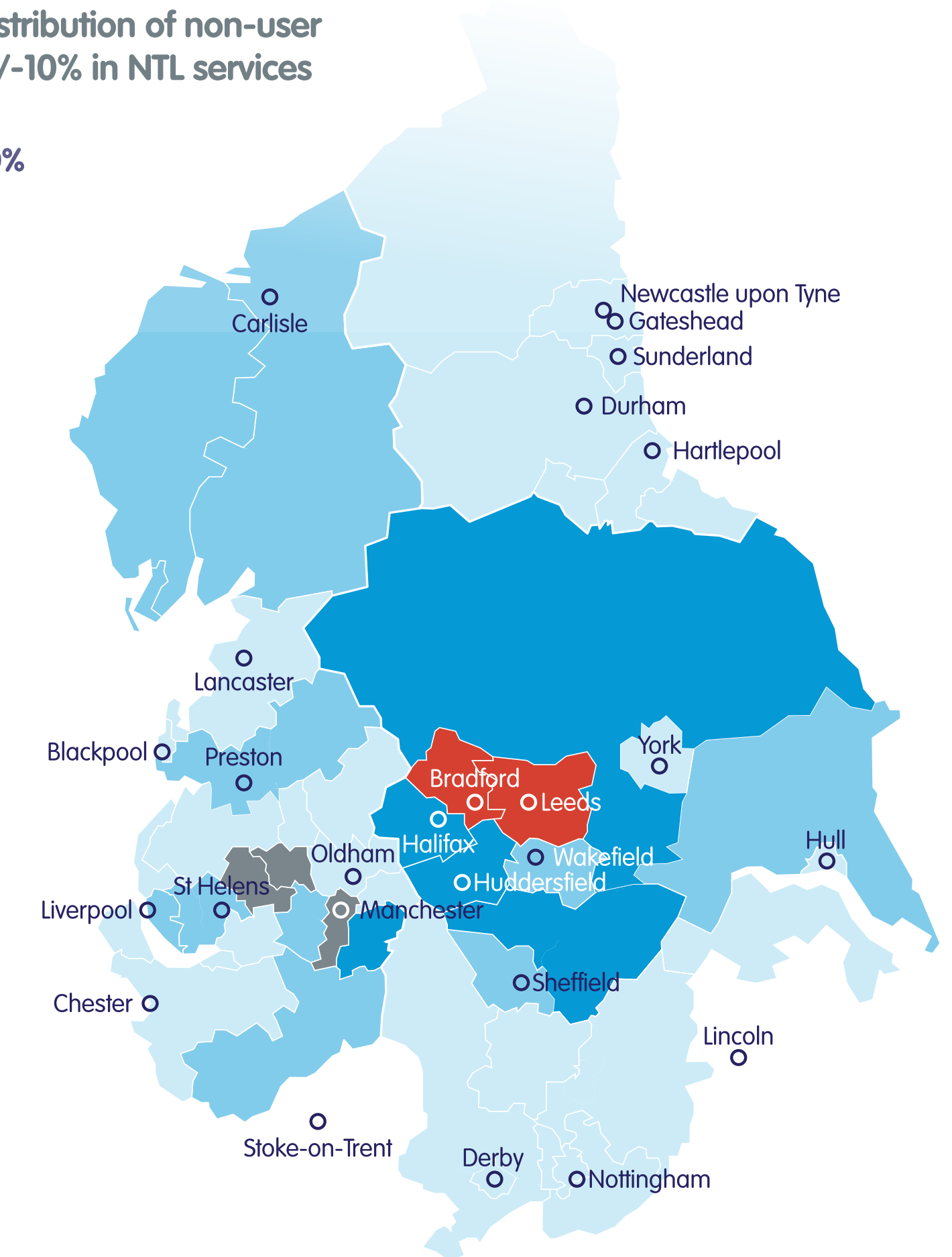
Table 17: Top 10 sub-regions by non-user benefit (£m per year, 2020 prices)

Region	Incremental change in NTL services		
	+/-10%	+/-20%	+/-40%
Leeds	£0.6	£1.2	£2.5
Bradford	£0.5	£1.1	£2.5
Manchester	£0.3	£0.8	£1.6
Greater Manchester North West	£0.3	£0.7	£1.5
Calderdale and Kirklees	£0.3	£0.6	£1.3
North Yorkshire CC	£0.3	£0.6	£1.4
Barnsley, Doncaster, Rotherham	£0.3	£0.5	£1.2
Greater Manchester South East	£0.3	£0.6	£1.2
Wakefield	£0.2	£0.4	£0.9
East Merseyside	£0.2	£0.4	£0.8

Figure 10: Geographic distribution of non-user benefits resulting from +/-10% in NTL services

Non-user Benefits +/- 10%

- Lightest blue circle: +/- £0 - £100k
- Light blue circle: +/- £100k - £200k
- Medium blue circle: +/- £200k - £300k
- Dark blue circle: +/- £300k - £400k
- Very dark blue circle: +/- £400k - £500k
- Red circle: +/- £500k - £600k



Chapter Eight

Agglomeration

Agglomeration

Overview

Economic productivity can be affected by the quality of physical connectivity between companies or workers. For example, enhanced linkages between firms and their supply chain can increase productivity through improving market interactions and knowledge spill-over.

Changes in transport connectivity can aid this process through affecting the density of a functional urban area or industry hub. Increased rail services for example may reduce travel times between a geographically dispersed group of companies and in effect create a denser concentration of industry, whilst also providing access to a wider pool of skilled workers.

This process can be measured through the calculation of agglomeration, the mass or clustering of industry. Urban agglomeration benefit is measured by uplifts in the productivity of workers and businesses due to the improvement in their access to economic mass.

In this context, access is measured by travel cost between places and clusters of activities where NTL services will play a major role, and economic mass is represented by employment (i.e economic activities) in different sectors. The remainder of this section documents how changes in NTL services may enhance the access to economic mass in the local region, thus leading to a net contribution to the economy by making businesses and workers more productive.

The calculation of agglomeration for the purpose of this study uses guidance from TAG Unit 2.4 and requires steps to:

- Determine the average generalised travel costs between each origin and destination zone, weighted by journey purpose.
- Calculate an effective mass of employment by weighting the weighted generalised travel cost by the number of jobs at the destination.
- Generate a monetary impact of productivity through comparing the level of service in the current and alternative scenarios for each origin and destination by industry.
- Combine all zones and industries to determine the overall clustering impact of the alternative.

Valuation in relation to NTL services

To enable the quantification of the effective density measures at Local Authority level, data was:

- Provided from the Transport for the North's Northern Rail Model (NoRMs) to understand journey costs and time for public transport between zones.
- Extracted from Bing highways data to find travel times to which values of time, fuel and non-fuel costs from the TAG Databook were applied.

MOIRA1 was used to understand how incremental +/- 10%, 20% and 40% changes to the service provided by NTL would affect journey costs between Local Authorities. The alternative rail travel cost is calculated through applying the formula:

$$\frac{(\text{Total background cost} + \text{net change in cost})}{\text{new total rail demand}}$$

Key findings on agglomeration

An incremental +/-10% alteration in NTL's services across the network is forecast to result in an **£9.8 million** change in agglomeration across the UK, 77% of which will be seen in the North.

The changes in agglomeration from +/-20% and 40% grow in a broadly linear pattern, although impacted by application of elasticities.

Chapter summary

- Agglomeration effects associated with NTL's services have been estimated at £73m a year.
- These benefits are concentrated in the major cities of the North where NTL services operate dense urban networks with frequent services, offering much better journey times than by private car.

Agglomeration

Table 18: Impact of change on agglomeration (£m per year, 2020 prices)

Region	Incremental change in NTL services		
	+/-10%	+/-20%	+/-40%
North East	£0.9	£1.9	£4.0
North West	£3.6	£7.4	£16.3
Yorkshire and The Humber	£3.1	£6.0	£12.9
Rest of UK	£2.2	£4.6	£10.1
Total	£9.8	£19.9	£43.3

Extrapolating the non-linear relationship between level of service and agglomeration, to simulate a hypothetical scenario where there were no services, provides an estimate of total agglomeration benefit for the network of £73 million per year.

Sub-regionally (shown in Figure 11), the largest changes in agglomeration are seen in areas with the greatest densities of employment and population, coupled with a significant reliance on the NTL network, such as Leeds/Bradford, Barnsley/Doncaster/Rotherham, and the non-central areas of Greater Manchester.

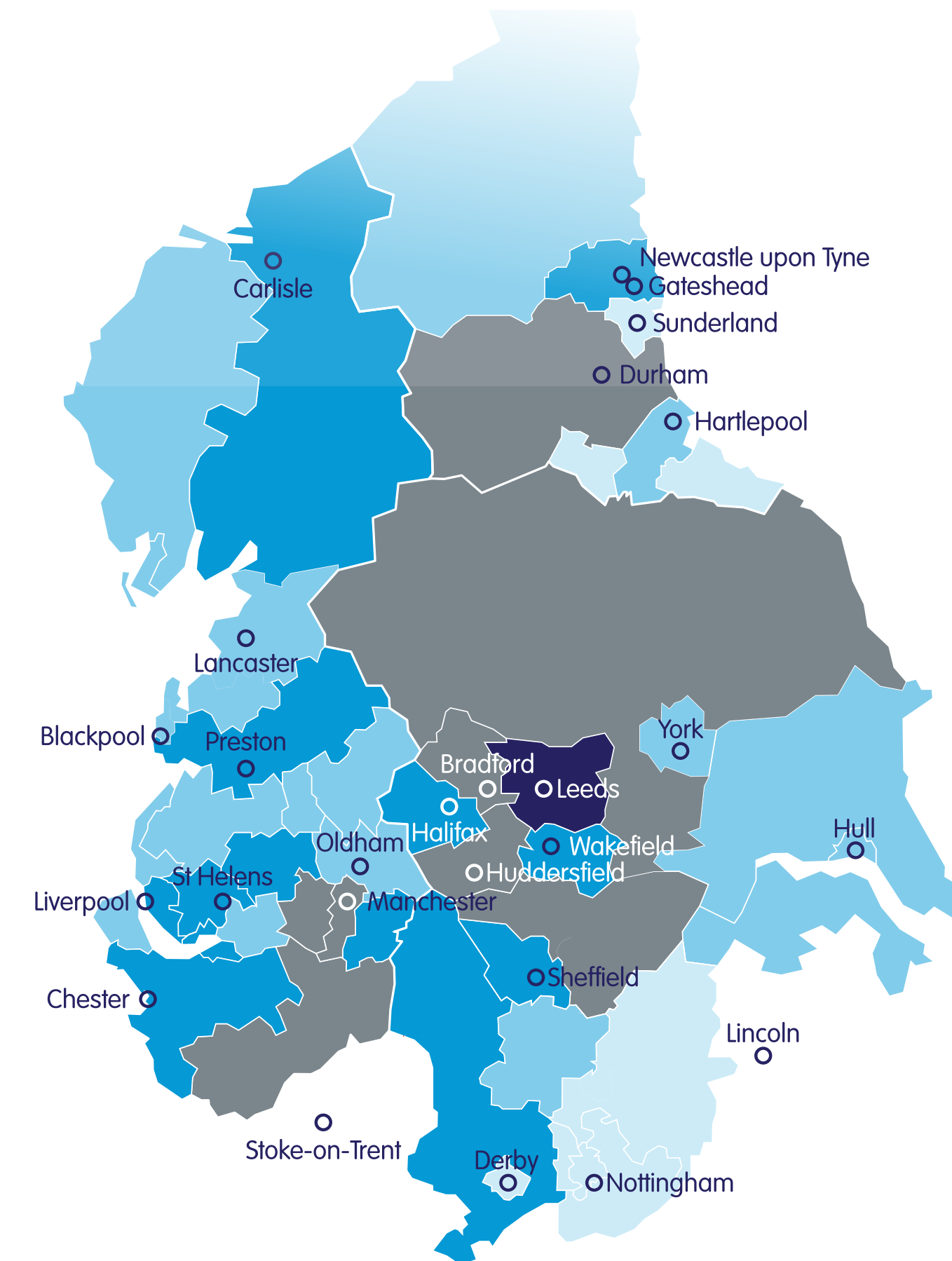
This focus on West Yorkshire in the revealed spatial distribution pattern again agrees well with similar patterns in the user and non-user impacts. It reflects the vital role that NTL services play in the local economy by providing the needed access to employment mass to keep businesses efficient and productive.

Despite high concentrations of industry in the Tyne and Wear area, there are lower agglomeration impacts because the area is served by the Tyne and Wear Metro (with a much more limited local heavy rail network). The impacts are also more limited in Merseyside because large parts of the conurbation are instead served by Merseyrail services.

Figure 11: Geographic distribution of agglomeration resulting from +/-10% in NTL services

Agglomeration

- +/- £0 - £75k
- +/- £75k - £150k
- +/- £150k - £300k
- +/- 300k - £450k
- +/- £450k - £800k



9

Chapter Nine

Option and non-use values

Option and non-use values

Overview

A person's willingness-to-pay for a service option, whether they use it or not, is a key consideration when understanding the value to society for public transport provision.

This value can be presented through calculating:

- The option value – willingness-to-pay for the preservation of a transport option.
- Non-use value – willingness-to-pay for an option that is never personally used for altruistic reasons or reasons of indirect use.

Unlike user and non-user benefits or agglomeration, option and non-use values cannot be determined by an incremental change in service – only whether a service exists or not. For NTL, the option and non-use value is therefore related to the cessation of all services and closure of stations.

Valuation in relation to NTL services

TAG Unit 4.1 provides a general methodology for calculating option and non-use values including the following assumptions:

- A value can only be applied to stations which are losing all services as a result of NTL cessation, and cannot be applied where another TOC serves the same station (henceforth referred to as Shared).
- Values can only be applied to stations which provide what can be considered a commuting service. Therefore, stations which only provide a limited service (e.g. weekend only service) are discounted.
- Values cannot be attributed in connection to mainline stations or those which provide predominantly for long-distance trips.
- The TAG Databook provides a maximum value of £242 per household for rail and £122 per household for bus services.
- PDFH states that the standard household catchment for most stations in urban areas is 2km, whereas for 'free-standing towns' a catchment can be larger.

These assumptions have been incorporated into the following methodology:

- Select only stations on the NTL network which are exclusively served by NTL and provide a regular weekday service which provides connectivity for commuters.
- Using the 2011 Census Output Areas:
 - Use a 2km household catchment for all stations that are within 10km of a city or large town with over 50,000 residents.
 - Use a 4km household catchment for all free-standing stations.
- Remove households that fall within the catchments of stations served by alternative TOCs.
- Apply the following option and non-use values (2010 prices):
 - £120 value to all households within cities and larger towns on the basis they are likely to still retain a frequent bus service that can provide for commuting trips.
 - £242 value to households from the free-standing station catchments which will have no acceptable public transport alternative.

Chapter summary

- NTL is the sole provider of rail access for approximately 25% of all households in the North.
- The economic value of these services to those people that do not currently use rail is estimated at £357 million per year.
- These benefits are concentrated in those areas where NTL is the only operator for most people, such as South East and South West Greater Manchester, and the Barnsley, Doncaster, Rotherham area.

Option and non-use values

Key findings on option & non-use values

The assessment (summarised in Table 19) found that NTL provided exclusive rail access to approximately 25% of all households within the region. Of those, 80% are within close proximity to large towns and settlements, which is unsurprising given the population distribution across the North.

A total contribution of **£356 million** (once converted to 2020 prices) in option and non-use value is provided by the NTL network.

Table 19: Option and non-use value statistics

Criteria	Households	Option & non-use value £m - 2020 prices
Urban/suburban	1,452,536	£226.5
Free-standing	410,314	£129.0
Total	1,873,642	£355.5

The distribution of option and non-use values (Figure 12) follows a logical pattern throughout the North.

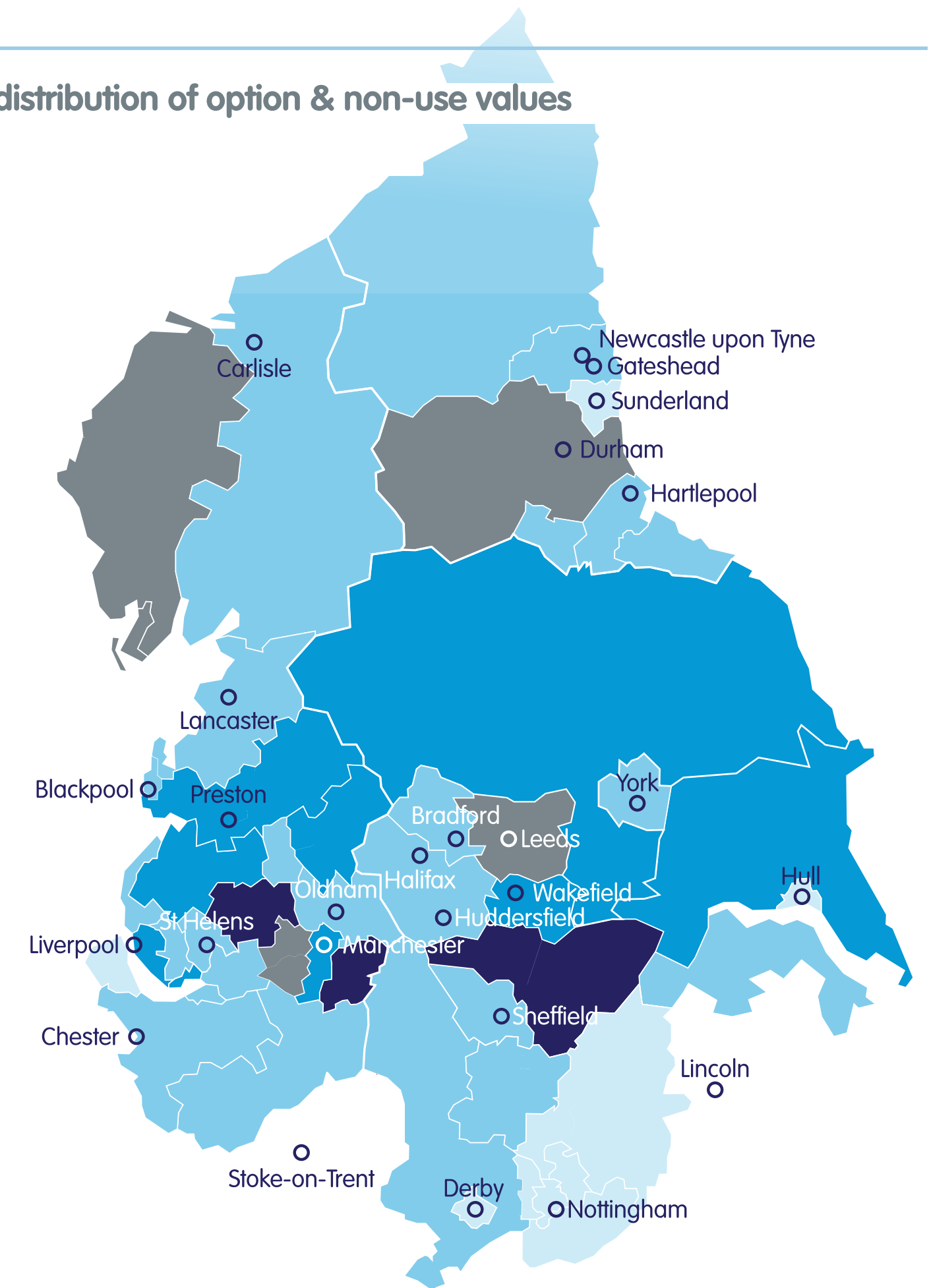
The lowest values are seen where NTL exclusively serves fewer stations, such as Calderdale and Kirklees or Tyne & Wear, or those with lower populations such as East Cumbria.

The highest values are in locations with high populations and where NTL exclusively serves a majority of stations such as the South East and South West Greater Manchester, and the Barnsley/Doncaster/Rotherham area.

Figure 12: Geographic distribution of option & non-use values

Option and Non-Use Values

- £0 - £5m
- £5m - £10m
- £10m - £15m
- £15m - £20m
- £20m - £26m



10

Chapter Ten

Impacts of COVID-19

Overview

The COVID-19 pandemic has had unprecedented impacts on the UK's economy, society and transport system. Since March 2020 there have (so far) been three lockdowns, tiered movement restrictions and huge impacts on the ways in which people work, shop and travel.

This has resulted in long-term changes in the economy and society but at this point the extent of these changes is still unknown. There remain significant uncertainties in the speed of the economic recovery, structural changes in the economy and the ways in which people will choose to travel in the future. However, it is clear that the rail network can and must play a central role in helping the UK to build back better. It is equally clear that there are significant opportunities for Northern to benefit from these behavioural changes.

This section sets out evidence on the impacts of the pandemic on travel demand during the last two years, the factors influencing recovery over the next five years, and the ways in which the rail network, including NTL's services, must support the development of a more resilient, inclusive and sustainable economy in the North.

Use of the railway before the pandemic

The 2019 National Travel Survey¹⁵ provides personal travel statistics within Great Britain covering English residents. Table 20 provides a comparison between trip purpose by rail, road and for all modes for 2019 (i.e. pre-pandemic).

Table 20: Trip purposes by rail, car and all modes (2019)

Trip purpose	Rail	Car*	All modes
Commuting	47%	15%	15%
Business	10%	3%	3%
Education / escort	7%	10%	13%
Shopping / personal business	10%	42%	37%
Leisure	26%	30%	32%
Total	100%	100%	100%

Source: NTS0409. Car includes drivers and passengers.

This shows the differing trip purposes for travel by rail, car and all modes of travel. In particular, it clearly shows the importance of rail in catering for commuting (47% of trips, compared to only 15% of trips by car), business (10% of trips, compared to only 3% of trips by car) and leisure journeys, including day trips and holidays.

The national statistics for rail are strongly influenced by London, which is the UK's largest rail market. Other datasets show that rail markets outside London are less dependent on commuting. The Government statistical dataset on public transport¹⁶ includes data on numbers of passengers arriving into major cities during the morning peak. Table 21 shows these proportions for rail travel into London and major cities in the North.

Chapter summary

- In the period immediately after the first lockdown traffic flows, bus and rail use dramatically fell, by around 70% for cars, 90% for buses outside London and 95% for national rail.
- Whilst there is now more clarity regarding the rate and extent of recovery, there is still substantial uncertainty. The emerging industry view is that the commuting market may be impacted more significantly and permanently than leisure and business markets.
- The North may be less sensitive to the expected shift to home working than the South East and many other parts of the UK. Whilst there will be impacts in the larger cities such as Manchester and Leeds, the economies of many towns and cities in the North will remain dependent on physical travel due to their mix of industrial sectors.
- It therefore might be expected that there will be a stronger recovery in rail demand in the North, as observed immediately following the lockdowns in both 2020 and 2021, due to less exposure to the move to home working and a more diverse mix of demand types.

¹⁵ National Travel Survey: 2019 - GOV.UK (www.gov.uk)

¹⁶ Public transport (TSGB06) - GOV.UK (www.gov.uk) (Table rai0201)

Impacts of COVID-19

Table 21: Peak / Non-peak rail arrivals into major cities

City	AM Peak (07:00-09:59)	Non-peak (other times)
London	55%	45%
Newcastle	19%	81%
Sheffield	22%	78%
Manchester	33%	67%
Liverpool	34%	66%
Leeds	37%	63%

Source: Table rai0201, TSGB06. AM Peak = % of daily trips arriving 07:00 and 09:59

This shows that rail services into the cities in the North have a much more diverse customer mix than London, where demand is dominated by peak hour commuting trips. It is therefore critical to recognise the distinct needs of the North: the railway satisfies a much more diverse range of economic and social purposes than just commuting.

The analyses in this chapter consider the different drivers of travel demand, including residential and workplace activity (to understand impacts on commuting), together with shopping, leisure activity and business travel.

Framework for assessment of impacts

Figure 13 shows the framework that has been used for the assessment of the impacts of COVID-19 on rail demand, and most importantly, the critical role of the rail network in supporting the future economic recovery.

Figure 13: COVID-19: role of the rail network in supporting building back better in the North

Continue to next page

The rail industry at the heart of economic recovery

Immediate response (2020-2022)

Medium-term change (2022-2025)

Build Back Better (2022-2025)

Lifestyles and the economy



Working from home (where possible): office-based jobs

Continued travel to workplaces by key workers and other sectors

Focus on local communities (shopping in local neighbourhoods)

Impacts on bricks & mortar retail and hospitality in town and city centres

Large increase in online retail and home deliveries

Longer-term shift: hybrid models of working (home / office combination)

Structural economic shifts: changes in workplaces across different sectors

Changes in the roles of district centres (community hubs, local retail)

Weakening of retail and changes to more mixed uses in town centres

Continued growth of on-line retail, new logistics systems for distribution

Spatial planning to support delivery of the right homes in the right places

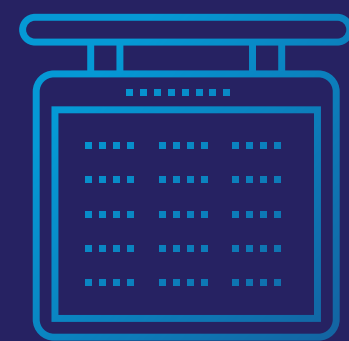
Planning to support delivery of high quality new jobs in the right places

Enable diverse and dynamic district centres to meet community needs

Support recovery of town/city centres at the heart of local economies

Sustainable logistics: manage goods vehicles, capitalise on rail freight

Travel patterns



Significant reductions in peak hour commuting, limited business trips

Changes to daytime trips: leisure, shopping and personal business

New models of part-time commuting, gradual recovery of business trips

Resurgence of leisure travel: tourism, shopping, socialising

High quality, low carbon travel options for commuting and business journeys

High quality, low carbon travel options to support visitor economies

Demand for rail travel



Large reductions in rail commuting and business trips

Some recovery in leisure markets during summer 2020

Major changes to rail commuting, recovery of rail business journeys

Recovery of rail markets for leisure and shopping

Services and ticketing to enable easy commuting and business travel

Convenient and competitive ticketing and services for shopping and leisure

Impacts of COVID-19

Immediate response

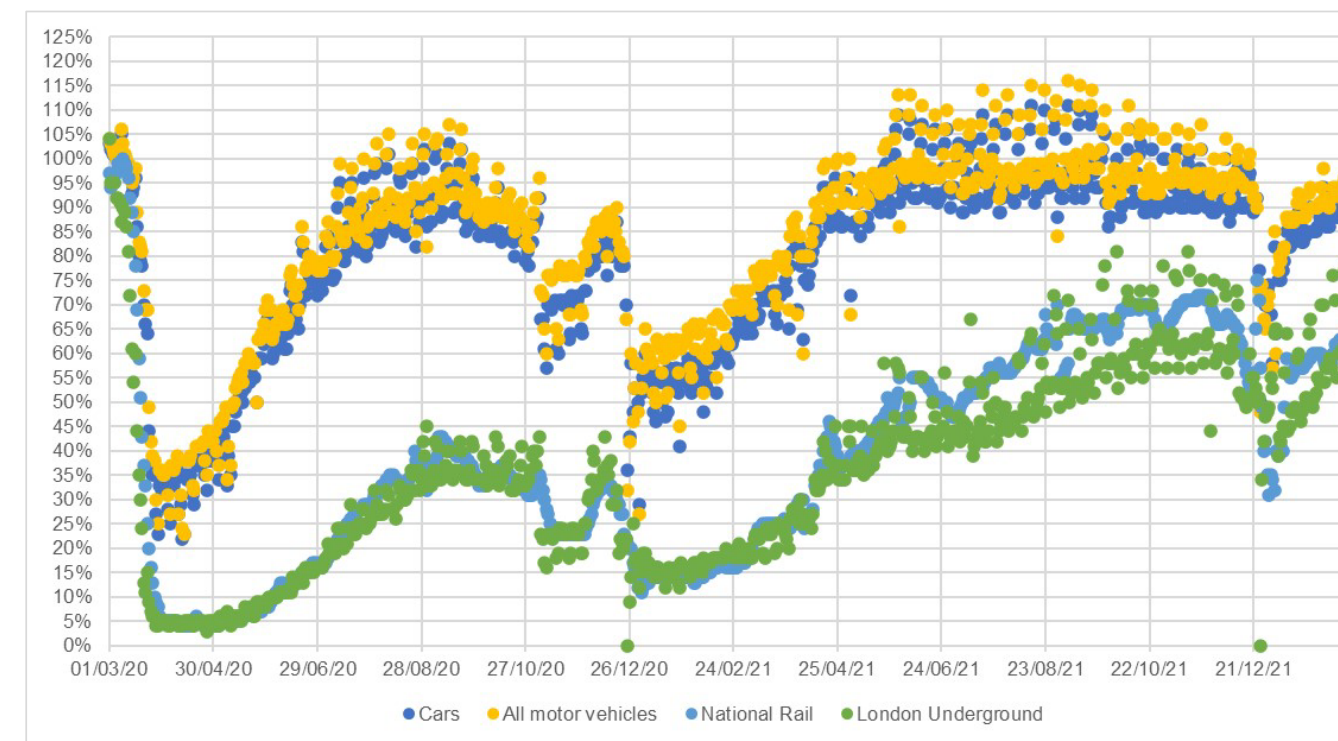
COVID-19 rapidly spread across the UK in early 2020, resulting in the Government instructing a national lockdown in late March. People were required to work from home where possible, travel to workplaces was limited to key workers and large numbers of people were furloughed. Schools, non-essential retail and hospitality were closed, with a substantial increase in online activity, for work, education, shopping and socialising.

Patterns of travel evolved during 2020. In the period immediately after lockdown, in April and May, traffic flows, bus and rail use dramatically fell, by around 70% for cars, 90% for buses outside London and 95% for national rail. There was a smaller decline in goods vehicles: movement of freight remained important, and there was an increased reliance on delivery vehicles as people resorted to online shopping.

Car and bus travel gradually rose as lockdown restrictions were eased during the summer, with car traffic returning to pre-pandemic levels at weekends as people looked to more local leisure and tourism opportunities within the UK. National rail demand recovered more slowly, reaching a maximum of just over 40% of pre-pandemic demand in early September before falling back in the autumn.

The introduction of the second lockdown in November resulted in a further fall in travel demand, but this was not the same scale as that seen in March, with road traffic falling by around 25-40% and national rail demand falling by around 75% from the baseline. Figure 14 illustrates these changes at the national level based on DfT data.

Figure 14: COVID-19: changes in road and rail demand in across 2020 and 2021



Source: Transport use during the coronavirus (COVID-19) pandemic - GOV.UK (www.gov.uk)

The graph covers the period from 1st March 2020 to 14th February 2021 and includes the effects of the third national lockdown. In the case of cars and all motor vehicles the higher data points occurred at weekends, particularly during the summer. In the case of national rail, there was much less variability between weekdays and weekends.

Impacts on workplace and residential activity

The ability to work from home varies by types of job and sector. ONS data¹⁷ indicate that certain jobs are more amenable to home working (e.g. managers, professionals, administration) than others (skilled trades, caring, operatives). Different sectors are also characterised by higher levels of home working¹⁸, e.g. professional activities and finance, with much lower levels in hospitality, health and social work and manufacturing.

The highest levels of home working have been seen in London and the South East, reflecting the greater numbers of jobs in finance and professional services. Although there has been less home working in the North than London and the South East, due to different industrial structures and the greater need to be in physical workplaces, there have still been significant impacts on how many people work and live their lives over the last year.

A range of different sources provide more detailed insights on the changes that have taken place in different parts of the UK. Google Mobility data is a particularly useful source, including occupancy of homes and workplaces, food and non-food retail footfall and transit demand. Figures 15 and 16 show sample data for Greater Manchester, South Yorkshire and North Yorkshire for changes in occupancy of workplaces and residences.

¹⁷ Which jobs can be done from home? - Office for National Statistics (ons.gov.uk)

¹⁸ Technology intensity and homeworking in the UK - Office for National Statistics (ons.gov.uk)

Impacts of COVID-19

These graphs demonstrate the changes in working patterns (hence patterns of commuting) during the pandemic in these areas. The first lockdown in March saw a steep reduction in workplace occupancy and a rise in residential occupancy as people stayed at home.

Workplace occupancy gradually increased during the spring and summer, although there were clear differences between weekdays and weekends. Workplace occupancy during weekdays remained significantly below the pre-pandemic baseline, due to low numbers of people working in offices. Occupancy rapidly recovered at weekends, which reflected the reopening of the retail and hospitality industries.

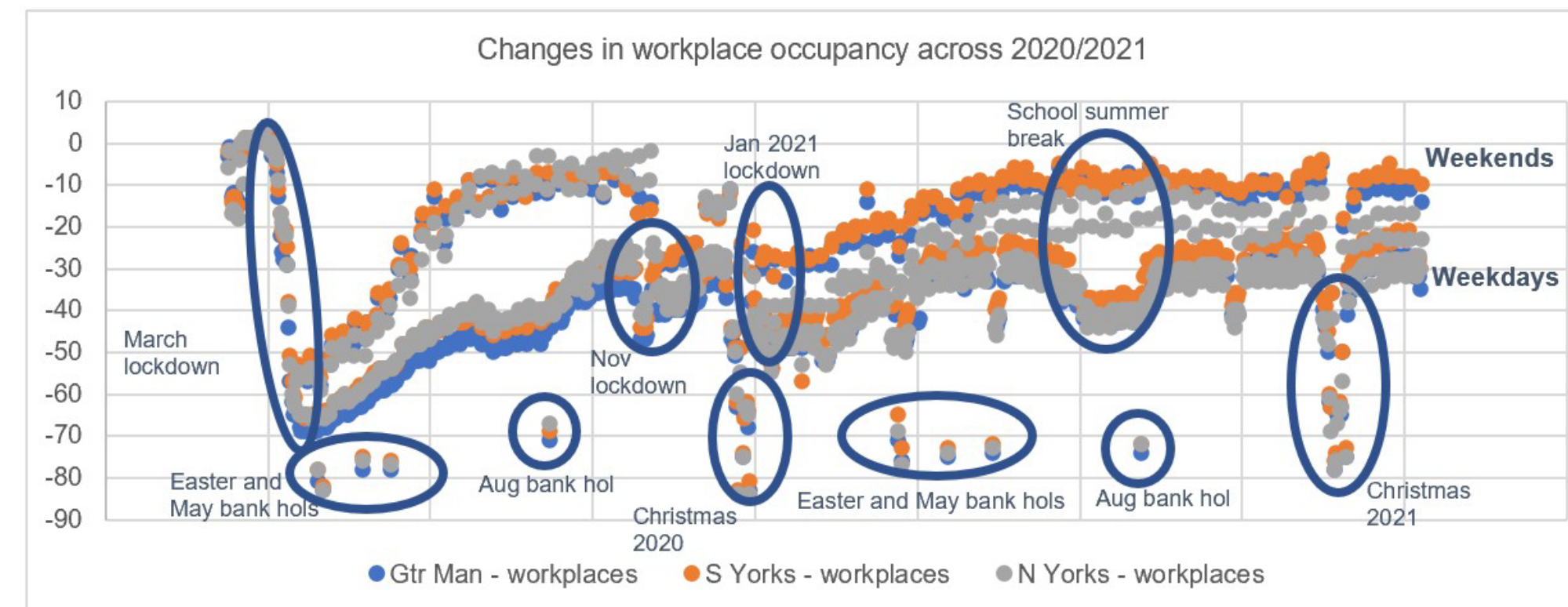
The converse was seen in residential occupancy, with a gradual reduction during the spring and summer as more people ventured away from home. However, during weekdays, substantially more people continued working from home under the continuing restrictions. The numbers of people at home during weekends were closer to the pre-pandemic norm as they returned to shops, bars and restaurants and went on holiday.

The November lockdown saw a second drop in workplace occupancy (as shops and the hospitality industry closed) and corresponding rise in the numbers of people staying at home. Following this, there were continuing behavioural changes as different parts of the country were subject to tiered restrictions on the approach to Christmas.

The data shows the immediate impact of the third lockdown at the start of January and the gradual easing of restrictions through the first half of 2021.

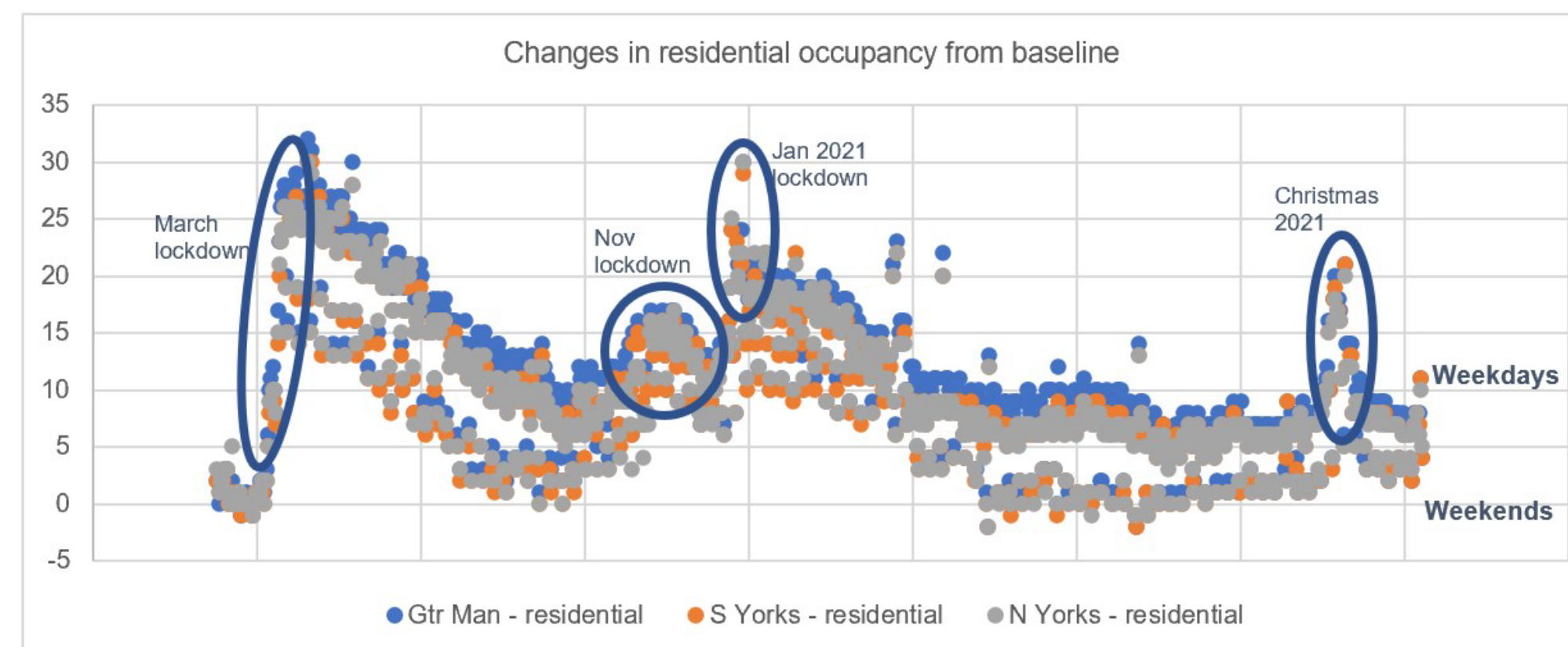
The charts show significant differences between Greater Manchester, South Yorkshire and North Yorkshire. Figure 15 shows lower levels of workplace occupancy in Greater Manchester due to the large numbers of office-based jobs, requiring people to work from home. North Yorkshire saw higher levels of workplace occupancy, reflecting greater dependence on sectors in which people cannot work from home.

Figure 15: COVID-19: changes (%) in workplace occupancy across 2020 and 2021



Source: COVID-19 Community Mobility Reports (google.com)

Figure 16: COVID-19: changes (%) in residential occupancy across 2020 and 2021



Source: COVID-19 Community Mobility Reports (google.com)

Impacts of COVID-19

There is other evidence of more people tending to stay in their local areas, with very high use of local parks during the spring and summer and people shopping in their local areas. This was supported by data showing large increases in walking and cycling for journeys within local communities, although this tended to fall away in the autumn. Nevertheless, there are more people staying in their local communities in most areas, with the potential to support the viability of more and bigger local amenities and businesses.

Impacts on high streets and city centres

The pandemic had major impacts on shopping across the UK, particularly in the uptake of online retail. The Office of National Statistics¹⁹ has shown that online purchases reached 28.5% of total sales in October compared with 20.1% in January. The proportion of online sales had been gradually rising over the last decade, but the introduction of lockdown caused a dramatic rise to 34% during the first lockdown, before falling back as bricks and mortar retail reopened, and then returning to growth in the autumn.

The pandemic has had dramatic impacts on footfall in High Streets across the UK. The Centre for Cities has produced a High Streets Recovery Tracker²⁰ to measure footfall across the UK's largest towns and cities. This provides clear evidence on differences in activity, due to numbers of workers, shopping activity and the evening economy.

Figure 17 presents the numbers of people in selected town and city centres compared to a pre-pandemic baseline of 100. Once again, this shows the clear effect of the lockdown across the UK in March 2020, with very low levels of activity during the spring and gradual recovery during the summer and early autumn, before the second lockdown in November 2020 again caused a further large reduction in activity.

The thick black line shows the average for all towns across the UK. The red line at the bottom represents activity in central London, which is well below the national average. Although activity in Manchester, Leeds and Liverpool was also lower than the average (due to the high numbers of office-based jobs), recovery in most large towns and cities in the North was higher than the national average. This recovery was very strong in sub-regional centres and major visitor destinations such as Blackpool which had a very high peak in summer 2021 reflecting the increased popularity of domestic holidays.

Impacts on travel demand

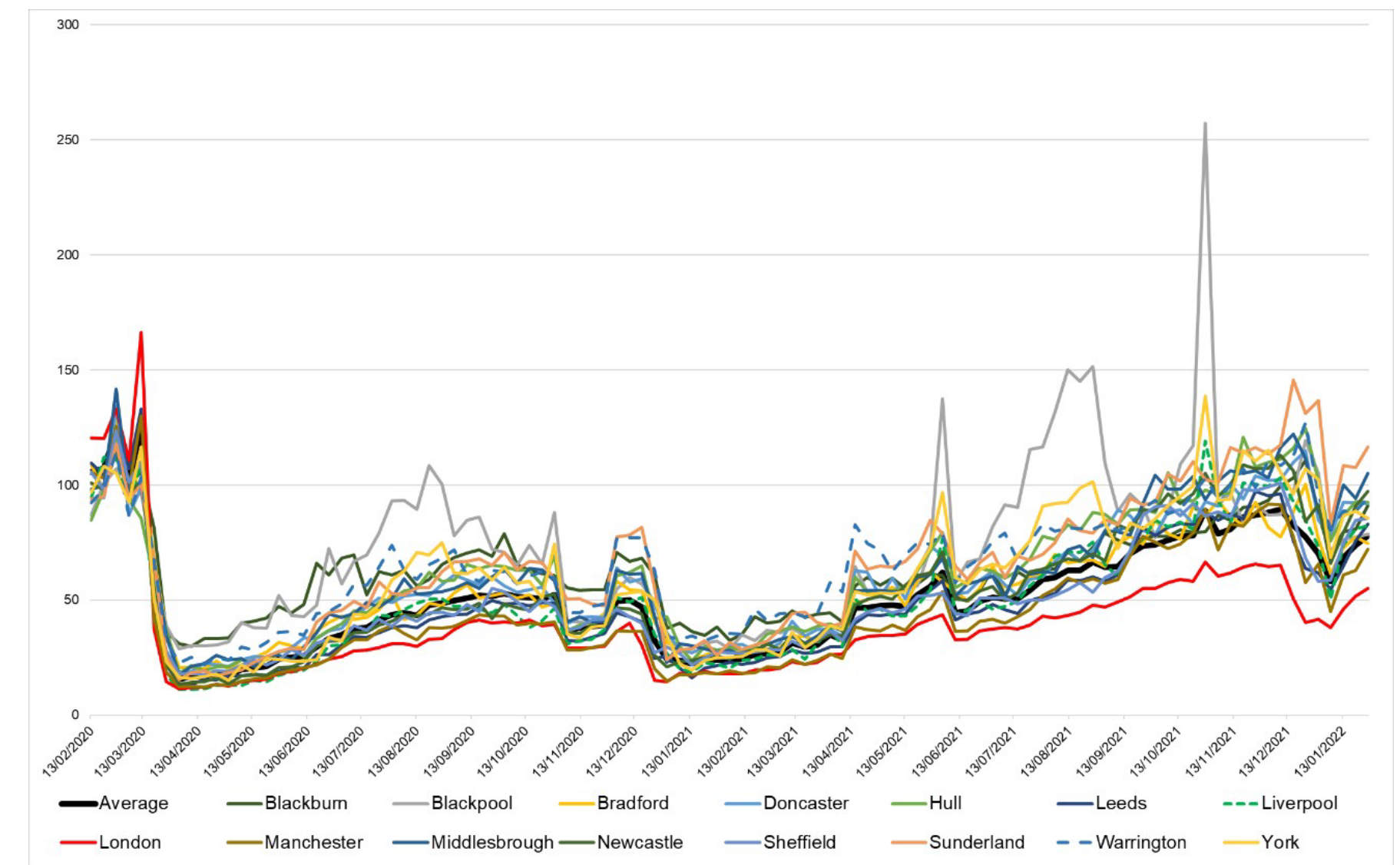
These changes in activity directly impacted travel demand, particularly public transport, across the North. Figure 18 shows the changes in 'transit demand' from Google Mobility data for selected areas in the North.

This shows significant differences in the patterns of transit demand from the Google mobility data in the three selected areas. The lower levels of public transport use in Greater Manchester reflect the lower levels of workplace occupancy and higher numbers of people staying at home.

North Yorkshire presents a different picture. Although this area also experienced a steep reduction in demand following the March lockdown, the (relatively) higher numbers of people travelling reflected the need for many people to be in a physical workplace. The effects of 2020 summer 'staycations' are also clear, with a rise in demand during the late spring and a surge during the summer.

Early 2021 saw an additional lockdown and whilst travel demand may have risen throughout the year, the surge in infections in late 2021 related to the Omicron variant had a minor dampening effect on demand.

Figure 17: COVID-19: changes in city centre footfall across 2020 and 2021

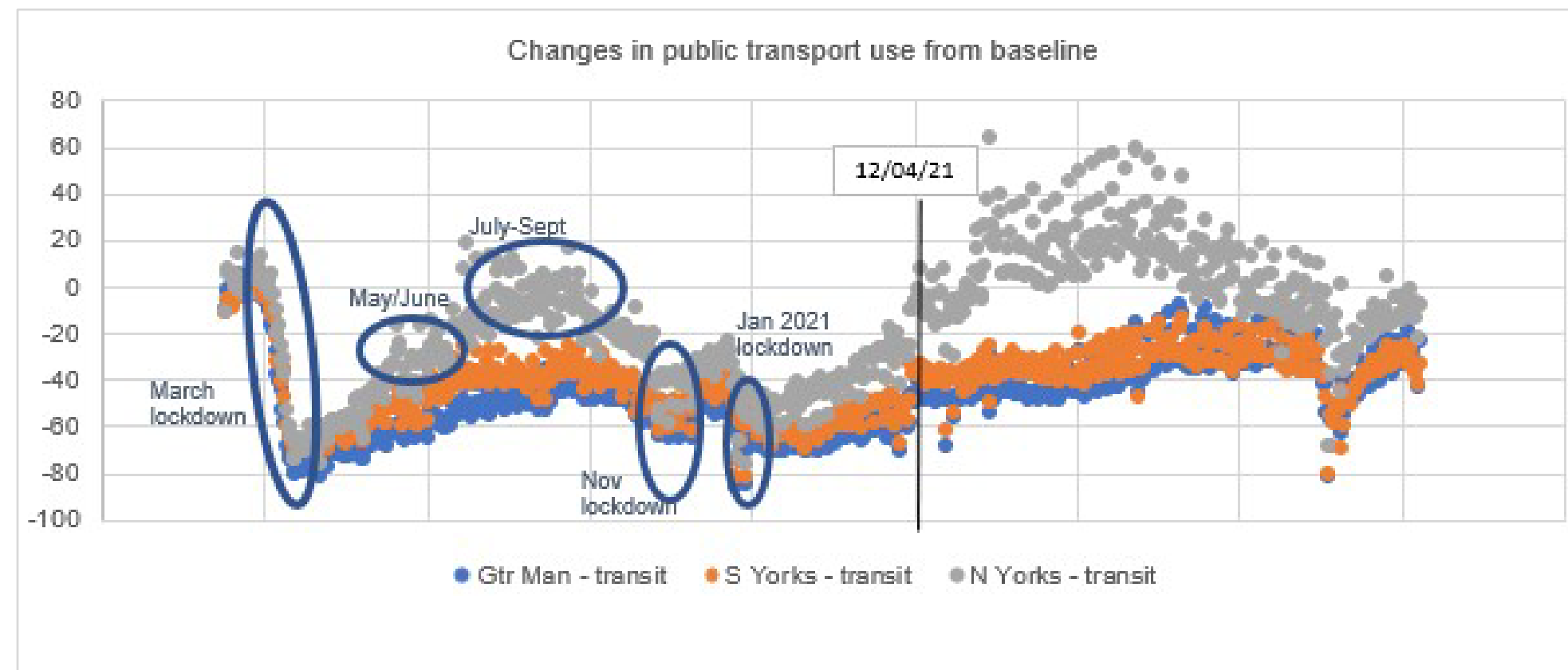


Source: High streets recovery tracker | Centre for Cities

19 The impact of the coronavirus so far: the industries that struggled or recovered - Office for National Statistics (ons.gov.uk)
20 High streets recovery tracker | Centre for Cities

Impacts of COVID-19

Figure 18: COVID-19: changes (%) in transit demand in 2020, 2021 and 2022



Source: COVID-19 Community Mobility Reports (google.com)

This evidence demonstrates the importance of understanding the underlying social and economic drivers of travel demand, and the varying role rail plays in different economic geographies.

Medium-term change

There are strong indications that the pandemic has significantly accelerated longer-term changes that were already taking place:

- A trend towards more flexible models of working for many office-based workers, including working from home and greater ability to work outside the office, enabled by improved IT facilities.
- Online shopping, both existing 'bricks and mortar' retailers and new online-only disruptors such as Asos and Boohoo, facilitated by rapid improvements in payment and delivery systems.
- Other changes to the economy and society triggered by technological transformation, including communications between families and friends and how people access public services.

The instruction to work from home triggered rapid deployment of new technological solutions to enable people to meet, collaborate and share information, including Zoom and Microsoft Teams. The onset of mass home working has had a range of impacts, including some positive productivity impacts, but there have also been challenges of isolation and reduced opportunities for personal development.

The closure of non-essential retail triggered a large shift to online shopping: established retailers were forced to improve their digital infrastructure, businesses such as Amazon have seen dramatic growth in revenues and new operators have built new markets. This has impacted on many 'bricks and mortar' retailers that were established names on high streets, with Debenhams and Arcadia (amongst others) falling into administration.

These changes are likely to strongly influence emerging trends over the next five years, both in terms of major sectors of the economy and the implications for housing markets, office and employment space, retail and hospitality. These forecasts are characterised by high levels of uncertainty in relation to continued evolution of the pandemic, progress in vaccinating the population and the speed in easing lockdown restrictions.

Economic forecasts

GDP fell by almost 10% in 2020, an unprecedented peacetime fall in economic output. Forecasts produced during 2020 and 2021 depended heavily on assumptions about the progression of the pandemic, the emergence of new variants and the success of the vaccination programme. However, economic growth during 2021 surpassed most forecasters expectations, with GDP and unemployment returning to pre-pandemic levels in Q4 2021.

Going into 2022 there is growing optimism that the worst of the pandemic has passed. However, there is increasing clarity on some of the economic headwinds created or exacerbated by the pandemic, while there remains the possibility that more serious variants emerge.

Economic forecasters are currently weighing the risks to growth which that could impact both on demand and supply sides. Rising taxes and borrowing costs, combined with increasing inflation, will put pressure on household finances. At the same time, businesses are contending with global supply chain problems, record energy prices and labour shortages which seem likely to constrain production in 2022. The Office for Budget Responsibility (OBR) March 2022 forecasts noted that higher inflation will erode real incomes and consumption, cutting GDP growth this year from 6.0 per cent in its October forecast to 3.8 per cent. They set out that real living standards are set to fall by 2.2 per cent in 2022-23 - their largest financial year fall on record - and not recover their pre-pandemic level until 2024-25.

There are also expected to be different growth prospects across different parts of the economy, as projected in PwC's UK Economic Update²¹. It suggests that growth in the hospitality sector will continue accelerating but output from other sectors of particular importance to the Northern economy (such as construction and manufacturing) is expected to be moderated by workforce shortages, supply bottlenecks, and weakening demand and business confidence.

Housing markets

The first pandemic lockdown precipitated an almost complete halt in the housing market in Spring 2020, with activity gradually returning from May 2020. The temporary cut to stamp duty from the middle of 2020, combined with the release of pent-up demand and changing buyer priorities has led to strong growth in housing demand and prices during 2021, with average house prices now more than 17% higher in England than before the pandemic, and approaching 20% higher in the North.

House prices are expected to rise at a slower pace through 2022 and into 2023 owing to higher mortgage interest rates and the impact of inflation and taxes on household finances. However, the underlying drivers of demand in the housing market over the last 18 months appear to remain intact, with the pandemic having brought about a significant shift in buyers' priorities.

For instance, more affordable locations offering the prospect of more space and better access to green space have seen considerable increases in demand, while more expensive, city centre locations have been less attractive.

These trends are largely borne out by research by the Centre for Cities²² which has shown that there are large differences in home space in different cities. In general, places in the Greater South East with less affordable housing markets (e.g. Oxford) have less space per person and hence may be less desirable in a market where space has become more valuable than transport connectivity.

However, there is also less space in homes in many of the large towns and cities in the North, including Sheffield, Manchester, Leeds and Bradford due to the nature of the housing stock. This makes working from home in these cities more difficult. This could explain why people are seeking larger properties, further away from city centres, to meet their longer-term needs.

However, many people are in jobs where they cannot work from home. The Centre for Cities has estimated the proportions of the workforce that could work from home in different cities²³ based on the types of jobs in each area. Towns in the Greater South East have the greatest potential for home working because they have mainly office-based economies. Leeds and Manchester also have high potential for home working, which has been confirmed by the current tracking data on residential occupancy and city centre footfall.

However, many towns in the North (e.g. Barnsley, Burnley, Middlesbrough) have much lower potential for home working due to the types of jobs and industrial sectors prevalent in these areas. These areas are less likely to be susceptible to changes in housing markets due to home working, and hence will continue to rely on good rail connectivity to provide access to jobs and labour.

21 UK Economic Update - PwC UK

22 How easy is it for people to stay at home during the coronavirus pandemic? | Centre for Cities

23 How will Coronavirus affect jobs in different parts of the country? | Centre for Cities

Employment floorspace

The pandemic has had significant impacts on demand for employment floorspace and will continue to do so over the medium term. Many sectors of the economy are experiencing major pressures and large numbers of workers are working from home.

Experts in the commercial property market have already undertaken extensive research into these dynamics and the implications for future demand for workspaces. For example, Cushman and Wakefield published its Global Office Impact Study & Recovery Timing Report in September 2020²⁴. Studies have indicated that many people want to return to the office at least a few days per week, and this started to take place during 2021. People will also be looking for more space in the office environment, which means that many firms are not looking to reduce their office footprints.

Further research by Cushman & Wakefield considers the future of offices as places to support productivity, collaboration, innovation and a high-quality employee experience. It also demonstrates that working from home will not be a uniform theme for the future: remote working will need to be carefully planned to support organisational priorities and to reflect the nature of the activities being undertaken.

Businesses have been making decisions on their workplace strategies for 2021, 2022 and onwards. The Government's response to supporting economic recovery over the next year will play a pivotal role in business decisions and this will include provision of effective rail connectivity into and between major towns and cities with strong office markets.

Travel demand

The shorter-term recovery of rail passenger demand has been strongly dependent on the release of restrictions on travel. It will also depend on people's perceptions of the safety of the rail network, and the structural economic changes that have been triggered by the pandemic, such as increased home working.

Transport Focus²⁵ has identified lessons in recovering demand for public transport over the short term. It highlights that people who have travelled during the pandemic felt safe but others who used public transport before the pandemic but not during, have confidence issues. These people have concerns about the ability to social distance on trains under the 'new normal' and that hygiene standards could fall back to pre-COVID levels.

The research also highlights the changes that have taken place in where people work and how often they commute. It highlights that these changes could be long-lasting. During the Transport Focus survey of Summer 2020, many of those surveyed said that it was unlikely that they would return to full Monday-Friday commuting in the future. Of those people who commuted by train before the pandemic, around two in three expected to continue to work from home more often in the future. Almost 50% thought that their job will be home-based with limited travel to their workplace.

The most recent survey was conducted in August 2021 and asked people about their future commuting habits when COVID-19 no longer poses a significant risk. This highlighted that there is likely to be a significant shift towards more flexible working practices even once public health concerns have abated. Table 22 shows the potential changes in future commuting patterns (by those who travelled to work or education by train as their main mode of travel) compared to the baseline before March 2020.

Table 22: Commuting by train pre- and post-pandemic

Commuting frequency	Pre-March 2020	Future (post-COVID)
Two days per week or less	18%	64%
Three-four days per week	41%	28%
Five days per week	42%	6%
Don't know	<1%	1%

Source: Transport Focus.

A very small number of people (1%) are not sure how frequently they will commute after the pandemic but the table indicates that there are likely to be major changes for many people, with a near quadrupling of the numbers of people commuting two days per week or less, and a large reduction from 42% to 6% in the proportion commuting a full five days per week.

NTL has undertaken its own primary research into the changes that are taking place in demand on its network, including commuting, business and leisure markets. Five waves of passenger of surveys have been undertaken, with the most recent (Wave 5) undertaken at the end of September 2021.

Table 23 shows the numbers of days per week worked from home, across the whole NTL network and in different areas covered by the franchise. The first column is based on travel behaviour during January 2020 before the pandemic, the second column shows intentions for long-term behaviour and the third column the forecast change.

24 Global Office Impact Study & Recovery Timing Report | COVID-19 | Cushman & Wakefield

25 Travel during COVID-19: key lessons for 2021 and beyond - Transport Focus

Table 23: Number of days per week worked from home by NTL commuters

	Jan 2020 (Pre-COVID)	Long term (post-COVID)	Change
Average	0.7 days	1.9 days	+1.2 days
Central	0.6 days	1.9 days	+1.3 days
East	0.8 days	2.0 days	+1.2 days
West	0.8 days	1.8 days	+1.0 days
North East	0.7 days	1.4 days	+0.7 days

Source: NTL Wave 5 surveys, September 2021. Note: small sample size for North East area.

This clearly shows an increase in the numbers of days per week that people will spend working from home, particularly in the East area (which covers Yorkshire). These patterns are consistent with the Transport Focus data, with a clear shift forecast towards more days per week working from home in the longer term following the pandemic.

People's future commuting decisions will be influenced by factors including the ability to work productively from home and employers' future workplace strategies, which will themselves be influenced by the need for face-to-face engagement between teams, client engagement and measures to reduce property costs.

A large proportion of people who previously regularly commuted by rail had season tickets. **Future government policy on pricing of season tickets, and flexibility in pricing to accommodate more home working, will be a crucial factor in influencing future demand.**

The future of business travel is also important for the railway. Business recognises the value of face-to-face contact in building trust and relationships with existing and potential customers, suppliers and partners and for staff development and growth. It is therefore likely that rail-based business travel will recover to a greater extent than commuting provided business travellers' needs for reliable, and efficient services and a productive on-train working environment can be met.

During 2020 and 2021 there were high levels of demand in places for trains to connect with leisure opportunities. This was evidenced by the peaks in demand for train travel in places such as North Yorkshire, reflecting the large numbers of UK staycations. This provides clear evidence that people are willing to use trains to make journeys when they have the opportunity.

There are strong prospects for a rapid recovery in demand for leisure journeys using the railway in the North. The region is home to four National Parks, coasts, visitor destinations and shopping centres. There is clear evidence that there is strong potential for the recovery of leisure demand. This will be driven by the return of shoppers to the High Street and the growth in the visitor economy as more people holiday in the UK.

Table 24 shows the forecast impacts on demand for different types of leisure journey, based on the recent Wave 5 surveys, in terms of changes in the frequency of trips that people would make in the new normal compared to before COVID.

Table 24: Impacts on journey frequency for different types of leisure trip by NTL passengers

	Visit friends & family	Holidays in UK	Trips to Airport	Shopping	Day trips	Specific events
Will make more frequent trips	37%	41%	24%	25%	49%	29%
Will make less frequent trips	7%	7%	23%	13%	7%	13%
Balance	+30%	+34%	+1%	+12%	+42%	+16%

Source: NTL Wave 5 surveys, September 2021. Note: small sample size for North East area.

The surveys indicate that, on balance, people are more likely to make more journeys by rail for visiting friends and family and for holidays in the UK. People are very marginally more likely to take trips to airports although people are much more likely to make rail journeys for the purpose of shopping, day trips and for specific events.

The evidence indicates strong potential for the rail system to meet these new demands for leisure journeys across the North, particularly to support the region's visitor economy and in connecting with family and friends. These are important journey purposes and generate large amounts of travel demand. There is clear scope for the rail network to better meet these needs and help secure mode shift away from road-based travel. It also allows the opportunity to further explore leisure market changes, such as demand for 'staycations', and the opportunities these bring for rail.

In summary, there is clear potential for a stronger recovery of travel demand in the North. The distinct features of the economy, including a diverse sectoral mix, different journey purposes and dependence on the railway mean that there is strong potential for a rapid recovery of demand.

Building back better

There is clear evidence that the railway must play a central role in the Government's aims for building back better following the pandemic. The previous chapters of this report have demonstrated the economic benefits of the railway to the North, not just in creating high-quality jobs but also in terms of the value of good connectivity enabling people to access opportunities and businesses to trade.

The provision of high-quality, cost-effective transport solutions is critical to high-performing economies. Conversely, large-scale reductions in rail services or large increases in the costs of travel would significantly impact on the connectivity and competitiveness of the North. Rail service reductions would also cause more people to shift to driving by car, which will increase congestion, reduce productivity and increase carbon emissions, all of which are counter to the Government's strategic priorities.

Previous chapters of this report have also demonstrated that rail services in the North have significant economic benefits that are not captured through conventional financial appraisal. Table 25 shows the implications of initiating service reductions that fail to meet the needs of the future economy of the North.

Long-term reductions in train services would cause widespread economic impacts across the North. These impacts would affect all areas, both in the larger cities and areas where levelling up is a critical challenge, including places such as Blackpool, Sunderland, Barnsley, County Durham and West Cumbria. This, in turn, would significantly constrain the scope for building back better following the pandemic.

Table 25: Potential economic impacts of rail service reductions

Type of impact	Implications of service reductions	Vulnerable areas
Direct (employment) impacts	NTL creates high quality jobs. Reduced funding for services would impact on frontline operational jobs across the North.	Manchester, Leeds, Newcastle, Liverpool, York, Blackpool, Sheffield, Bolton, North Yorkshire, Cumbria.
Indirect (supply chain) impacts	NTL has an extensive UK-wide supply chain. Reduced funding would impact on supply chains across the UK.	Manchester, Sunderland, Sheffield, Leeds
User impacts	NTL connects people across the North. Reduced services would make it harder to attract people back to the railway and constrain economic activity: travel to work, business travel, retail and the visitor economy.	Leeds, Bradford, Stockport, Bolton & Wigan, Manchester, North Yorkshire, Barnsley & Doncaster, Kirklees & Calderdale, East Merseyside, Liverpool
Non-user impacts	NTL is central to fighting road congestion. Reduced services would mean more people drive, increasing congestion and delay on roads, air pollution and carbon emissions.	Leeds, Bradford, Manchester, Bolton & Wigan, Kirklees & Calderdale, North Yorkshire, Barnsley & Doncaster, Stockport, Wakefield, East Merseyside.
Agglomeration	NTL enables collaboration, innovation and productivity. Reduced services would reduce opportunities for collaboration and innovation, which would hamper the productive potential of the North.	Leeds, Bradford, Manchester, Salford & Trafford, Cheshire East, Durham, Kirklees & Calderdale, North Yorkshire, Barnsley & Doncaster
Option values	NTL provides travel options where few alternatives are available. Reduced services would have major impacts on accessibility, travel choices and ability to connect with public services, education and employment opportunities.	Barnsley & Doncaster, Bolton & Wigan, Stockport, Salford & Trafford, Leeds, Durham, West Cumbria, North Yorkshire.

The priority must therefore be to secure a rapid recovery in demand, realign services to meet the needs of the 'new normal' and secure the future economy of the North. There is likely to be a long-term reconfiguration of demand in different rail markets and the network must respond to these changes and meet the needs of the future economy. Table 26 presents indicative forecasts of the changes in demand for the commuting, business and leisure markets.

Table 26: Indicative demand forecasts for NTL commuting, business and leisure markets

	Jan 2020 (pre-COVID)	Late 2021	New Normal (Long-term)
Commuting	100%	51%	56%
Business	100%	45%	77%
Leisure	100%	84%	93%

Source: NTL Wave 5 surveys, September 2021.

The fall in commuting demand will be driven primarily by increased home working but there is also a risk that some commuters could shift to driving to work if the rail system fails to meet their needs. It will be critical to ensure that the rail network offers a cost-effective solution for travel to work, with trains that are frequent, reliable and perceived to be safe to use.

Business travel is forecast to experience a stronger recovery than commuting, driven by the need to re-connect with clients, generate new sales and improve competitiveness as the economy recovers. The rail network must enable these connections to take place, with high levels of reliability and fast, frequent services, to minimise costs and to businesses.

The evidence points to a strong recovery of leisure demand, driven by shopping, day trips and domestic holidays within the UK. Reliable, frequent and cost-effective train services will support the recovery of town and city economies and the continued vitality of the visitor economy of the North. This will also help to reduce car dependence for leisure journeys, reducing congestion and supporting the decarbonisation of the transport network in the North.

Transport Focus²⁶ has highlighted five actions to recover passenger confidence and support the rebuilding of demand:

Ensuring passengers can make essential journeys with confidence now:

- Provide capacity and improve information to support social distancing onboard.
- Maintain improved cleanliness and communicate this effectively.
- Drive up compliance with the rules, especially face coverings.

Attracting passengers back when the time is right:

- More flexible fares for less frequent commuters.
- Offers & promotions to encourage lapsed users to return.

The first three actions are immediate priorities and are already business-as-usual for NTL's operations. In terms of attracting passengers back, NTL will work proactively with rail industry partners to develop new ticketing options and measures to attract previous users and stimulate new markets, for example shoppers, holidaymakers and business travellers.

These measures will include working with DfT, Network Rail to develop new timetables to meet evolving customer needs, running higher-quality rolling stock with capacity to enable people to safely distance. It will also include working with local authorities to promote rail as part of multi-modal journeys, complementing the Government's significant investments in active modes infrastructure.

By rapidly re-building demand for NTL's services, it will be possible to capture the full potential of the rail network to support the economic recovery of the North:

- NTL, as an employer and through its supply chains, supporting high-quality, well-paid jobs across the North, including in areas where levelling-up is a priority.
- NTL services enabling people to travel by rail and generate economic value through work, business travel and spending in local economies.
- NTL services providing a quality alternative to travel by car, helping to reduce congestion and directly supporting DfT's transport decarbonisation agenda.
- Enabling business activity and increased productivity in the economy of the North through collaboration and innovation, enabled by ease of connectivity between the towns and cities of the North.
- Providing high quality travel choices where options are otherwise limited, enabling communities across the North to access opportunity.

Summary

This chapter has demonstrated that COVID-19 has posed major challenges for the UK's economy and transport system. However, it is wrong to assume that the same challenges apply across the whole of the UK. The nature of rail markets in the North is quite different from those in London and the South East: policy responses must be tailored to reflect each regional economic geography:

- The North has a much more diverse rail market than the South East. Whilst the South East is heavily oriented towards commuting, there is much greater use of rail in the North for other types of journey.
- The North may be less sensitive to the expected shift to home working than the South East and many other parts of the UK. Whilst there will be impacts in the larger cities such as Manchester and Leeds, the economies of most towns and cities in the North will remain dependent on physical travel.
- It can therefore be expected that there will be a stronger recovery in rail demand in the North, due to less exposure to the move to home working and a more diverse mix of demand.
- NTL will work proactively to support the recovery of rail demand, including encouraging people back to the railway and stimulating new travel markets through promotions and high-quality services.
- This will support building back better in the North, through NTL's own activities, stimulating economic activity through effective connectivity, supporting a shift from congested road networks and directly contributing to decarbonisation of the transport system.

11

Chapter Eleven

Why rail matters to the North

Why rail matters to the North

The North's rail network represents an important social, economic and cultural asset, prominent in the everyday lives of millions of people and an integral part of the North's identity.

NTL carries almost 50% of all rail trips in the North of England and is the sole service provider for 25% of the population. Its network fulfils an important and diverse economic function, be that as a mass transit network in the region's cities, a leisure and tourism asset connecting four National Parks and resorts on both coasts, or a lifeline to marginalised rural and coastal communities.

NTL also operates 70% of all the stations in the North, maintaining these important civic assets at the heart of communities and fostering significant community involvement.

The scale of NTL's operations means that it is one of the largest employers in the North of England, creating good quality, well-paid jobs distributed across the region and supporting a great many more jobs in its supply chain.

An enabler of regional policy

Transport Authorities across the North are hence looking to local rail services to support a wide range of important strategic priorities:

Connectivity: NTL provides critical transport links into important regional economic centres such as the Leeds, Manchester and Newcastle and for rural and coastal areas suffering from peripherality.

Environment and climate change: Rail is instrumental in the UK's transition to a zero carbon economy, supporting economic growth without the environmental impacts associated with highway transport.

Growth: Stations provide important gateways to many towns and cities in the North of England around which economic activity clusters. Rail is also identified as an important means of providing the transport capacity required to sustain and promote urban regeneration.

Social deprivation: Rail is recognised as an important contributor to the inclusive growth agenda, supporting access to education, employment and services for young people and households without access to a car.

A cornerstone of the Northern economy

This study has shown that NTL's operations contribute substantially to the Northern economy:

Economic activity supported: NTL's passengers expend a total of **£1.25 billion** in fares and generalised journey time each year. The economic value of these journeys must be equal to at least this figure (or there would not be incentive to make the journey).

Direct impacts: Chapter 3 demonstrated how NTL's operations play a significant role in the job market and GVA contribution with a direct job creation of 6,620 roles and a direct GVA contribution of over **£360 million**. This equates to £55,000 GVA per direct employee.

Indirect impacts: Chapter 4 shows that procurement by NTL for goods and services converts equates to **£257 million** GVA per year (2020 prices). Of this, approximately 45% of the value is retained in the North, equivalent to 4,315 jobs.

User Benefits: Chapter 6 describes an incremental approach to estimating the value that NTL's passengers derive from its services. 10%, 20% and 40% changes in service provision have been found to produce annual user benefit changes of £31.4m, £68.8m and £160m respectively. Extrapolating this non-linear relationship between level of service and user benefit to simulate a hypothetical scenario where there were no services returns a total user benefit for the network of **£416 million** per year.

Non-user benefits: Chapter 7 extends the user benefits analysis in Chapter 6 to show that the 10%, 20% and 40% changes in service provision would produce annual non-user benefits (reduced highway congestion, infrastructure maintenance, accidents, noise, greenhouse gases and improved air quality) of £6.3m, £13.5m and £30.0m respectively. Extrapolating as per the user benefits produces an estimate for the total value of transport externalities saved by NTL's service of **£75 million** per year.

Agglomeration: Chapter 8 estimates the effect of NTL's operations on agglomeration using the same 10%, 20% and 40% incremental changes to service provision as used for user and non-user benefits. This approach estimates agglomeration impacts of £9.8m, £19.9m and £43.3m respectively, and an extrapolated total impact of **£73 million** per year.

Option and non-user value: Chapter 9 identifies that NTL is the sole provider of rail access for approximately 25% of all households within the region. The economic value of these services to those people that do not currently use rail is estimated at **£356 million** per year in 2020 prices.

Why rail matters to the North

Case study: Carlisle to Newcastle & Morpeth

Inputs

Annual expenditure: **£18.6m**

Annual revenue: **£6.4m**

Net annual cost to Govt: **£12.2m**

Outputs

Direct and indirect (GVA) impacts: **£15.1m**

GVA per £ invested **£1.24**

Outcomes

Welfare benefits of **£23.8m per year**

Welfare benefits per £ invested **£1.95**

Supporting national priorities

NTL's network will play a role in supporting delivery of our most pressing national policy agendas.

Decarbonising transport

Though the achievement of net zero will require all sectors of the UK economy to deliver substantial emissions reduction it is recognised that transport faces some of the biggest structural, technological and behavioural challenges.

Transport contributed 28% of UK domestic emissions in 2018, with emissions 4% higher than in 2013 and only 3% lower than in 1997²⁷. This lack of progress towards net zero, relative to other sectors, means that transport is now the largest contributor to UK domestic greenhouse gas emissions. While rail's direct contribution is marginal (1.4% of domestic transport emissions), it has an important role to play in achieving net zero, sustaining marginalised communities and supporting economic growth without continued reliance on road traffic.

This point is especially relevant in the North, which must work to address the climate emergency while also agglomerating its economy, addressing deprivation and peripherality and delivering housing growth.

Levelling up

The disparity in per capita transport investment across the UK is a high-profile aspect of the levelling-up agenda. The Government has recognised that transport, and especially rail, will be an important enabler of social and economic progress in the North and is promoting major investment programmes seeking to address the issue.

However, the benefits of enhanced regional connectivity and high-speed rail risk being confined to the centres of the North's major cities without commensurate investment in the local routes and services that connect those hubs to the communities and businesses in their hinterlands and beyond.

Economic recovery

The COVID-19 pandemic has impacted rail demand significantly and there remains significant uncertainty around the longer-term impacts on travel behaviours. It is clear, however, that the Northern network will play an important role in the economic recovery:

- Supporting a large number of good quality jobs, both directly and in its supply chain, across the whole of the North.
- Complementing the Government's significant investments in active modes infrastructure.
- Enabling the 'clean, green recovery' particularly on the Cumbrian 'Energy Coast' and the growing renewables sector on Humberside.
- Maintaining rail as a high quality and competitive alternative mode to private car and positively influencing locational and land use decisions and avoiding reinforcing some of the undesirable changes in travel behaviours that may follow the pandemic.

This study has shown that NTL's operations represent an effective and good value means of generating social and economic value for the North, supporting its businesses and communities, all while generating many good quality and well-paid jobs. The wide spectrum of social, environmental and economic benefits has established NTL as a cornerstone of local transport policy across the North and it represents an important enabler of pressing national priorities. Reimagining and reinvigorating the Northern network must play a central role in the economic recovery from COVID-19, the levelling up agenda and the country's pursuit of net zero.

Thank you
If you have any questions
please get in touch.