



# West Coast - Sheffield City Region: Strategic Development Corridor



## Strategic Programme Outline Case

October 2019



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## Supporting Documents

A standalone Executive Summary has been published separately.

Further detailed evidence is available on TfN's website at:

<https://transportforthenorth.com/>

# 1 Introduction

## Background

- 1.1 The people of the North are at the heart of the Transport for the North (TfN) Strategic Transport Plan (STP)<sup>1</sup>. An effective, efficient Northern transport network is a fundamental part of everyday life – connecting people to jobs, ealth, education and leisure opportunities, connecting businesses to each other and allowing the efficient movement of goods and services. A transport system that is fit-for-purpose with strong north - south and east - west connections will be the backbone of a strong economy for the North and for the UK.
- 1.2 The STP has a horizon year of 2050 to align with the *Northern Powerhouse Independent Economic Review* (NPIER)<sup>2</sup> and to enable the development of a long-term transport investment programme for the North. This will mean that TfN and its Partners can work with Government to secure funding to deliver the right schemes in the right place at the right time, providing certainty for local transport authorities to plan complementary investment and also for the private sector to plan commercial investments. The pipeline of investment will give confidence to businesses across the North to invest and grow, give the supply chain, including Small and Medium Enterprises (SMEs), confidence to plan interventions, build up their skills base, and collaborate across industries.
- 1.3 Building on existing and proposed projects, the Strategic Development Corridors (SDCs) represent strategic geographical and economic areas with the strongest potential towards transformational growth in the North. Combining evidence from the 2017 Integrated Rail and Major Roads Reports, the STP identifies seven corridors where evidence indicates delivery of transformational growth is dependent on bringing forward major road and rail investment.
- 1.4 These corridors complement Northern Powerhouse Rail (NPR), Integrated and Smart Travel and three Strategic Road studies, which form part of the reference case for this study. This study specifically seeks to explore the West Coast – Sheffield City Region Strategic Development Corridor (SDC), and the interventions that will deliver long term improvements to connectivity on the West Coast Mainline between Crewe and the Scottish border, and across central Manchester to Sheffield via the Hope Valley, encompassing links to a wide range of adjacent Important Economic Centres that rely on these core corridors to move people and goods. The interventions within this SDC will deliver a programme of strategic rail interventions that focus on improving connectivity at a Pan-Northern scale,

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<sup>1</sup> Strategic Transport Plan for the North (Final)

<sup>2</sup> <https://transportforthenorth.com/wp-content/uploads/Northern-Powerhouse-Independent-Economic-Review-Executive-Summary.pdf>

noting the significant role that it plays in linking the Important Economic Centres (IECs) contained within the geography, but also as a nationally (and internationally) significant trade route for movement to / from and through the SDC area.

- 1.5 The SDCs have been developed to represent where most of the largest gaps between demand and performance currently exist, and where there is likely to be the greatest economic potential to improve connectivity and the economic interaction between the existing key economic clusters and assets of the North of England and facilitate potential future clusters in other locations. Investment considered within the context of these corridors is focused on interventions that will benefit the whole of the North. Acknowledging the possibility that locations of demand and investment priorities may change over time with land use decisions and market responses, which will be informed by future iterations of the STP. The study does not consider interventions with a predominantly local impact.

## **Transport for the North**

- 1.6 TfN is the voice of the North of England for transport; a statutory body of elected leaders and a partnership of business leaders from across the whole of the North of England who collectively represent all of the region's 16 million citizens.
- 1.7 Alongside local political Leaders, TfN's Board also has representatives from the national transport bodies (Network Rail, Highways England and HS2 Ltd) and works closely with its neighbours in Wales, Scotland and the Midlands.
- 1.8 TfN's vision is of *"a thriving North of England where world class transport supports sustainable economic growth and improved opportunities for all"*. As England's first Sub-National Transport Body, TfN was established to transform the transport system across the North of England. It has a clear remit to plan the transport infrastructure required to support transformational economic growth in the North.
- 1.9 The statutory powers that have been granted allow and require TfN to:
- Develop and implement a STP for the North of England.
  - Act as 'one voice' for the North, clearly communicating Pan-Northern priorities to the Secretary of State for Transport.
  - Coordinate and deliver smart ticketing systems across the North.
  - Become a statutory partner in rail and road investment decisions, through the Rail North Partnership and Highways North Board.
  - Oversee (jointly with the Department for Transport) franchised rail services covering Northern and Transpennine Express franchises.
  - Promote highways improvements of Northern significance, with the agreement of Government and relevant highway and local authorities.
  - Decide on capital grants.
- 1.10 Complementing the work of existing local transport authorities and with powers devolved down from central government rather than up from local

government, TfN's role is to add value, ensuring that funding and strategic decisions about transport in the North are informed by local knowledge, expertise and requirements.

- 1.11 A vision of a transformed North was set out in the NPIER. It concluded that transformational growth will require investment and improved performance in a number of critical areas, especially education, skills, innovation and inward investment, alongside improved transport infrastructure and services for passengers and freight.
- 1.12 The NPIER also established that a transformed North could see an additional 850,000 jobs and almost £100 billion additional Gross Value Added (GVA), over and above 'business as usual' trends, by 2050.
- 1.13 It is crucial that the productivity gap which currently holds back growth in the North is reduced, to ensure that all of the North performs as well as the rest of the UK. A step-change in strategic transport infrastructure investment is a vital enabler to achieve the North's economic aspirations – establishing a value-for-money investment programme, within an ambitious, but realistic, funding envelope, is TfN's primary responsibility.

### Definition of Pan-Northern

- 1.14 TfN has gone some way to defining what is meant by the term 'Pan-Northern'. A key component of this is subsidiarity; pursuing governance and decision making at a local level, whilst accounting for the appropriate scale of organisation required to exercise powers at a regional (for example, Pan-Northern) level.

#### The Definition of Pan-Northern

*Why? "Facilitate and enable transformational growth of the economy through improved connectivity for people, businesses and goods to, from and within the North."*

How this will be achieved:

- By enhancing the North's major transport networks to operate more efficiently and more reliably and to increase network resilience
- Supporting, informing and influencing present and future land-use development
- Promoting and enhancing the built, historic and natural environment
- Supporting the reduction of transport-related carbon emissions and contributing to improvement of air quality
- Ensuring proposed transport interventions offer value for money
- Improving journey time, quality and choice

- 1.15 It flows from this principle that TfN is the appropriate level at which to take transport decisions impacting across geographies in the North, whilst local authorities are the appropriate level at which to take transport decisions that are contained within a locality in the North and where investment is not necessarily driven by Pan-Northern aspirations. 'Pan-Northern' is a



short-hand, encompassing, definition which refers to transport interventions that naturally fit within TfN's remit.

## **The Rationale for Strategic Development Corridors**

- 1.16 The rationale for the West Coast – Sheffield City Region SDC is to deliver a programme of strategic rail interventions that focus on improving connectivity at a pan-Northern scale. This SDC encompasses the West Coast Mainline (WCML) and the Hope Valley rail corridors at its core; however, it also encompasses several tributary corridors of Pan-Northern Significance within Cumbria, Lancashire, the Liverpool City Region, Greater Manchester and the Sheffield City Region. TfN has been working with partners to support complementary investment at a local level in order to ensure a 'whole journey' approach to improving connectivity and opportunity in all Economic centres that lie adjacent. A key factor in the success of the SDC will therefore be the integration of strategic and local objectives to reflect the wider aspiration for betterment across a single rail network.
- 1.17 The SDC work to date has played a critical role in defining the later stages of the TfN Investment Programme, which identifies a sequenced list of interventions up to 2050, encompassing:
- Committed schemes within industry processes;
  - Nationally significant infrastructure schemes such as High Speed 2,
  - Potential new Anglo-Scottish links;
  - and TfN's Northern Powerhouse Rail Programme.
- 1.18 This SDC builds upon the evidence presented within the West Coast - Sheffield City Region SDC Position Statement that was published in March 2019. It draws together the work of TfN, delivery agencies and local partners to ensure a Strategic Outline Programme (SOP) of Interventions on a whole corridor basis, with the objective to build upon interventions that are already identified within the Investment Programme and therefore ensure a holistic and integrated programme of investment for the rail network at a Pan-Northern level. It recognises the economic benefits that arise from the total sum of the parts, and the cross-cutting relationships between Important Economic Centres that exist between the adjacent SDC geographies defined for this purpose.
- 1.19 The West Coast - Sheffield City Region SDC therefore delivers a one network approach to long term rail planning, which builds upon the following elements of the Investment Programme to maximise the benefits to its users:
- Maximise the benefits of "Reference Case" schemes on the Pan-Northern Corridors that constitute the SDC geography;
  - Evenly distribute the benefits of the North's 'major transformational-infrastructure projects' for example through improving connectivity to the NPR/HS2 gateways, whilst acknowledging and mitigating the

potentially negative impacts of these schemes within the SDC geography;

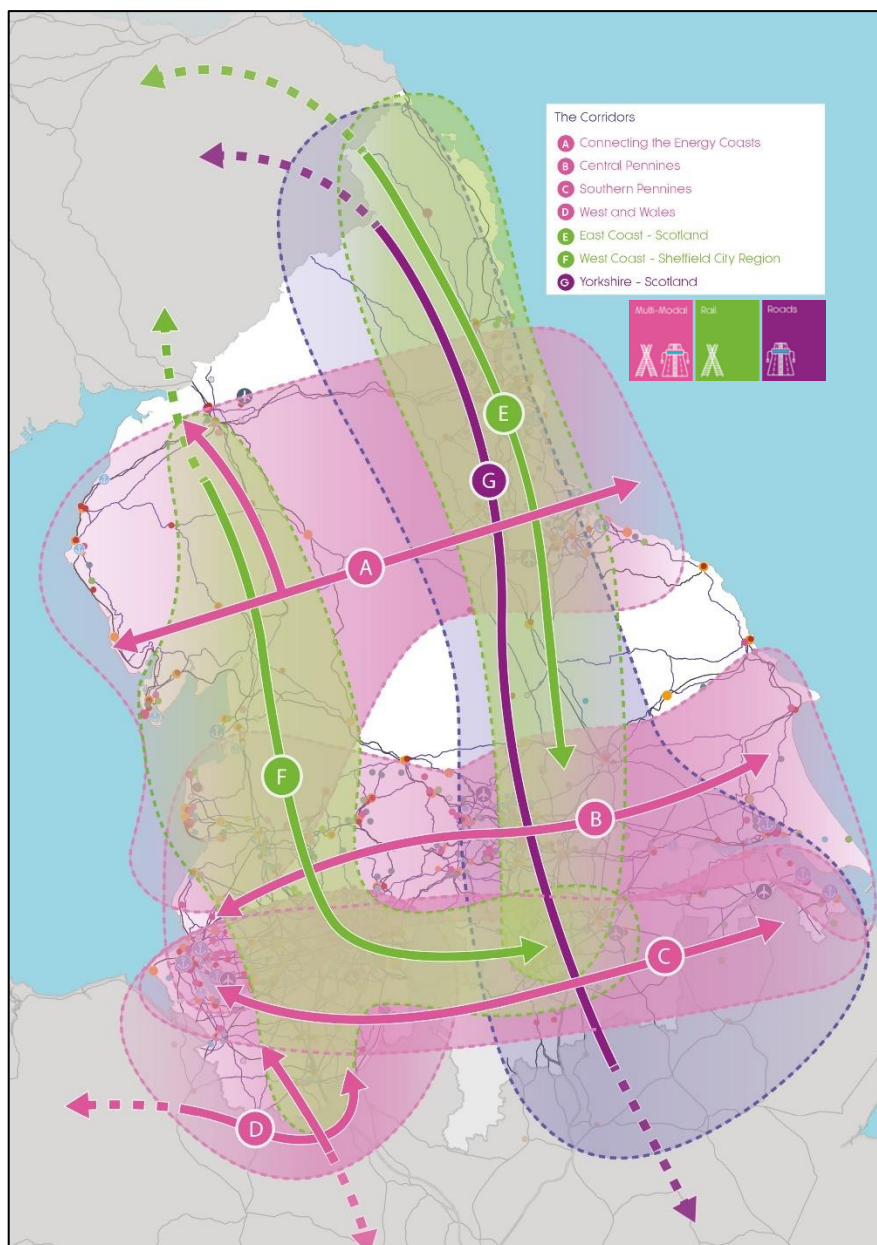
- Achieve early benefits of Pan-Northern transport investment through identifying potential short, medium and long-term interventions within the programme;
- Fill gaps in TfN's wider programme, targeted at the corridors where the greatest potential to unlock transformational economic growth and contribute to the other key STP objectives (such as improving efficiency, inclusivity and the environment), has been identified.

- 1.20 The subsequent sections of this SPOC document identify the process that has been undertaken to sift and then subsequently appraise additional schemes within this corridor. As with previous SDCs, the current limitations of the modelling tools prevent the detailed appraisal of schemes that are dependent upon transformational growth forecasts. Schemes that cannot be appraised at present will be addressed within the second phase of Strategic Development Corridor work (SDC2).

### **Existing SDC Corridors**

- 1.21 In addition to the SDC Corridor of West Coast – Sheffield City Region, the remaining two Yorkshire to Scotland SDC (Road only) and the East Coast – Scotland SDC (Rail only) have been merged to be a multi-modal SDC SPOC known as 'East Coast – Scotland SDC'. The merged final SDC corridor and this West Coast – Sheffield City Region SDC will complete the geographic areas that are identified within Figure 1-1 below, and will augment the four SDCs that were progressed during 2018 and completed concurrently with the TfN STP and Investment Programme that was published in March 2019:
- Central Pennines
  - Southern Pennines
  - Connecting the Energy Coasts
  - West & Wales

**Figure 1-1: TfN Strategic Development Corridors**



Source: TfN Strategic Transport Plan

## The TfN Investment Programme

- 1.22 The TfN Investment Programme identifies a significant number of interventions and schemes that will bring transformational change to the quality of the rail network within West Coast - Sheffield City Region SDC during the lifetime of the STP to 2050, notably on the core Pan-Northern Corridors such as the WCML. As detailed above, the purpose of this SDC is to build upon and complete the coverage of SDC schemes at a Pan-Northern level, filling any gaps for rail that may exist on a one network basis.
- 1.23 The four tables contained within the Investment Programme are identified by their current level of certainty, aligned to the industry process for road

and rail (Road Investment Strategy and Control Periods). The SDC interventions arising from the four existing corridors are generally identified within Table's 3 & 4 for delivery post-2027, with earlier interventions forming part of the TfN Reference Case for modelling and appraisal purposes:

- Table 1 - Previously Announced Interventions: Interventions or packages of interventions that have been announced prior to the publication of the Strategic Transport Plan, including those which have received approval, have a confirmed funding stream, and are in the process of delivery.
- Table 2 – Specific Interventions before 2027 – Already in Industry Processes: Interventions that are currently in development by Network Rail and Highways England, for which TfN supports the commencement of delivery prior to 2027.
- Table 3 – Specific Interventions before 2027 – Proposed early phases of Northern Powerhouse Rail and Additional TfN Priorities: Interventions including NPR for which the evidence base identifies a need to commence delivery prior to 2027 through Rail Industry processes or the Road Investment Strategy.
- Table 4 – Later Phases of Northern Powerhouse Rail and Further Potential Interventions: Encompasses the remaining interventions associated with Northern Powerhouse Rail and interventions for which evidence has been developed through the Strategic Development Corridors.

1.24 The investment programme tables are further described in Table 1-1 below:

**Table 1-1: Previously Announced Interventions**

<b>Previously Announced Interventions (Table 1 of the TfN Investment Programme)</b>				
Outcome	Intervention	Description	Development Stage	Prior SDC Coverage
Provision of high-speed rail services across the North to the rest of the UK, radically reducing journey times and providing enhanced connectivity beyond the HS2 network.	Phases 2A & 2B	Linking HS2 to Crewe and the West Coast Main line via the Golborne Link	Design	West & Wales

<b>Previously Announced Interventions (Table 1 of the TfN Investment Programme)</b>				
A package of improvements to stimulate economic growth in the North through better connections between towns and cities, enabling 2,000 extra services each week and allowing 40,000 more passengers to travel each day	Northern and Trans Pennine Express rail franchises	New and refurbished rolling stock, new service patterns (including Liverpool – Glasgow), frequency and journey time improvements	Deploy	West & Wales Central Pennines Connecting Energy Coasts
	Manchester - Preston improvements	Electrification and infrastructure improvements to achieve journey time savings	Deploy	Central Pennines
	Cross Manchester Capacity and Reliability	Capacity improvements to accommodate longer, more frequent passenger and freight trains to/from and through Manchester, including longer/additional platforms at Manchester Oxford Road and Manchester Piccadilly stations	Determine	Central Pennines West & Wales South Pennines
Supporting the Economy of the North	Oxenholme – Windermere enhancements	Rolling stock and service improvements	Deliver	Connecting Energy Coasts
<b>Interventions before 2027 – Already in Industry Processes (Table 2 of the TfN Investment Programme)</b>				
Outcome	Intervention	Description	Development Stage	SDC Coverage
Provision of high speed rail services across the North to the rest of the UK, radically reducing journey times and providing enhanced connectivity	Crewe Hub	High speed rail hub at Crewe, including Crewe North Junction, to link to the existing classic network, enabling 5 to 7 high speed services to call at Crewe (the option known as 'Scenario 3')	Develop	West and Wales North West to Sheffield City Region



<b>Previously Announced Interventions (Table 1 of the TfN Investment Programme)</b>				
Enhancing connectivity between the North's largest economic centres, with faster more frequent services, to build on HS2	Hope Valley Line (Manchester – Sheffield Corridor)	Initial capacity improvements (passing facilities at Bamford and a second track running through Dore & Totley station) to allow a frequency of three fast trains in addition to one stopping train per hour and freight trains, together with further interventions for Northern Powerhouse Rail	Develop	Southern Pennines West and Wales North West to Sheffield City Region
Facilitating significant private sector investment to support economic growth and UK competitiveness	Cumbrian Coast Line	Journey time and capacity improvements	Develop	Connecting the Energy Coasts
Enabling the delivery of rail franchise commitments and accommodating forecast passenger growth	Lostock – Wigan	Electrification between Lostock Junction and Wigan North Western	Develop	West and Wales North West to Sheffield City Region
<b>Specific Interventions before 2027 – Proposed Early Phases of NPR and Additional TfN Priorities (Table 3 of the TfN Investment Programme)</b>				
Outcome	Intervention	Description	Development Stage	SDC Coverage
Ensuring the North is ready for HS2 to maximise the benefits of this nationally significant project	Preston Station	Improvements to accommodate HS2 services, support onward connectivity and enhance interchange facilities for passengers and rail services	Determine	Connecting the Energy Coasts North West to Sheffield City Region
	Carlisle Station	Improvements to accommodate HS2 services and support onward connectivity, including enhanced station access and parking facilities	Determine	Connecting the Energy Coasts North West to Sheffield City Region

<b>Previously Announced Interventions (Table 1 of the TfN Investment Programme)</b>				
Enhancing East-West strategic connections across the North to support UK competitiveness	Skipton – Colne	Route re-instatement to improve connectivity between East Lancashire and North/West Yorkshire	Determine	Central Pennines
	South Trans Pennine Line	Journey time and capacity improvements between Cleethorpes and Doncaster to increase links between Northern Lincolnshire and the Sheffield City Region and the North West	Determine	Southern Pennines
Facilitating the delivery of housing growth	Skelmersdale Rail Link	New rail link and town centre station connecting Skelmersdale to Liverpool and Manchester, as well as the national rail network	Determine	Central Pennines West & Wales
<b>Later Phases of Northern Powerhouse Rail and Further Potential Interventions (Table 4 of the TfN Investment Programme)</b>				
<b>Outcome</b>	<b>Potential Intervention</b>		<b>Next Steps</b>	
Enhancing connectivity between the North's largest economic centres, with faster more frequent services, to build on HS2	<ul style="list-style-type: none"> <li>Manchester – Sheffield Corridor (further interventions)</li> <li>Interventions at the major hubs necessary to realise the benefits of improved connectivity along the corridors identified above, including Sheffield and Manchester Piccadilly</li> </ul>		Continued funding from Government to develop an Outline Business Case and next stage design work	
Accommodate HS2 and Northern Powerhouse Rail services running north to Scotland	<ul style="list-style-type: none"> <li>West Coast Main Line – Wigan and Preston to Scotland (journey time and capacity improvements)</li> <li>Borders railway (supporting cross-border working with Transport Scotland and Borderlands Partnership)</li> </ul>		Further funding from Government through HS2 and Network	

Ensure that the West Coast Main Line stations are ready for HS2 and Northern Powerhouse Rail	<ul style="list-style-type: none"> <li>• Stockport station (later phases)</li> <li>• Warrington Bank Quay station (or integrated station at Warrington)</li> <li>• Wigan North Western station (or integrated station at Wigan)</li> <li>• Lancaster station</li> <li>• Oxenholme station</li> <li>• Penrith station</li> </ul>	Rail programmes
Enhance East-West strategic connections across the North to support UK competitiveness	Preston to York and Sheffield (journey time improvements)	
Ensure that the needs of freight operators can be met	<ul style="list-style-type: none"> <li>• Port of Liverpool to West Coast Main Line enhancements</li> <li>• Parkside enhanced connectivity</li> <li>• West Coast Main Line freight capacity enhancements</li> <li>• Port Salford rail freight access</li> <li>• Freight prioritised gauge cleared route across the Pennines</li> </ul>	
Improve connectivity and resilience to the Fylde Coast economic cluster	• South Fylde Line (journey time and capacity improvements)	
Improve capacity and resilience across Cumbria to connect with national energy infrastructure and economic clusters	<ul style="list-style-type: none"> <li>• Furness Line (journey time and reliability improvements)</li> <li>• Barrow to Whitehaven (frequency and journey time improvements)</li> <li>• Whitehaven to Newcastle (frequency and journey time improvements)</li> <li>• Windermere and Barrow to Manchester Airport (frequency and journey time improvements)</li> <li>• Windermere to West Yorkshire (service improvements)</li> </ul>	
Improve connectivity and resilience to the Liverpool City Region Economic Clusters	• Southport to Wigan (journey time improvements)	
Improve connectivity and resilience around the Lancashire economic clusters	<ul style="list-style-type: none"> <li>• Liverpool to Preston (journey time and service improvements)</li> <li>• Burnley to Manchester (journey time and service improvements)</li> <li>• Rossendale to Manchester public transport connectivity</li> <li>• East Lancashire Line (journey time and capacity improvements)</li> <li>• Colne to Accrington (journey time and service improvements)</li> <li>• Blackburn to Manchester Victoria (journey time improvements)</li> </ul>	

## Freight and Logistics

- 1.26 Freight within the North has been expressed in previous SDC work through reference to TfN's *Enhanced Freight and Logistics Report* (January 2018). Since the publication of the first four SPOCS, the evidence base for freight

has been expanded further through *The Impact of Infrastructure of Interventions on the Freight Industry*, which has been produced by MDS Transmodal (MSDT) on behalf of TfN (February 2019). This report forms the basis of freight information provided subsequently within this SPOC and is referenced accordingly.

## **The West Coast – Sheffield City Region SDC**

- 1.27 The West Coast - Sheffield City Region SDC extends north to south from the Scottish border north of Carlisle to the Midlands (West and East) south of Crewe and Sheffield, encompassing the Cumbrian coast to the west. It is centred upon the West Coast Main Line and Hope Valley rail routes and performs a number of functions; not only linking the Important Economic Centres (IECs) contained within the geography, but also acting as nationally (and internationally) significant trade routes for movement to / from and through the SDC area. The major rail hubs in this corridor include Carlisle, Preston, Crewe, Manchester and Sheffield.
- 1.28 Within the West Coast - Sheffield City Region SDC, the network is mixed-use, predominantly two-track railway, with all types of passenger and freight services often utilising the same track. It is this characteristic which acts as one of the key limiting factors to the planning and delivery of rail services in the North.
- 1.29 The West Coast Main Line (WCML) accommodates high speed passenger services between London Euston and Glasgow (West Coast Franchise), with calls at Crewe, Warrington, Wigan, Preston, Lancaster, Oxenholme, Penrith and Carlisle. It also facilitates TransPennine Express Services between Manchester and Glasgow / Edinburgh (and from Liverpool later in 2019). The core section of the WCML also accommodates all Northern services to Blackpool (from Manchester and Liverpool); and to Barrow and Windermere from Manchester. The corridor also comprises of the Preston to Manchester line both via Chorley and Chat Moss to the north-west of Manchester. The WCML accommodates intermodal freight traffic between South East England / Midlands and the Central Belt of Scotland, as well as movements associated with the energy sector on the West Cumbrian Coast. In addition to WCML, the Settle-Carlisle line also connects key areas of the North West with West Yorkshire. It carries passenger and freight services.
- 1.30 The Hope Valley Route between Manchester and Sheffield accommodates a mixture of express and stopping services between the two cities, extending to Manchester Airport and Liverpool to the west, and Nottingham / Norwich and Cleethorpes to the east. Interventions to improve the Hope Valley Line connecting Manchester – Sheffield City Region were considered as part of the Southern Pennines SDC Study. The corridor is most heavily utilised at the western end between Manchester and Stockport / Hazel Grove (for West Coast / Cross Country / Transport for Wales / Northern Services). At the eastern end between Sheffield and Dore (East Midlands / Northern Services / Cross Country using the Dore to Sheffield section) the line accommodates movements to and from mineral workings in the Hope

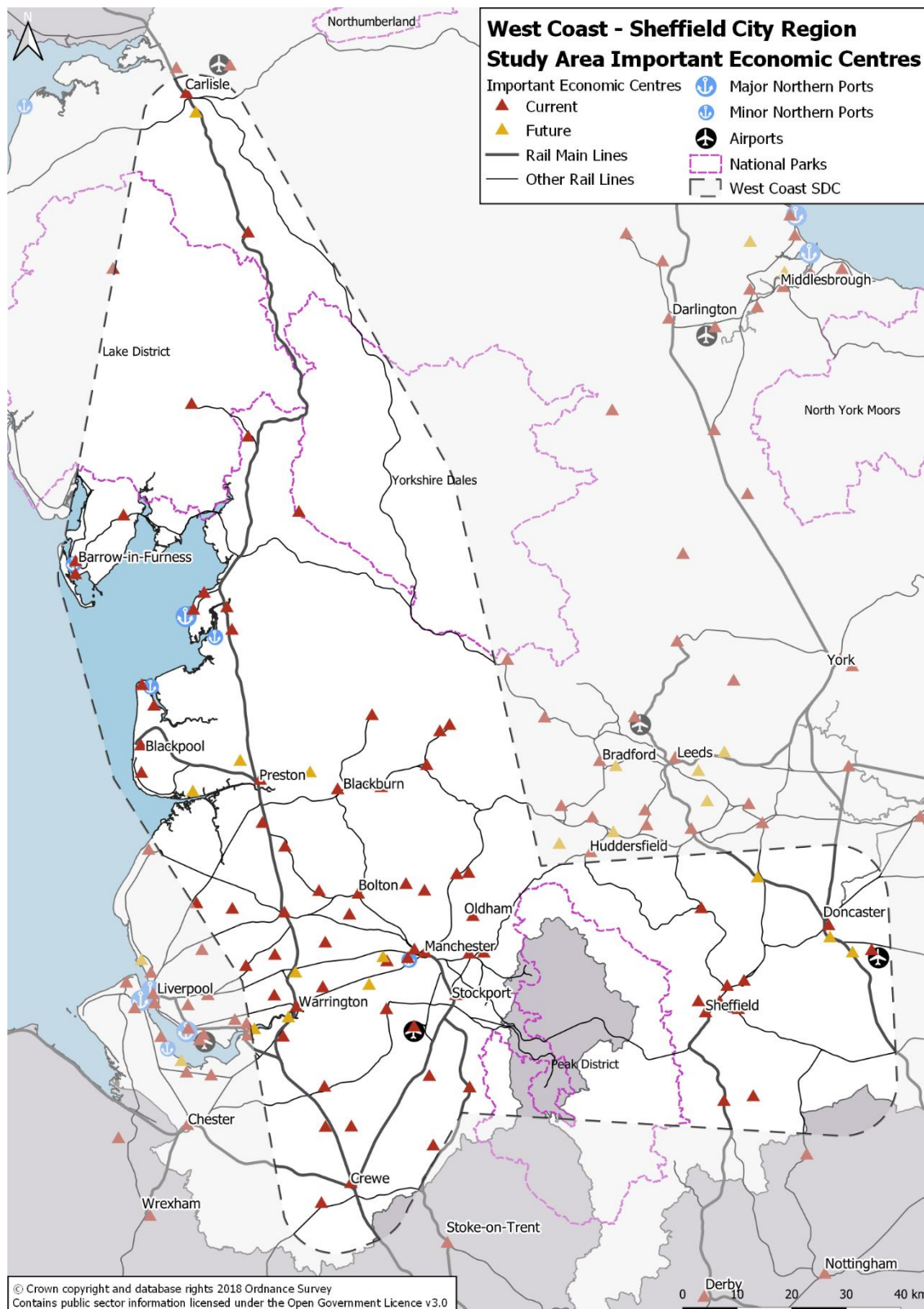
Valley, including quarry activity and cement production servicing the construction industry.

- 1.31 This rail corridor connects the advanced manufacturing, health technology, digital businesses, and research centres in the Sheffield City Region and those in Lancashire and Cumbria, facilitating connectivity and collaboration between these industries.
- 1.32 The corridor is home to globally significant businesses, supply chains and economic assets. Important centres including Warton Enterprise Zone, Samlesbury Enterprise Zone, Blackpool Airport Enterprise Zone, which is home to the National Energy College, Manchester Airport, and the Sheffield City Region Advanced Manufacturing Park, which is home to the Nuclear Catapult Research Centre, the Furness Peninsula and its major role in advanced manufacturing including subsea technologies, nuclear power transmission and marine engineering and the Kingmoor Park Enterprise Zone and St Cuthbert's Garden Village in Carlisle. The Fylde Coast is an established base for polymer science, nuclear and renewable energy, while Lancaster University to the west of the corridor is a leading research institute in addition to Royce Institute and Graphene centre in Manchester.
- 1.33 The corridor is also home to a major visitor economy, with Cumbria and Blackpool acting as assets for the UK economy. Rail travel is considered central to the success and sustainable growth of this sector with UK and international links provided by the West Coast Main Line and in to Manchester Airport seen as critical to the future sustainable growth of this sector.
- 1.34 All passenger services are provided under franchise or concession agreements with a letting authority. In most cases, the parties to the agreements are the operating company and the Department for Transport (DfT). However, the management of the Northern and TransPennine Express franchises is currently undertaken jointly by DfT and Transport for the North through the Rail North Partnership, the first such arrangement of its type.
- 1.35 'Open access' services operate on a commercial basis under license from the Office for Road and Rail (ORR), with no franchise or concession agreement in place. Track access has been recently agreed to operate services on the West Coast Main Line (WCML) between London and Blackpool from Spring 2020.
- 1.36 HS2 Phases 1 and 2a will provide a step-change in north-south connectivity once completed in 2026/27. The scheme will deliver a dedicated high-speed railway line between London and Crewe, with high speed services running on the 'classic' rail network to Liverpool, Manchester and further north on the West Coast Main Line. HS2 Phases 1 and 2a will significantly reduce journey times and increase capacity between cities in the North West of England, Birmingham and London. Current proposals for Phase 2b of HS2, intended for completion in 2033, will extend the dedicated high-speed line from Crewe to Manchester via Manchester Airport, as well as to a junction



on the West Coast Main Line at Golborne, where HS2 services to Wigan and stations further north would join the 'conventional' network.

**Figure 1-2: West Coast - Sheffield City Region SDC Study Area**



## Scope of Strategic Development Corridor SPOC

- 1.37 The TfN SDC business cases have been developed to a level of detail approaching a conventional 'single-scheme' Strategic Outline Business Case (SOBC)<sup>3</sup>, but greater than a Strategic Outline Programme (SOP). To distinguish them from these two documents defined in HM Treasury (HMT) and Department for Transport (DfT) guidance, they have given the description of Strategic Programme Outline Case (SPOC).
- 1.38 HMT public sector business case guidance<sup>4</sup> describes a Strategic Outline Programme (SOP) Business Case content specified to be appropriate to a programme of interventions, but at an early stage and with a relatively low level of detail, particularly in terms of Value for Money appraisal.
- 1.39 TfN's vision for its SDC business cases is that they demonstrate the justification for a sequenced programme of interventions within the context of the NPIER and transformational economic growth. The business case documents seek funding commitment sufficient to progress development of early sequence interventions and to further refine the overall programme.
- 1.40 It follows that the SDC programme of varied and wide-ranging interventions sequenced over an extended time horizon could not directly follow the above process. However, there are interdependencies and synergies between interventions within and between the SDCs which mean that the case for individual interventions would not represent its contribution to the whole package. For example, an early intervention may not deliver its full potential benefits until later interventions in the programme have been delivered.
- 1.41 Funding approvals for interventions within the SDC programmes will be sought through the UK public sector's staged approach to major investment decisions as shown for transport projects in Figure 1-3.

**Figure 1-3: The Three Phases of the Decision-Making Process**



Source: DfT Transport Business Cases

<sup>3</sup> DfT guidance uses SOBC whereas more recent Treasury guidance uses Strategic Outline Case (SOC) for the equivalent development stage for interventions with a single approval

<sup>4</sup>

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/469317/green\\_book\\_guidance\\_public\\_sector\\_business\\_cases\\_2015\\_update.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/469317/green_book_guidance_public_sector_business_cases_2015_update.pdf) (Oct 2015)

- 1.42 Fundamental to this process is the need for procurement activity to be complete before finalisation of the Full Business Case (FBC) and all required contracts entered shortly after an affirmative final investment decision. Business cases will be developed for interventions within the SDC individually or in packages of interventions sufficiently similar or related that they can be procured together.

## Structure of SPOC

- 1.43 The TfN SPOCs have been developed with reference to the HMT Green Book<sup>5</sup> best practice and DfT transport analysis guidance: WebTAG. The 2018 HMT Green Book requires a public-sector business case to evidence five main 'dimensions' (previously these were known as cases). TfN's SDC SPOCs follow this convention, in being structured as follows:
- An **Introduction** comprising chapter 1
  - The **Strategic Dimension** comprising chapters 2 to 7
  - The **Economic Dimension** comprising chapters 8 to 15
  - The **Financial Dimension** comprising chapter 16
  - The **Commercial Dimension** comprising chapter 17
  - The **Management Dimension** comprising chapter 18
  - **Glossary**
- 1.44 Each of the five business case dimensions opens with an explanation of its underlying purpose, followed by the key messages from that dimension. Each of the five dimensions closes with a summary. For the Economic Dimension, the summary is provided in the form of a Value for Money (VfM) statement which follows the approach set out in DfT's VfM Framework<sup>6</sup> document. Each SPOC is accompanied by a standalone non-technical summary document.

## Supporting Documents

- 1.45 This West Coast - Sheffield City Region SPOC sits alongside the SPOC documents produced for each of the Strategic Development Corridors, and beneath the Pan-Northern Passenger Rail SPOC, which will be updated to accommodate the findings of this and the East Coast to Scotland SPOC documents. For each individual SDC, the following documents, developed during the SDC study programme, provide additional detail in support of this SPOC:
- Investment Programme, TfN March 2019
  - West Coast – Sheffield City Region Position Statement, March 2019
  - Strategic Transport Plan, TfN March 2019

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[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/685903/The\\_Green\\_Book.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/685903/The_Green_Book.pdf)

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[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/669041/strategic-case-supplementary-guidance.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/669041/strategic-case-supplementary-guidance.pdf) (December 2017)

## Strategic Dimension

The Strategic Dimension of a business case sets out to demonstrate:

- That to achieve rational aims, there are problems that need to be solved and opportunities that need to be taken (the **case for change**)
- That transport investment (including in technology solutions) is an appropriate way to deliver that change and that TfN is the appropriate promoter (the **need for intervention**)
- That an appropriately broad approach has been taken to identifying interventions and a robust approach taken to shortlisting (the **option assessment process**)
- That constraints, interdependencies and the needs/capabilities/views of stakeholders have been identified and taken into consideration in selecting a way forward (the **wider context**)

## 2 Introduction

### Background

- 2.1 The Strategic Dimension sets out the robust **case for change**, which underlies the proposed programme of interventions for the West Coast - Sheffield City Region Strategic Development Corridor (SDC), and how it fits with wider policy objectives. It goes on to summarise the **need for intervention**, which justifies Transport for the North (TfN) promoting strategic transport interventions, drawing this evidence together in identifying a set of **objectives** specific to the SDC.
- 2.2 The Strategic Dimension goes on to explain key elements of the wider context and summarises the process through which an SDC Programme, tested against different levels of demand growth, has been developed.
- 2.3 The Strategic Dimension has been developed with reference to HM Treasury (HMT)<sup>7</sup> and Department for Transport (DfT)<sup>8</sup> business case guidance. It has

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[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/685903/The\\_Green\\_Book.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/685903/The_Green_Book.pdf)

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[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/85930/dft-transport-business-case.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/85930/dft-transport-business-case.pdf)

drawn on DfT Supplementary Strategic Case Guidance, with respect to its *Transport Investment Strategy*<sup>9</sup> and Rebalancing Toolkit<sup>10</sup>.

## Policy Context

- 2.4 The UK Government, as well as regional and local authorities, have identified the need for investing in strategic infrastructure to improve the country's productivity and increase economic growth and overall wellbeing in a way that is socially and environmentally responsible. In addition, the need for rebalancing the economy and shifting away from targeting purely 'net national' impacts has become increasingly important.
- 2.5 TfN needs to create an economy that works for everyone and every region has been highlighted in several national, regional and local policies. Infrastructure projects and changes delivered to stimulate the economic development of the West Coast - Sheffield City Region SDC needs to consider these policies to ensure consistency with the wider national framework and other infrastructure initiatives.

## National Policy

- 2.6 At a national level, the Government's Industrial and Transport Investment strategies outline the need to actively support the UK's long-term productivity and economic development through strategic infrastructure projects and investments<sup>11,12</sup>.
- 2.7 The *Industrial Strategy* sets the overall objective of creating an economy that boosts productivity and earning power throughout the entire UK. It identifies five main foundations of productivity:
- Ideas – 'the world's most innovative economy'
  - People – 'good jobs and greater earning power for all'
  - Infrastructure – 'a major upgrade to the UK's infrastructure'
  - Business Environment – 'the best places to start and grow a business'
  - Places – 'prosperous communities across the UK'

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[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/669041/strategic-case-supplementary-guidance.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/669041/strategic-case-supplementary-guidance.pdf) (December 2017)

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[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/669043/supplementary-guidance-rebalancing-toolkit.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/669043/supplementary-guidance-rebalancing-toolkit.pdf) (December 2017)

<sup>11</sup> HM Government, *UK Industrial Strategy*

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/664563/industrial-strategy-white-paper-web-ready-version.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/664563/industrial-strategy-white-paper-web-ready-version.pdf)

<sup>12</sup> Department for Transport, *Transport Investment Strategy* (2017)

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/624990/transport-investment-strategy-web.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/624990/transport-investment-strategy-web.pdf)



2.8 Improved infrastructure plays a key role in the Industrial Strategy, as the need for better connectivity to link up people and markets to attract investment has been highlighted. To stimulate more inclusive economic growth through transport investments, the strategy also takes greater account of regional imbalances to ensure that growth can be achieved across all regions in the UK.

2.9 DfT's *Transport Investment Strategy*<sup>13</sup> is closely aligned with the Industrial Strategy. The key objectives of the Transport Investment Strategy are shown in Table 2-1:.

**Table 2-1: DfT's Transport Investment Strategy Objectives**

Objective	Challenge
Create a more reliable, less congested, and better-connected transport network that works for the users who rely on it	Current transport networks have become increasingly out-of-date and experience increasing demand, causing delays and less reliability. In many places the transport network does not provide the connections people and businesses need.
Build a stronger, more balanced economy by enhancing productivity and responding to local growth priorities	UK productivity lags behind other developed countries and prosperity and benefits haven't been shared evenly between different regions, leaving some communities being left behind.
Enhance the global competitiveness by making Britain a more attractive place to trade and invest	The long-term success in a globalised world will depend on the UK's ability to attract job creating investment, enhance the country's industrial strengths and enhance global trade.
Support the creation of new housing	Transport infrastructure is considered as one of the keys to unlocking development and delivering places people want to live.

2.10 The necessity for improved transport links is also highlighted in the '*Making our Economy Work for Everyone*' report by the Inclusive Growth

<sup>13</sup> Department for Transport, *Transport Investment Strategy* (2017)  
[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/624990/transport-investment-strategy-web.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/624990/transport-investment-strategy-web.pdf)

Commission<sup>14</sup>. This report outlines that connecting people to economic assets and opportunities needs to be a key priority to enable inclusive economic growth. The report also states that investment in social infrastructure is required indicating the necessity for building transport and economic connectivity for regions and places which were previously disadvantaged due to poor transport links.

- 2.11 The DfT's Local Transport White Paper: *Creating Growth, Cutting Carbon: Making Sustainable Transport Happen*<sup>15</sup> vision is "...for a transport system that is an engine for economic growth, but one that is also greener and safer and improves quality of life in our communities". The key objectives identified by the White Paper are to encourage economic growth, reduce carbon emissions and encourage the wider objectives of transport (such as more physical activity, improved road safety and air quality). Similar references to socially and environmentally responsible economic growth are included in the UK Industrial Strategy. Guidance from 'The Clean Growth Strategy'<sup>16</sup> (Department for Business, Energy and Industrial Strategy) acknowledges that it is essential to reduce emissions with the lowest possible net cost to UK businesses and maximise the social and economic benefits arising from the change. This is envisaged by accelerating clean growth, improving energy productivity for businesses, promoting the shift to low carbon transport and using innovation in low carbon transport technology and fuels.
- 2.12 The Ministry of Housing, Communities and Local Government's 2018 draft *National Planning and Policy Framework*<sup>17</sup> sets out the need for sustainable development that has three overarching objectives: economic, social and environmental. The framework identifies the need for significant weight to be placed on supporting economic growth and productivity but states that opportunities should be taken to secure net gains across the three objectives.

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<sup>14</sup> Inclusive Growth Commission, *Making our Economy Work for Everyone* (2017)  
[https://www.thersa.org/globalassets/pdfs/reports/rsa\\_inclusive-growth-commission-final-report-march-2017.pdf](https://www.thersa.org/globalassets/pdfs/reports/rsa_inclusive-growth-commission-final-report-march-2017.pdf)

<sup>15</sup> DfT *Local Transport White paper: Creating Growth, Cutting Carbon: Making Sustainable Transport Happen* (2011)  
[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/3890/making-sustainable-local-transport-happen-whitepaper.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/3890/making-sustainable-local-transport-happen-whitepaper.pdf)

<sup>16</sup> Ministry for Business, Energy and Industrial Strategy, *The Clean Growth Strategy: Leading the way to a low carbon future* (2017)  
[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/700496/clean-growth-strategy-correction-april-2018.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/700496/clean-growth-strategy-correction-april-2018.pdf)

<sup>17</sup> Ministry of Housing, Communities and Local Government, *draft National Planning and Policy Framework* (2018)  
[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/685289/Draft\\_revised\\_National\\_Planning\\_Policy\\_Framework.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/685289/Draft_revised_National_Planning_Policy_Framework.pdf)

- 2.13 As outlined in the Prime Minister’s speech in July 2019, the government has aspirations to deliver a faster transpennine transport link between Leeds and Manchester with full details to be further published later in 2019. The PM has also set out intentions to give greater powers to council leaders and communities to help drive transport growth and spending in the North of England.

### Regional Policy

- 2.14 At the regional level, the aspiration of improving the country’s productivity and economic development through improved transport links is emphasised in different policy documents. The *Strategic Transport Plan (STP)*<sup>18</sup> published by TfN in 2018 has a clear vision of “connecting and growing the economy of the North of England”. This vision is supported by key Pan-Northern transport objectives shown below in Figure 2-1:

**Figure 2-1: TfN’s Key Pan-Northern Objectives**



- 2.15 The STP identifies seven SDCs (based on the 2017 Integrated Rail and Major Roads Reports), including the West Coast - Sheffield City Region SDC, as shown in Chapter 1. These corridors are representative of where evidence indicates delivery of transformational growth is dependent on bringing forward major road and rail investment.
- 2.16 Through the Northern Powerhouse Independent Economic Review (NPIER), transport investment has been shown to be a key enabler for growth in the North’s economy. In short, transport has three main roles that can help support the North’s existing and future economic assets and clusters:

<sup>18</sup> Transport for the North, *Strategic Transport Plan* (2018)  
[https://transportforthenorth.com/wp-content/uploads/TfN-Strategic-Plan\\_draft\\_lr.pdf](https://transportforthenorth.com/wp-content/uploads/TfN-Strategic-Plan_draft_lr.pdf)

- Connecting people - improving access to work opportunities, giving businesses access to a wider labour market, and improving access to leisure and tourism assets.
- Connecting businesses - improving connections to collaborators, clients and competitors, including those within the prime and enabling capabilities.
- Moving goods - supporting businesses to move freight and goods in efficient, multi-modal ways.

2.17 Collectively, these three roles provide the key aims of the STP for the North, and will be achieved through improved:

- Connectivity between the North's economic assets and clusters;
- Multi-modal connectivity improvements;
- Delivering nationally significant infrastructure projects, major employment and major local development approvals;
- Cross-border connectivity with the North's economic neighbours; and
- Supporting the international connectivity of the North.

2.18 The STP is closely aligned with the "*One North*" report published in 2014<sup>19</sup>, which first set out the vision for a Northern Powerhouse. One North highlights the need for a new strategic approach to connect the cities of the North to support improvements in economic performance. The outlined approach emphasises the necessity for improving connectivity to maximise economic growth in the North. The STP envisions a highly interconnected and integrated region of thriving cities, acting as a valuable counterweight and complement to London.

2.19 The need for better connectivity and closer collaboration in the North is also demonstrated by the NPIER<sup>20</sup> published in 2016. The NPIER outlines the performance gap between the North and the rest of the UK with respect to productivity and identifies the lack of agglomeration, poor connectivity and transport links as key factors (among others) that hinder the economic development of the North. The NPIER concludes that improved connectivity between key settlements can help to:

- promote a higher employment rate, by improving access to centres of employment
- promote higher productivity, by improving access to markets
- increase the pool of workers available to work in higher productivity urban locations
- increase the effective scale of cities and the associated benefits of agglomeration

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<sup>19</sup>Transport for the North, *The Northern Powerhouse: One Agenda, One Economy, One North* (2015) <https://www.transportfornorth.com/wp-content/uploads/A-report-on-the-Northern-Transport-Strategy-1.pdf>

<sup>20</sup> Transport for the North, *The Northern Powerhouse Independent Economic Review* (2016) <https://transportfornorth.com/wp-content/uploads/Northern-Powerhouse-Independent-Economic-Review-Executive-Summary.pdf>

- 2.20 The NPIER set out a bold vision of economic transformation for the North that will rebalance the UK economy and increase international competitiveness. It articulates the vision of a transformed North and concluded that improving economic performance in the North could bring significant benefits for the UK economy by 2050 of:
- £92 billion (15%) increase in Gross Value Added (GVA) (the measure of the value of goods and services produced in an area, industry or sector of an economy)
  - 850,000 additional jobs
  - 4% higher productivity than in a business as usual scenario.
- 2.21 This uneven development between different regions within the UK and the need for rebalancing the UK economy is also the focus of the 'Rebalancing Toolkit' developed by the DfT<sup>21</sup>. This toolkit is designed to help authors of strategic cases assess how a project fits with the objective of spreading growth across the whole country.
- 2.22 The evidence base on the visitor economy and transport demand in the North of England acknowledges that there are positive impacts the visitor economy can have on improving inward investment levels, owing to the increased "attractiveness of place" and that transport connectivity plays a key role since "*the visitor economy both provides demand on the transport network and the provision of the transport network enables growth of the destinations*"<sup>22</sup>. If supported by the right infrastructure and increasing the ease of connectivity, this will drive an increased demand for services in the North and the airports and ports could make an increased material contribution to international connectivity<sup>23</sup>.
- 2.23 The Northern Freight and Logistics Report<sup>24</sup> identifies the need for better connectivity with respect to freight and logistics. The report sets the out the overall objective: "*Maximise the efficiency of the movement of goods to, from and within the North of England to contribute to the transformation of the economy of the Northern Powerhouse*".

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<sup>21</sup> Department for Transport, *Strategic Case Supplementary Guidance Rebalancing Toolkit* (2017) [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/669043/supplementary-guidance-rebalancing-toolkit.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/669043/supplementary-guidance-rebalancing-toolkit.pdf)

<sup>22</sup>Transport for the North, Strategic Transport Plan Evidence Base, *Visitor Economy and Transport Demand in the North of England – Analysis undertaken by Merseytravel* (2019) <https://transportforthenorth.com/wp-content/uploads/Visitor-Economy-and-Transport-Demand-in-the-North-Analysis-min.pdf>

<sup>23</sup> Transport for the North, *Independent International Connectivity Commission Report* (2017), [https://transportforthenorth.com/wp-content/uploads/International-Connectivity-Report\\_websafe.pdf](https://transportforthenorth.com/wp-content/uploads/International-Connectivity-Report_websafe.pdf)

<sup>24</sup> Transport for the North, *Northern Freight and Logistics Report* (2018) <https://www.transportforthenorth.com/wp-content/uploads/TfN-Freight-and-Logistics-Report.pdf>



## **TfN's Rail Policy and Local Policy**

- 2.24 TfN's Strategic Transport Plan (STP) as well as their Investment Plan outlines a 30-year vision and interventions to allow for better connectivity for goods, people and businesses for the North. With £70 billion of investment up to 2050, the document outlines how this investment can contribute to a further £100 billion in economic growth for the region. The Investment Plan highlights short, medium and long-term plan for this investment including key programmes such as the Northern Powerhouse Rail scheme, rail network enhancements and continued roll out of smart ticketing schemes.
- 2.25 The draft Long Term Rail Strategy (LTRS) is TfN's supporting policy document for rail in the North of England. The LTRS supports the STP and will be used to inform TfN's future programme of work and its input into wider rail industry processes. It will influence and inform the investment strategies, policies and programmes pursued by national Government, devolved bodies, Network Rail and Local Transport Authorities.
- 2.26 The draft LTRS sets out an ambitious series of improvements covering the rail network across the whole of the North of England. It recognises that a high-quality rail network can be an enabler of increased productivity, economic growth and improved quality of life.
- 2.27 The improvements prescribed in the draft LTRS are structured around the "5Cs":
- Connectivity;
  - Capacity;
  - Customers;
  - Communities; and
  - Cost-effectiveness
- 2.28 The schemes within the Passenger Rail SPOC (October 2019) programme are primarily aimed at enabling connectivity improvements – connecting places faster, more frequently and more directly. The intended outcome from such improvements is to improve rail's attractiveness relative to other modes – primarily private car – and to increase modal shift. In turn, this will support the growth of the economy (employment and population) whilst mitigating the impacts of traffic congestion, particularly (but not exclusively) for travel to and from urban centres.
- 2.29 The draft LTRS defines a series of conditional outputs and desirable minimum standards which have been used to define the connectivity improvements within the Passenger Rail SPOC programme. The key desirable minimum standards considered within the Passenger Rail SPOC are:
- All passenger routes to be served by a minimum of two trains per hour;
  - Inter-urban services to achieve average journey speeds of at least 60mph; and

- Local and suburban services to achieve average journey speeds of at least 40mph.
- 2.30 The draft LTRS sits within a national policy context set primarily by the DfT. In November 2017 DfT published *Connecting people: a strategic vision for rail*. The document sets out the national strategic vision for rail and focusses on:
- A more reliable railway – with spending on asset renewals, deploying digital technology and rolling out joint management of infrastructure and operations;
  - An expanded network – expanding commuter routes, unlocking housing and development, and building new high-capacity railways;
  - A better deal for passengers – including smart technology, improved compensation arrangements, and new models for passenger services;
  - A modern workforce – including improvements to skills, incentivisation, and diversity; and
  - A productive and innovative sector – accelerating innovation, embedding sustainable development and supporting inward investment.
- 2.31 TfN's *Connecting the Energy Coasts*<sup>25</sup> SDC document outlines that there is a further need for better connectivity in the North West and the North East as set out in the respective policy section. By improving connectivity along key settlements, economic growth can be improved and further enhanced by promoting higher employment rates through better access throughout the region, creating higher productivity will improve GVA for the region, increasing the pool of skilled workers available within higher productivity urban centres and also increasing the effectiveness of cities produced greater benefits of agglomeration.
- 2.32 In addition to these national and regional policies, a series of local transport and rail policies exist, which define priorities within each of TfN's partner authority areas.

### **Cumbria and Borders Transport Policy**

- 2.33 The strategic importance of rail networks to the economy and communities of Cumbria is strongly recognised across a range of strategy including the Local Transport Plan, Local Industrial Strategy and the Cumbria Infrastructure Plan<sup>26</sup>. These highlight the importance of rail in providing access to jobs, supply chains and services across an extensive geography; but also, in boosting strategic connectivity with the West Coast Mainline

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<sup>25</sup> Transport for the North, *Connecting the Energy Coasts: SPOC* (2019), <https://transportforthenorth.com/wp-content/uploads/Connecting-the-Energy-Coasts-SPOC-FINAL-26.02.pdf>

<sup>26</sup> [https://www.thecumbrialep.co.uk/wp-content/uploads/2018/02/31341\\_Cumbria-LEP-Infrastructure-Plan\\_FINAL\\_v2-2.pdf](https://www.thecumbrialep.co.uk/wp-content/uploads/2018/02/31341_Cumbria-LEP-Infrastructure-Plan_FINAL_v2-2.pdf)

critical in linking Cumbria and its strengths in energy, manufacturing and the visitor economy to the wider Northern Powerhouse and UK. Alongside passenger movements; the freight role of rail is considered vital to the economy of the County and to the delivery and operation of major developments.

- 2.34 To ensure rail networks are able to make the fullest contribution within Cumbria a series of essential line upgrades have been defined and are articulated through the Cumbria Local Industrial Strategy:
- Cumbrian Coast Line – capacity and line speed improvements
  - Lakes Line – electrification and capacity improvements
  - Furness Line – line speed and capacity improvements and electrification
  - Tyne Valley Line – line speed improvements
  - West Coast Main Line – increased capacity
  - Station enhancements including Carlisle Station
- 2.35 Alongside these; the Borderlands Inclusive Growth Deal identified a new link to extend Edinburgh Waverley Line to Carlisle to be of strategic, cross boundary, importance. A feasibility study has been approved looking into the extension of the Borders Railway extension.
- 2.36 Aligned to these schemes, the development of proposals has been ongoing with some success. This includes proposals for the upgrade of the Cumbrian Coast Line entering the “Develop” stage of the Rail Network Enhancement Pipeline; and following inclusion within the Heads of Terms for the Borderlands Inclusive Growth Deal, an Outline Business Case is being developed for improved access, station facilities and public realm at Carlisle Station. Also, part of this Growth Deal, funding has been identified for feasibility work and the development of a Strategic Outline Business Case for the extension of the Edinburgh Waverley Line to Carlisle. In addition; partners are currently exploring options to progress the development of enhancements to the Lakes Line.
- 2.37 Complementing this activity; the Furness, Lakes, Cumbrian Coast, Settle and Tyne Valley Lines all benefit from strong Community Rail Partnerships. These are proactive in working with communities to bring forward a wide range of station and service improvements.

#### **Lancashire Transport Policy**

- 2.38 The current Lancashire Transport Plan<sup>27</sup> includes rail policy to maintain and secure a strong economic future by increasing and improving the efficiency and effectiveness between key economic centres within the area. This

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<sup>27</sup> Lancashire County Council, *Local Transport Plan 2011-2021 A Strategy for Lancashire* (2011),  
[https://www.lancashire.gov.uk/media/191267/LTP3\\_through\\_full\\_council.pdf](https://www.lancashire.gov.uk/media/191267/LTP3_through_full_council.pdf)

includes improved links between Lancashire through to the Energy Coast. The LTP recognises current overcrowding issues along the West Coast Main Line regardless of improved services between Preston and Manchester. Whilst also highlighting poor links between more rural areas of Lancashire including Clitheroe. By providing better links to these more rural areas, this will provide accessibility for both commuters towards employment sites and good accessibility for tourists and isolated communities, further enhancing economic growth. On top of the Lancashire LTP3, current developments for a pan-Lancashire Local Transport Plan (LTP4), covering Lancashire County Council, Blackpool Council and Blackburn and Darwen Council, aimed to be adopted by mid-2020, will replace current individual LTP3s for these areas which all expire in 2021.

### **Greater Manchester Transport Policy**

- 2.39 The Greater Manchester Transport Strategy<sup>28</sup> sets out the city region's approach to transport in the period to 2040. The document identifies the key challenges facing the city region: supporting sustainable economic growth (with significant growth of population and employment expected over the plan period); improving quality of life; protecting the environment; and developing an innovative city region. The vision, as set out in the draft delivery plan document sets a target of at least 50% of journeys made in Greater Manchester to be by sustainable means – that is, on foot, by bike or by public transport. This amounts to around 1 million more journeys by sustainable modes every day.
- 2.40 A number of rail interventions are proposed in the Delivery Plan. These include HS2 and NPR, improved local rail services through the delivery of tram-train services to better integrate local heavy and light rail (Metrolink) services, and a new city centre rail tunnel to address long-term capacity issues in Central Manchester. Current improvements to Greater Manchester's rail network, as outlined within the strategy, have already been set out; these will effectively double the capacity and relieve overcrowding issues on the suburban network. This will be achieved through electrification programmes, as well as the delivery of the Northern Hub and the new Northern and Transpennine franchise up to the mid-2020s. The strategy also outlines the need for further capacity on the rail network by improvements made to the infrastructure and rolling stock provision to allow growth for the region.

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<sup>28</sup> Transport for Greater Manchester, *Greater Manchester Transport Strategy 2040* (2017), <https://downloads.ctfassets.net/nv7y93idf4jq/7FiejTsJ68eaa8wQw8MiWw/bc4f3a45f6685148eba2acb618c2424f/03. GM 2040 TS Full.pdf>

### Cheshire and Warrington Transport Policy

- 2.41 The Strategic Economic Plan (SEP)<sup>29</sup>, produced by the Cheshire and Warrington Local Enterprise Partnership (CWLEP) is also in line with other policies highlighting the need to improve connections to other sub-regions and international gateways as well as to support the development of priority employment sites. Finally, the Economic Development Strategy for Cheshire East<sup>30</sup> also emphasises the need for a better-connected economy through enhancing transport connections to other areas and increasing integration with the cities of Greater Manchester and Liverpool. Investments in key transport initiatives are aimed at achieving a thriving economy that improves the wellbeing of communities and residents.

### Sheffield City Region Transport Policy

- 2.42 The Sheffield City Region Integrated Rail Plan<sup>31</sup> outlines components towards building a transport system that provides connections for people to use within the region, nationally and internationally, that is cleaner and greener for the City Region and that is also safe, accessible and reliable. Components identified within the document include improved connectivity, improved speed and frequency of rail services and major network improvements, with some other specific components identified in Table 2-2 below.

**Table 2-2: Sheffield City Region Transport Strategy Components**

Connecting HS2 trains from Sheffield to North East and Leeds
Improved speed and frequency of trains from Sheffield to Greater Manchester and Leeds
Barnsley and Rotherham intercity rail connectivity
New station located at Dearne Valley on the NPR line with potential to serve HS2 also
Investment on upgrades to West Coast Main Line and Midland Main line
New station located in Rotherham for businesses and communities in the Advanced Manufacturing Innovation District
Extension of the train-tram network into Dearne Valley, Doncaster and Doncaster Sheffield Airport

<sup>29</sup> Cheshire and Warrington Local Enterprise Partnership (CWLEP), Strategic Economic Plan (2017). <http://www.871candwep.co.uk/resources/draft-transport-strategy/>

<sup>30</sup> Cheshire East Council, Economic Development Strategy for Cheshire East (2011) <http://moderngov.cheshireeast.gov.uk/ecminutes/mgConvert2PDF.aspx?ID=12766>

<sup>31</sup> Sheffield City Region, *Sheffield City Region Integrated Rail Plan* (2019), [sheffieldcityregion.org.uk](http://sheffieldcityregion.org.uk)

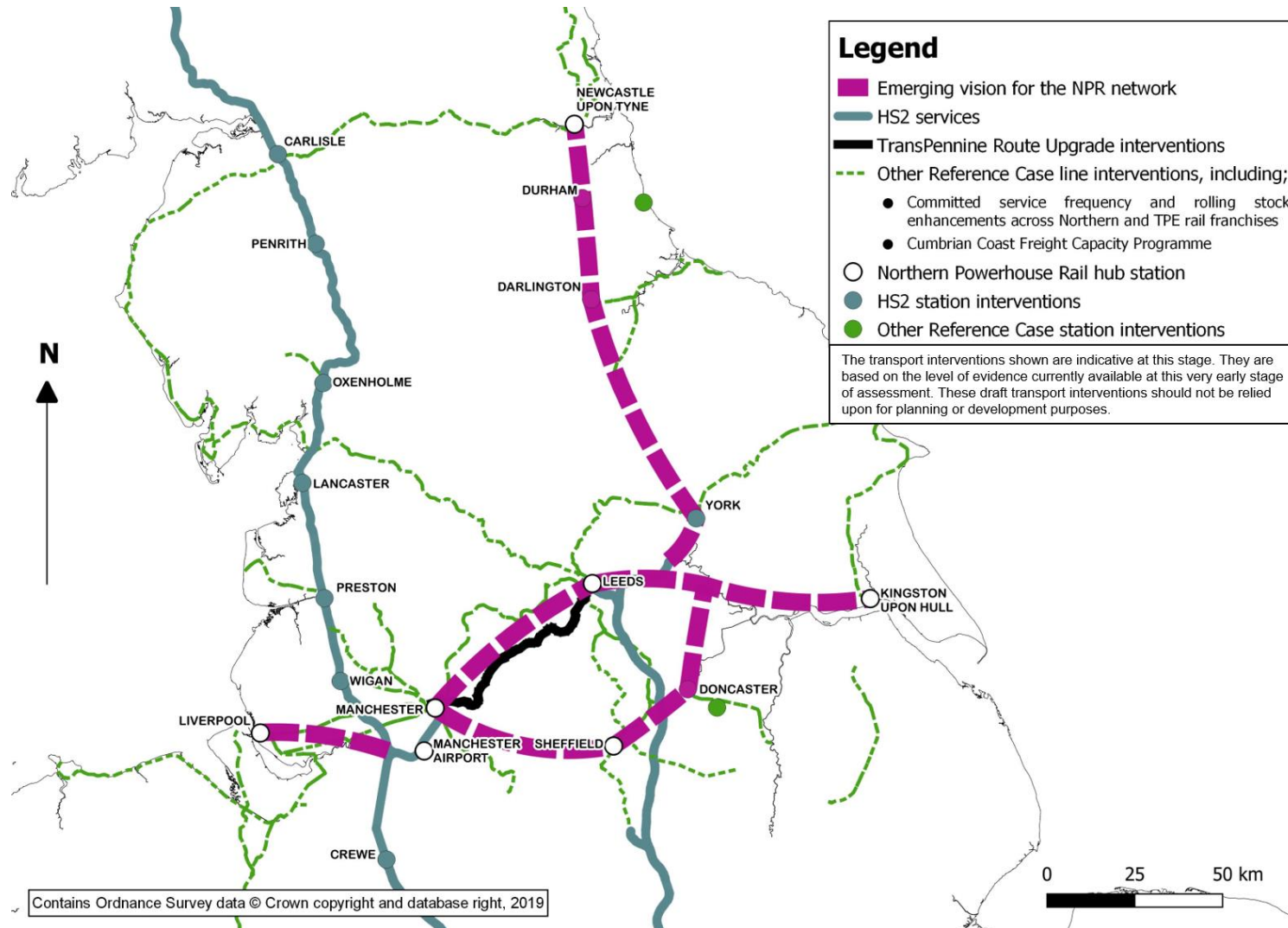
- 2.43 The strategy further identifies four key programmes set out as priorities to implement covering rail, active travel, public transport and roads including what investment is required specifically for the rail network. The plan recognises that, while the benefits of national investment in HS2 and Northern Powerhouse Rail (NPR), should be maximised, there needs to be ongoing, complementary investment in the local and regional rail and road networks. By doing this, the plan can best improve capacity, reliability, affordability, and journey times for communities and businesses across the Sheffield City Region.

### **The Reference Case**

- 2.44 The Government is already funding a significant programme of transport interventions across the North. In addition, further investment is being planned by both central Government and local bodies. This includes road investment schemes put forward by Highways England, transport schemes developed by combined and local authorities across the North, Pan-Northern schemes such as NPR being developed by TfN, and HS2, led by Central Government. It should be noted that work is currently ongoing to define what the network for NPR and HS2 should look like.
- 2.45 Figure 2-2 illustrates HS2 (Phases 1, 2a and 2b) and the Northern Powerhouse Rail (NPR) alongside other reference case interventions. Combined, these will transform journey times and service frequencies between the North's largest cities and to London, Birmingham and the Midlands. It is therefore expected that significant investment in new transport infrastructure will be delivered in the coming decades to address connectivity challenges of the current transport system.



**Figure 2-2: Locations of reference case interventions**



- 2.46 In this context, a Reference Case, considered to be a 'do-minimum' scenario, has been developed by TfN which includes both committed schemes and non-committed strategic interventions that can be reasonably expected to be delivered in the medium and long term and are necessary to achieve the North's economic growth aspirations.
- 2.47 For the purposes of this study, the Transport Appraisal Guidance (TAG) definition of reasonably foreseeable has been extended for the SDCs to include any strategic intervention that is at Strategic Outline Business Case (SOBC) stage or equivalent, including interventions without an identified funding route. Post 2027 the reference case includes other work programmes identified by the STP as necessary to achieve the North's economic growth aspirations. For a full list of interventions covered by the reference case for the West Coast - Sheffield City Region SDC, see Table 2-3.

**Table 2-3: Reference case parameters and assumptions**

2020-2027	Post 2027
STP 'baseline investment assumptions' will be included in the Reference Case (already been confirmed by Highways England, Network Rail and DfT as committed).	Reference Case includes other work programmes identified by the STP as necessary to achieve the North's economic growth aspirations; HS2, NPR, Northern Trans-Pennine Routes, Trans Pennine Tunnel & Wider Transport Connectivity Assessment and Manchester North-West Quadrant.
Interventions identified by the SDC consultants and TfN as being 'reasonably foreseeable'.	Reference Case should be developed to ensure a 'do-minimum' standard within the transport model is represented.
WebTAG definition of reasonably foreseeable has been extended for the SDCs to include any strategic intervention that is at SOBC stage	

2020-2027	Post 2027
or equivalent, including those without an identified funding route.	
Expect to include interventions within Highways England's Road Investment Strategy and Network Rail's Enhancements Delivery Plan	

2.48 The Reference Case for passenger rail comprises:

- Infrastructure enhancements committed for delivery as part of Network Rail's Enhancements Delivery Plan. This includes, for example, the Transpennine Route Upgrade (TRU) and North of England Programmes;
- Service frequency enhancements committed as part of existing franchise agreements – including those committed by the Northern and Transpennine Express franchises;
- HS2 Phases 1, 2a and 2b. Despite Phases 2a and 2b still being subject to Parliamentary consideration and subsequent legislation, the impacts on journey times, particularly between centres in the North and London, are such that they could serve to 'mask' the impacts of the Passenger Rail SOP. It was therefore considered appropriate to include HS2 within the Reference Case. The modelled service pattern for HS2 has been assumed to be as per that published in the most recent business case<sup>32</sup> with Crewe Hub proposals;
- The Northern Powerhouse Rail (NPR) programme, TfN's flagship rail scheme which seeks to transform journey times and service frequencies between the North's largest cities. Similarly to HS2 above, the impacts of NPR are of sufficient scale that the further impacts induced by the Passenger Rail SOP may be difficult to differentiate. It was therefore considered appropriate that NPR form part of the Reference Case for the SDC studies.

2.49 In addition, a small number of additional schemes were included in the Reference Case, despite not being fully committed at the time of study preparation. These were schemes where a significant proportion of the anticipated capital cost had been secured by the scheme promoter, and the scheme was justified by an Outline Business Case. The programme of

<sup>32</sup> <https://www.gov.uk/government/publications/hs2-phase-two-economic-case>

interventions put forward within this SPOC has been developed to maximise the overall benefits of the schemes in the Reference Case and to improve the spatial distribution of benefits.

- 2.50 The Reference Case assumptions in this SDC remain consistent with the other previously published SDCs. Future phases of SDC development will monitor and review these assumptions as development continues on TRU, HS2, NPR and other schemes.

## Investment Programme importance to the West Coast- Sheffield City Region Study Area

- 2.51 The West Coast – Sheffield City Region SDC, like the East Coast – Scotland SDC, builds upon the TfN Investment Programme, which was informed by earlier SDC studies. This SDC seeks to capture interventions that are not already encompassed within the four tables of the Investment Programme. Table 2-4 summarises those rail interventions from the Investment Programme applicable to the geography of this SDC, including some of the Reference Case assumptions listed above.

**Table 2-4: TfN Investment Programme interventions applicable to the West Coast - Sheffield City Region geography**

Area	Interventions
Whole corridor	<ul style="list-style-type: none"> <li>• HS2 Phases 2A and 2B Crewe Hub</li> <li>• Northern and Trans-Pennine rail franchises</li> <li>• Interventions at the major hubs necessary to realise the benefits of improved connectivity along key corridors, including Sheffield and Manchester Piccadilly</li> <li>• West Coast Main Line – Wigan and Preston to Scotland (journey time and capacity improvements)</li> <li>• Preston to York and Sheffield (journey time improvements)</li> <li>• West Coast Main Line freight capacity enhancements</li> <li>• Freight prioritised gauge cleared route across the Pennines</li> </ul>
Cumbria	<ul style="list-style-type: none"> <li>• Oxenholme – Windermere enhancements</li> </ul>

Area	Interventions
	<ul style="list-style-type: none"> <li>• Cumbrian Coast Line</li> <li>• Carlisle Station</li> <li>• Oxenholme station</li> <li>• Penrith station</li> <li>• Furness Line (journey time and reliability improvements)</li> <li>• Barrow to Whitehaven (frequency and journey time improvements)</li> <li>• Whitehaven to Newcastle (frequency and journey time improvements)</li> <li>• Windermere and Barrow to Manchester Airport (frequency and journey time improvements)</li> </ul>
Lancashire and Manchester	<ul style="list-style-type: none"> <li>• Manchester – Preston improvements</li> <li>• Cross-Manchester Capacity and Reliability</li> <li>• Lostock – Wigan</li> <li>• Preston Station</li> <li>• Skipton – Colne</li> <li>• Skelmersdale Rail Link</li> <li>• Stockport station (later phases)</li> <li>• Wigan North Western station (or integrated station at Wigan)</li> <li>• Lancaster station</li> <li>• Port of Liverpool to West Coast Main Line enhancements</li> <li>• Parkside enhanced connectivity</li> <li>• Port Salford rail freight access</li> <li>• South Fylde Line (journey time and capacity improvements)</li> </ul>

Area	Interventions
	<ul style="list-style-type: none"> <li>• Southport to Wigan (journey time improvements)</li> <li>• Liverpool to Preston (journey time and service improvements)</li> <li>• Burnley to Manchester (journey time and service improvements)</li> <li>• Rossendale to Manchester public transport connectivity</li> <li>• East Lancashire Line (journey time and capacity improvements)</li> <li>• Colne to Accrington (journey time and service improvements)</li> <li>• Blackburn to Manchester Victoria (journey time improvements)</li> </ul>
Sheffield	<ul style="list-style-type: none"> <li>• Hope Valley Line (Manchester – Sheffield Corridor)</li> <li>• South Trans-Pennine Line</li> </ul>
Warrington and Cheshire	<ul style="list-style-type: none"> <li>• Crewe Hub</li> <li>• Warrington Bank Quay station (or integrated station at Warrington)</li> </ul>

2.68 The interventions listed above within the Reference Case assumptions and Investment Programme are anticipated to improve rail provision across the corridor, including the following selected examples.

- Direct services via HS2 to London, Birmingham and Scotland from locations on the West Coast Main Line including Crewe, Warrington, Wigan, Lancaster and Carlisle, as well as to London and Birmingham from Manchester and Sheffield;
- Station improvements associated with HS2 at Warrington, Wigan, Preston, Lancaster, Oxenholme, Penrith, Carlisle, Manchester Piccadilly and Sheffield;



- Provision of hourly services between Manchester Airport and each of Windermere and Barrow through either separate services or split/join operation;
- An increase from five to six trains per hour between Manchester and Preston: 1 service fast via Bolton, 1 service fast via Golborne, 1 service semi-fast via Bolton and 3 services stopping via Bolton;
- An increase from three to five trains per hour between Manchester and Sheffield: Northern Powerhouse Rail (NPR) with 4 services via Stockport and 1 service via Marple;
- Increases to two trains per hour on routes including Workington – Carlisle, Barrow – Lancaster, Preston – Blackpool South, Preston – Colne, Preston – Leeds, and Burnley – Manchester; and
- New TransPennine Express services between Liverpool and Glasgow via the West Coast Main Line

2.69 The Reference Case assumptions in this SDC remain consistent with the other previously published SDCs. Future phases of SDC development will monitor and review these assumptions as development continues on schemes including HS2, NPR and others in the Investment Programme.

### **Structure of Strategic Dimension**

2.70 The remainder of the Strategic Dimension of this SPOC is structured as follows:

- Chapter 3 sets out the Case for Change which is the foundation for the programme of interventions justified within this business case
- Chapter 4 outlines the Need for Intervention and identifies SDC objectives
- Chapter 5 explains the wider context with influence on the deliverability of the programme and the interventions within it
- Chapter 6 summarises the option assessment process which identified interventions within the SDC
- Chapter 7 summarises the findings of the Strategic Dimension

## 3 The Case for Change

### Introduction

- 3.1 This chapter sets out the Case for Change which underlies the justification for strategic investment in the West Coast - Sheffield City Region development corridor. Fundamentally, transport investment infrastructure is required to support transformational growth in the North which in turn increases the potential for national economic growth.
- 3.2 The Case for Change is based on identifying problems which need to be solved and opportunities which need to be taken to allow and support growth in the North's economy.

### Need for growth in the North's economy

- 3.3 The North is home to 515,000 businesses, more than 6.8 million jobs, and over 15 million people, with population growth of 6.7% over the last 20 years.
- 3.4 The North has a wealth of high-profile, growing UK-wide and international businesses, and a long history of innovation, utilising the rich and diverse set of assets and talent to support national growth. Over the last decade businesses and employees across the North have generated an additional £65 billion (25%) to the UK economy. Today the North is the second most productive region in the UK in absolute terms, with a total economic contribution of over £332 billion, 19% of the UK's total.
- 3.5 However, while some individual economies of the city regions of the North have experienced strong economic progress, the North as a region lags behind London and the South East with respect to its economic performance. A significant and widening performance gap between the North and the rest of the UK has become evident and will continue to grow unless action is taken to reverse this trend.
- 3.6 Investment in transport infrastructure is required to support transformational growth in the North and subsequently increase the potential for national economic growth due to:
  - **The size of the North's economy:** being the second most productive region in the UK in absolute terms demonstrates the North's importance to national productivity.

- **Poor productivity performance:** When considered on a GVA per hour worked basis the North's productivity level is 88% of the UK average. The North also performs poorly when productivity is measured on a GVA per worker or per capita basis and this productivity gap is growing.
- **A need to invest in and support the NPIER Prime and Enabling Capabilities<sup>33</sup>;** The Capabilities are key differentiators of the North's economy on an international level, which are highly productive and capable of competing on national and international stages. Support for these capabilities is required to achieve the ambition for transformational growth.
- **Transport infrastructure's contribution to economic growth;** Transport can contribute to achieving transformational growth particularly through agglomeration, labour market expansion, connectivity to global markets and encouraging skills investment.

3.7 The success of the UK in the global marketplace and the success of the Government's Northern Powerhouse Strategy and Industrial Strategy depends upon transforming the economy of the North.

#### **West Coast - Sheffield City Region SDC contribution to the North's Economy**

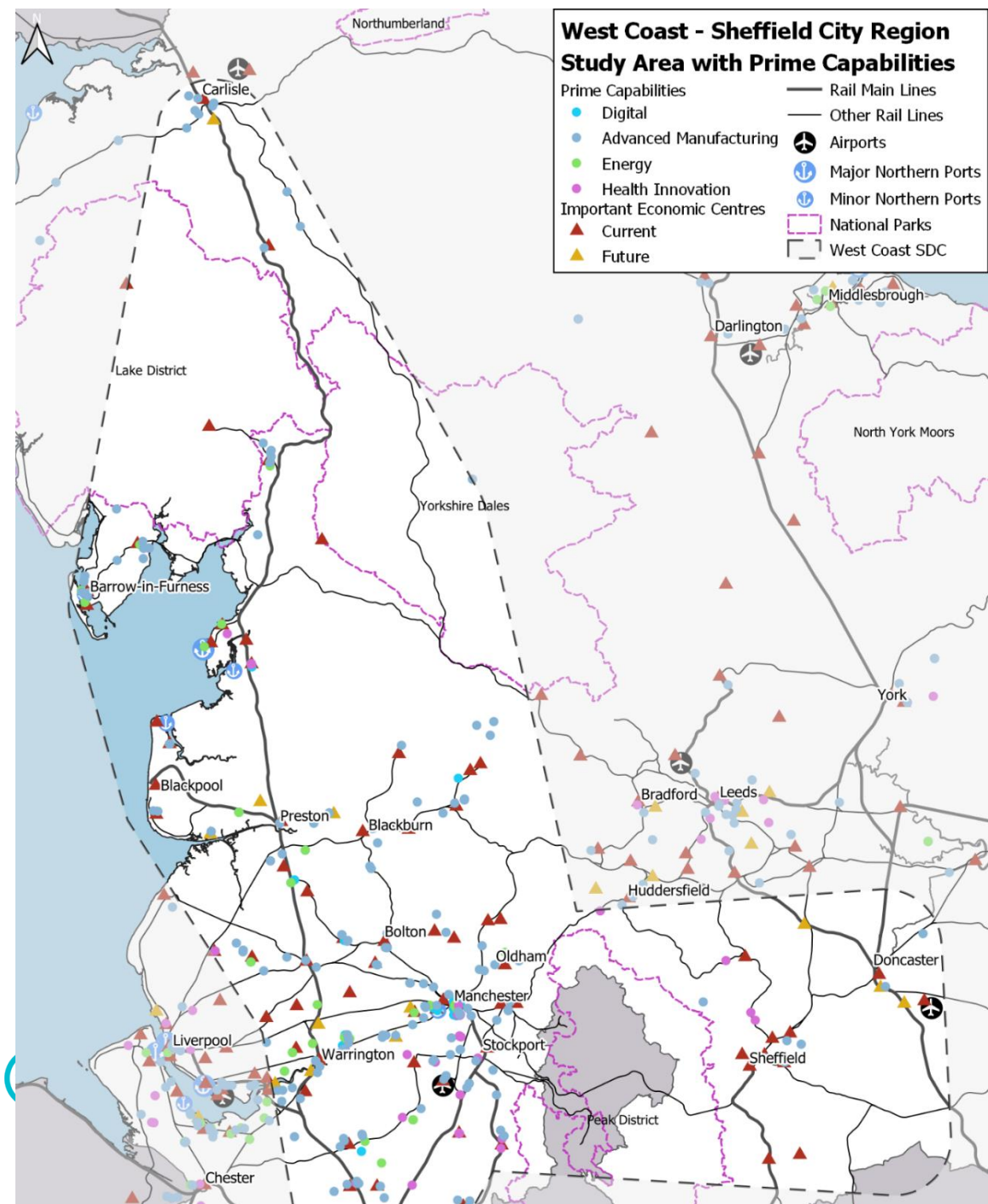
- 3.8 The SDC corridors and the STP stem from the NPIER work (June 2016) done to capture the benefits of a transformed North of England. The projections presented below comparing the 'Business as Usual' and 'transformational' scenarios represent a sustained better long-term performance for the North than has been seen in any period in the last four decades. They include a period in which the North's growth is projected to exceed that of the UK as a whole, as the benefits of the improvements in the various drivers of productivity and output growth, including transport connectivity, allow some degree of closing of the productivity gap. The projections imply a substantial restructuring of the North's economy.
- 3.9 This West Coast - Sheffield City Region rail-modal corridor looks to strengthen and complement existing highway network whilst examining transformational requirements to better connect the significant economic developments in this corridor.

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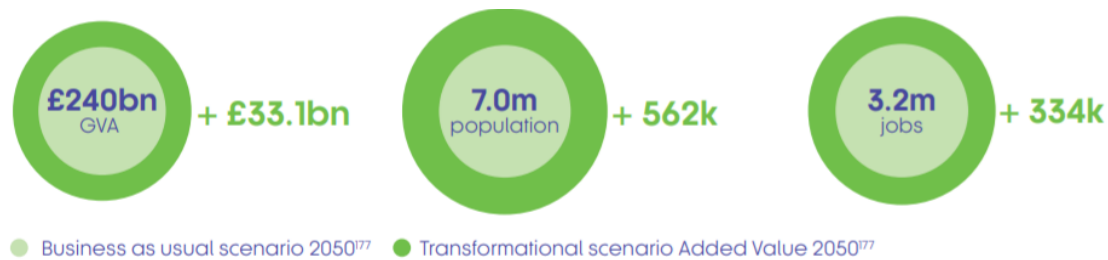
<sup>33</sup> The prime and enabling capabilities were identified in the Northern Powerhouse Independent Economic Review (2016). They have been identified as differentiated and distinctive at a Pan-Northern level, highly productive and able to compete at national and international scales. Prime and enabling capabilities are as follows: Advanced Manufacturing, Energy, Health Innovation, Digital, Financial and Professional Services, Logistics, and Education (primarily Higher Education)

From a rail perspective, these developments include the major ports of Heysham, Workington, Barrow and airports including Manchester, Blackpool (non-commercial), Carlisle, major rail hubs of Crewe, Manchester, Preston and strategic rail freight interchanges and intermodal terminals.

**Figure 3-1: Prime Capabilities in West Coast - Sheffield City Region SDC**







3.10 The IER<sup>34</sup> identified four areas where the North is highly skilled and globally competitive. These are called 'prime capabilities' - promoting, growing and connecting the North's prime capabilities could result in higher productivity:

- Advanced manufacturing – capitalising on the North's industrial heritage and strengths in advanced materials. Manufacturing was worth £46bn in the North in 2014, over a quarter of the UK's total manufacturing output.
- Health innovation - pioneering clinical research and trials particularly in life sciences, cancer and ageing, pharmaceuticals, research and development. The North exported £7.3 billion worth of pharmaceutical products in 2015, accounting for 45% of all medicinal exports from UK.
- Energy - new technologies for energy security, production, distribution, storage, carbon capture, decommissioning and grid management. 31% of the UK's total renewable electricity was generated in the North in 2015.
- Digital - linking digital capabilities such as cognitive computation, simulation/modelling, financial technology, cyber security, high performance computing, data analytics (big data), and strengths in media. The North is home to seven of the UK's 27 key tech clusters.

3.11 The prime capabilities are supported by three 'enabling capabilities':

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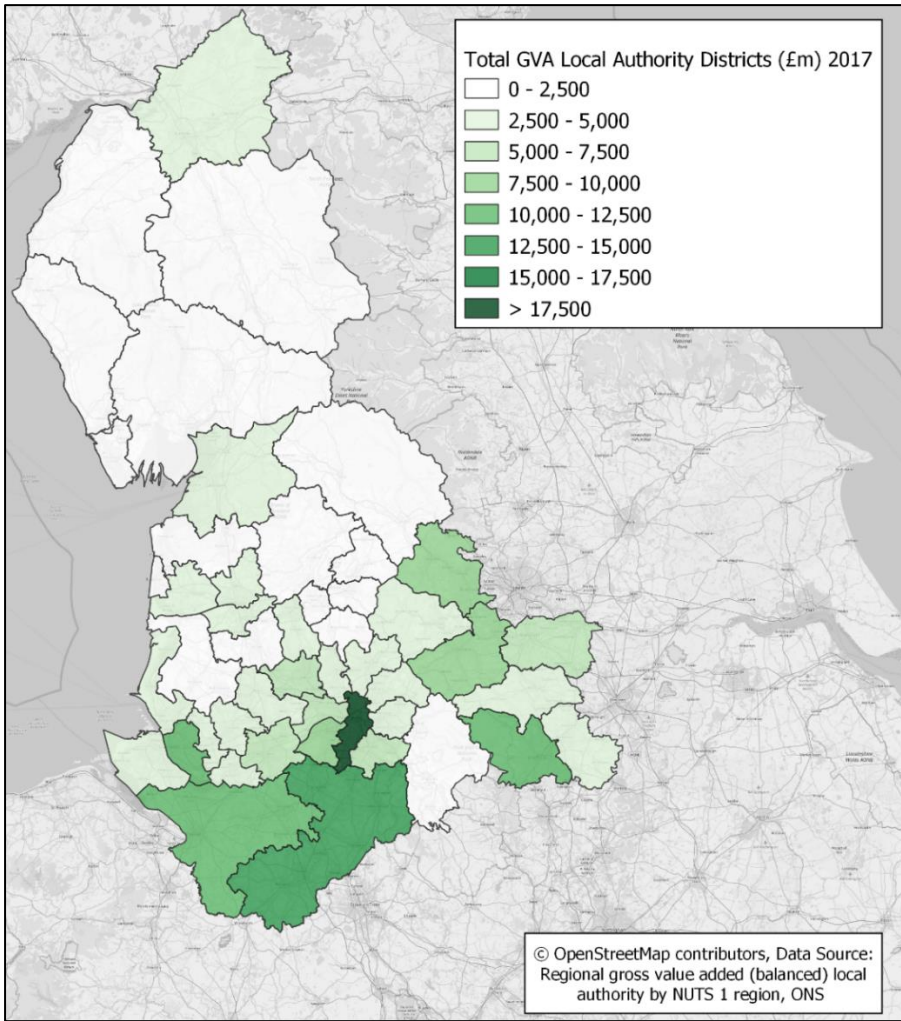
<sup>34</sup> The prime and enabling capabilities were identified in the Northern Powerhouse Independent Economic Review (2016). They have been identified as differentiated and distinctive at a Pan-Northern level, highly productive and able to compete at national and international scales. Prime and enabling capabilities are as follows: Advanced Manufacturing, Energy, Health Innovation, Digital, Financial and Professional Services, Logistics, and Education (primarily Higher Education)

- Education (particularly higher education providing research capability and technical expertise for supplying skilled labour and export strengths);
- Financial & Professional Services (key business, legal, insurance and financial services); and
- Logistics.

### **GVA – The Performance Gap**

- 3.12 The IER demonstrated that there is a gap in the North's prosperity and productivity (that is, a performance 'gap', measured by GVA per capita) that is persistent and entrenched, being consistently 25% below the rest of England average and around 10-15% below the average when London is excluded. Most recent data reveal that gap has widened further, with GVA per person now 29% below England's average. Figure 3-3 displays the relative performance of the major centres of the North of England with other parts of the UK.
- 3.13 Figure 3-2 below highlights the current difference in GVA for the Northern region. Along the Western Coast, the whole of Cumbria area has the lowest GVA compared to other areas within the West Coast – Sheffield City Region SDC such as areas to the South of Manchester (it is to be noted that GVA is only one of the many measures of growth and productivity). Although this will include rural areas such as the Lake District, there are key employers within this region such as Sellafield and BAE in Barrow-in-Furness. These reflect the significant energy & manufacturing strengths within this county which has the potential to provide a strong foundation for further growth.

Figure 3-2: GVA by local authority districts in the West Coast– Sheffield City Region



### **Employment Rate – The Employment and Skills Gap**

- 3.14 The consequence of this long-term imbalance is that when compared to the rest of the country, London and the South East have become a magnet for investment, business and skilled workers. Meanwhile much of the rest of the country (including the North) lags behind, with the former industrial powerhouses of the North among the worst performers. With a higher share of people with lower skills (a problem which has worsened in the post-recession period), the North has suffered from a range of inter-related issues which can also be used to indicate the significance of the performance gap in the North.
- 3.15 While the employment gap is likely to be the result of large numbers of people becoming detached from the labour market as they are not able to find the right job opportunities for them<sup>35</sup>, the skills gap is likely to be the outcome of both demand and supply dimensions. From a demand perspective, low educational attainment (especially among younger cohorts) and low employment rates are the key factors contributing to a limited pool of talent that employers can access. From a supply perspective, limited job prospects and an insufficiently dynamic economy to attract and retain higher-skilled workers are critical aspects that influence the attraction and retention of talent.
- 3.16 This is reflected in the proportion of working age population with high levels of qualifications, which is below the UK average in Yorkshire and the Humber, the North West, the North East and significantly below London, the South East and Scotland. All these factors play a key role in the development of the labour market<sup>36</sup>. Figure 3-3 and Figure 3-4 show the relative productivity in the North and the proportion of population with high levels of qualifications.

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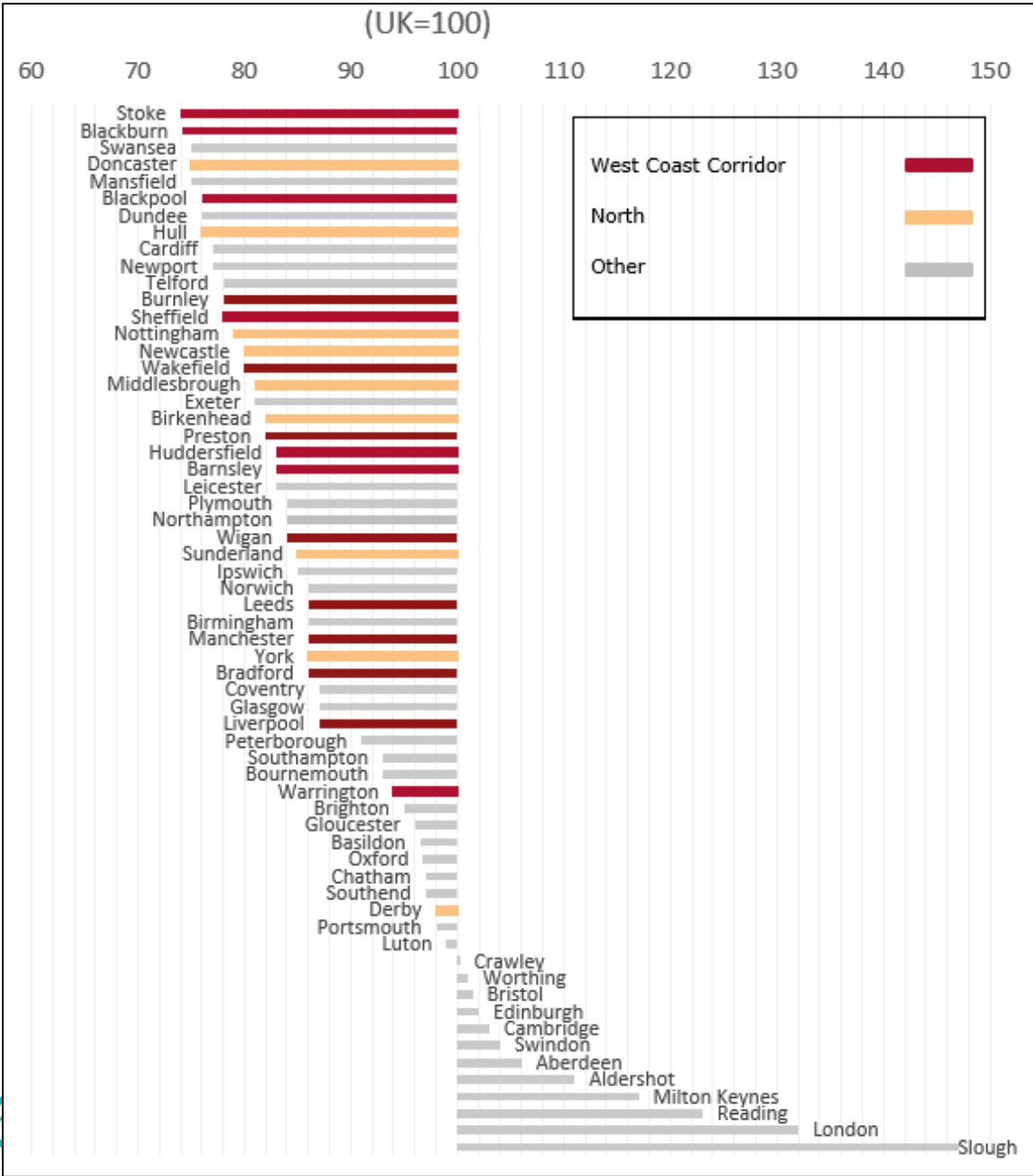
<sup>35</sup> Transport for the North, the Northern Powerhouse Economic Review (2016)

<sup>36</sup> Transport for the North, the Northern Powerhouse Economic Review (2016)

**Figure 3-3: Relative Productivity of major centres within the North of England and other parts of the UK (GVA per head index 2015)<sup>37</sup>**

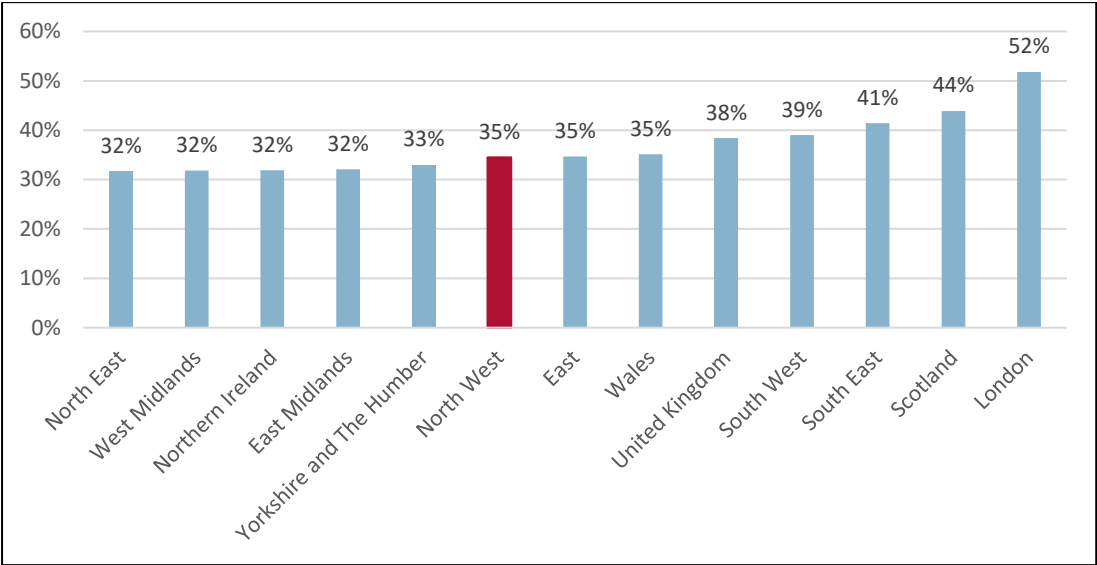
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<sup>37</sup> Source: Author's analysis of Centre for Cities, the role of place in the UK's productivity performance, 2-17, productivity performance based on 2015 ONS data (GVA per head index)





**Figure 3-4: Proportion of working age population with NVQA+ qualifications in 2017<sup>38</sup>**



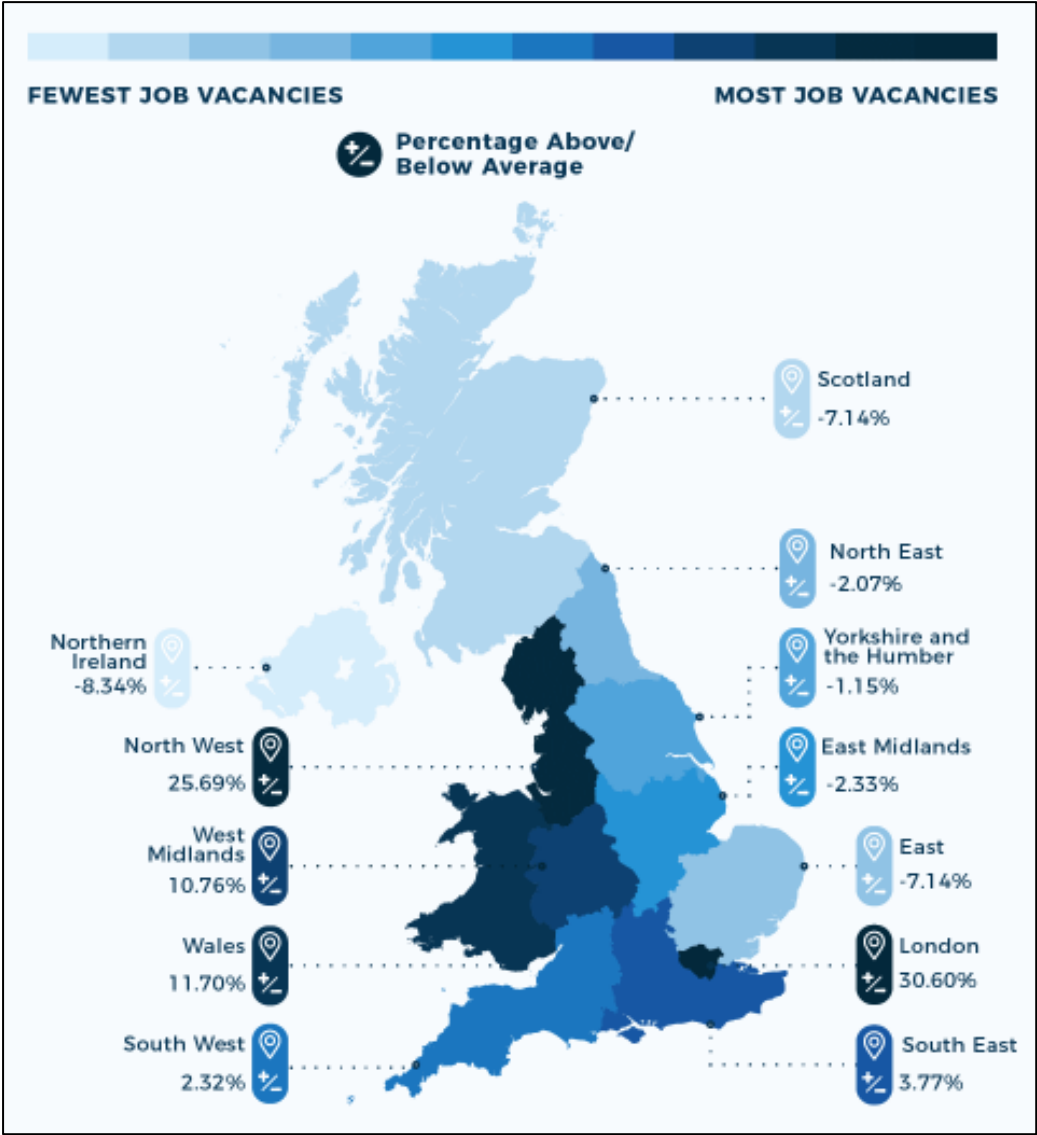
3.17 An analysis of UK skills demand demonstrates that the North West is one of the regions with the highest numbers of job vacancies in the UK, according to analysis from the UK Visa Bureau's 'UK Shortage Occupations List' by Small Business Prices, which is in accordance with the findings of the IER. Skills demand UK by region is illustrated in Figure 3-5 below. The North West has particularly high demand for financial sector jobs, directors and CEOs, nurses, social workers, mechanical engineers and welding professionals. This suggests that improving access to jobs from areas with fewer vacancies (such as Yorkshire and the Humber) and attracting talent are key priority areas to improve the functioning of labour markets across the North.

<sup>38</sup> Annual Population Survey (December 2017 data)

**Figure 3-5: Skills demand UK by region<sup>39</sup>**

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<sup>39</sup> Source: <http://smallbusinessprices.co.uk/uk-skills-shortages/>



### **Labour Productivity – Investing in Northern Powerhouse Cluster Industries**

- 3.18 The four “Prime” capabilities and three “Enabling” capabilities mentioned above, collectively represent approximately 30% of all jobs in the North and over 35% of GVA.
- 3.19 In a ‘transformed future’ scenario, the Northern economy would become more productive, partly through increasing the skills of its workforce and lowering levels of economic inactivity - both these factors are associated with an increased propensity to travel. All other things being equal, increased productivity would therefore be expected to lead to marked changes in both the travel patterns of individuals and aggregate patterns across the entire North.
- 3.20 Changes in investment or economic agglomeration could be expected to lead to greater employment within higher-level occupations and higher incomes, and potentially different lifestyles, leading to further changes in travel patterns. Currently, poor and inconsistent transport links are limiting agglomeration and constraining growth.
- 3.21 The NPIER suggests that promoting, growing and connecting the sectors of the economy where the North is internationally-competitive (the “Prime capabilities” and their supporting “enabling” capabilities) would help in addressing this performance gap. Workers in these sectors have a higher propensity to travel, particularly by rail.
- 3.22 Transport connectivity is an important enabler of growth in these and other sectors because:
- Investment in skills is more likely to occur where there is access to well-paid jobs and training
  - Foreign investors are more likely to be attracted to locations that are well connected to global markets and which have access to a well-qualified workforce
  - Firms are more likely to specialise and innovate in areas with deep and extensive labour markets
  - Firms can start to cluster and agglomerate more effectively
- 3.23 Investment in transport therefore benefits both users and the economy as a whole - supporting and enabling growth in the key growth sectors and their high value jobs by bringing towns and cities and economic centres across the North closer together, creating the agglomeration benefits of a much larger, single economy.

## Transport's influence on economic growth

- 3.24 Better connections at a Pan-Northern level, particularly connections between the North's existing and future economic assets, will help provide the conditions in which jobs can be created and growth achieved. To realise the benefits of agglomeration, the North requires its networks of railways, roads and also the main inland waterways, to provide effective, resilient and reliable connections. These connections should meet standards of journey time and frequency set by the North. Sufficient capacity will also be required to accommodate the increased passenger and freight travel demand that growth will bring.
- 3.25 The work undertaken by the NPIER highlighted that transport connectivity is a key enabler of economic growth. This is true for the North of England, as research shows that the key growth sectors cluster in its city centres. Better transport connectivity is important because:
- Investment in skills is more likely to occur where there is access to well-paid jobs and training
  - Foreign investors are more likely to be attracted to locations that are well connected to global markets and which have access to a well-qualified workforce
  - Firms are more likely to specialise and innovate in areas with deep and extensive labour markets
  - Firms can start to cluster and agglomerate more effectively
- 3.26 Overall, the impacts of transport are wide-ranging and can be grouped into three types: user benefits, productivity, and investment and employment impacts<sup>40</sup>. A logic chain showing how investment in transport infrastructure could flow through to wider economic impacts in the North is shown as Figure 3-6.
- 3.27 Investment in transport benefits both rail passengers and all road users, as well as industry. The forecast growth within the NPIER shows an increase in road and rail usage. This also links to the road and rail freight moved within and out of the North. The key increases in freight flows are currently north - south routes. Additional investment in east - west connectivity would bring opportunities for more people and goods to be moved in those directions and growth in traffic through Northern ports which could see growth in containers and construction goods being moved around the North

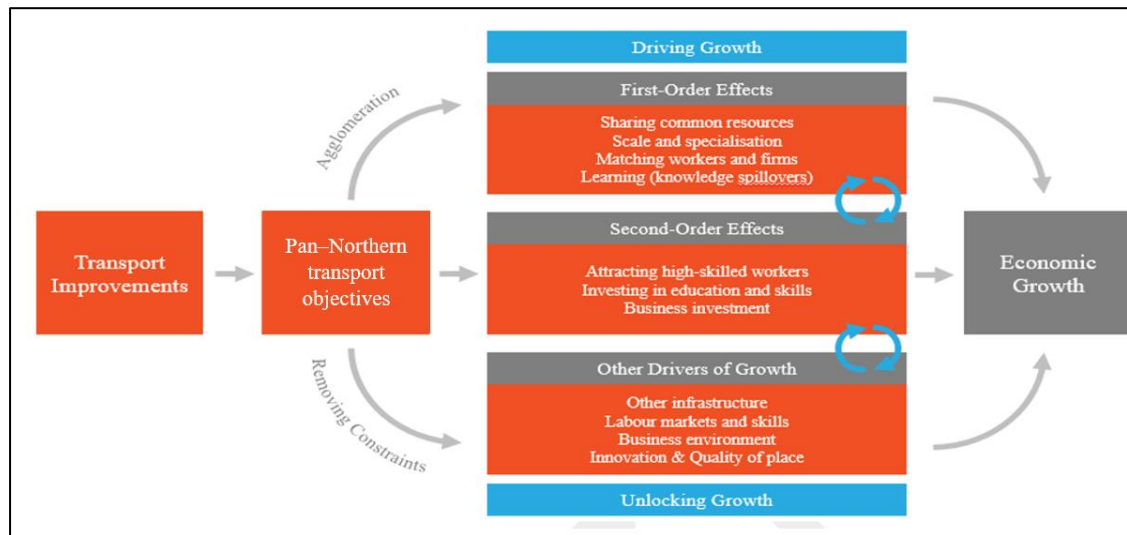
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<sup>40</sup> Anthony J. Venables et al., *Transport investment and economic performance: Implications for project appraisal* (2014) [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/386126/TIEP\\_Report.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/386126/TIEP_Report.pdf)

generating warehousing and processing capability. Close working with the private sector and our partners will be required to see progress made.

- 3.28 Improving transport connectivity in the North of England (both between and within cities) and to/from North Wales will support and enable growth in the key growth sectors and their high value jobs by bringing towns, cities and economic centres across the North closer together, creating the agglomeration benefits of a much larger, single economy.

**Figure 3-6: Transport interventions and economic performance**



Source: Adapted from frontier economics: Assessing the productivity benefits of improving inter-city connectivity in Northern England (2016), Figure 2.

- 3.29 Markedly improved Pan-Northern connectivity is required to facilitate the development of bigger and more agglomerated labour markets across the North. Closing the transport investment gap will help to address connectivity issues, especially between cities.



### **Future demand for personal travel under a transformed North**

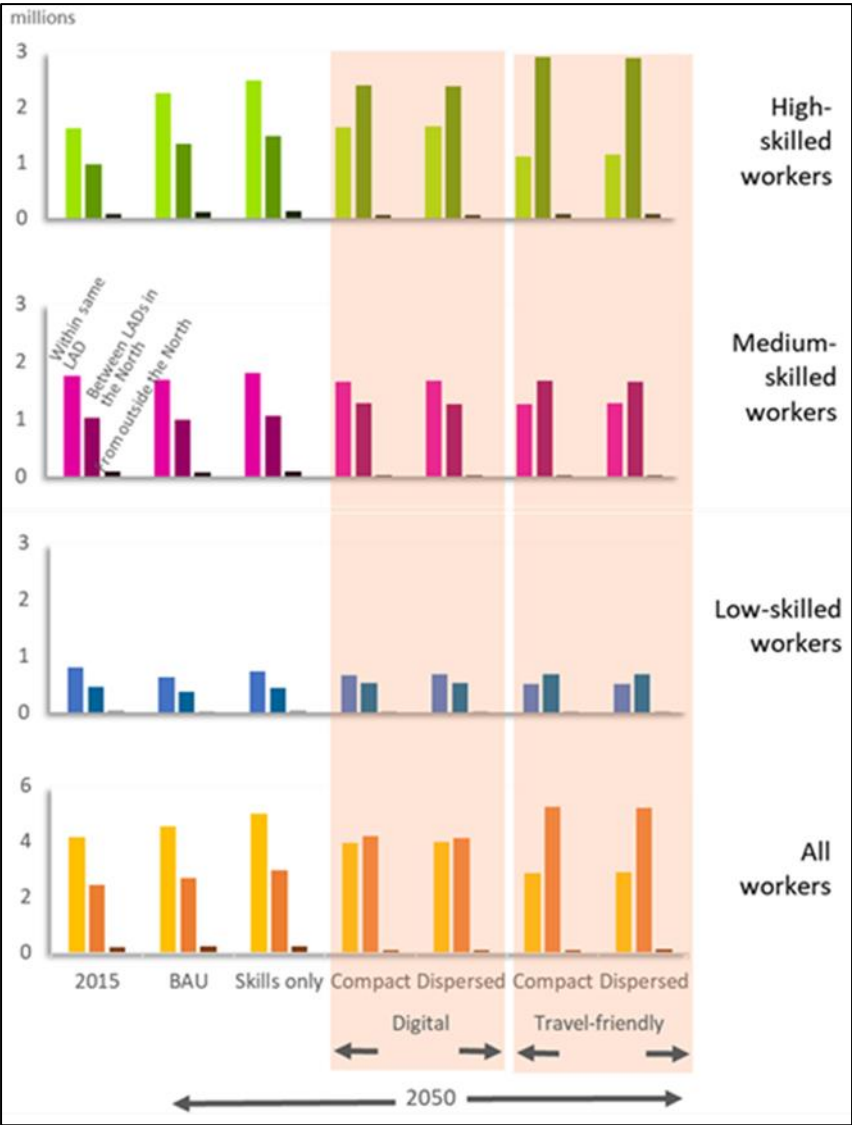
- 3.30 Transformational economic growth in the North is expected to lead to far-reaching changes in transport demand and travel patterns compared to today. There is potential for significant changes in transport accessibility to transform the economic geography of the North. Improved transport infrastructure will stimulate new travel patterns, as individuals adapt their behaviour to take advantage of enhanced connectivity to access new employment opportunities.
- 3.31 To reflect uncertainty regarding key factors affecting travel demand, Transport for the North has developed four future scenarios representing the potential variation in travel markets in the North by 2050, which are represented in Figure 3-7. The assumptions have been grouped so that each scenario represents a coherent and plausible future. No one scenario is more likely than another – but taken together they represent the likely range of outcomes in travel demand in the North.
- 3.32 Total demand for rail travel is expected to be up to four times higher than today. This would mean an increase in the current total of 178 million trips in the North to around 760 million trips by 2050. In a transformed North, total demand for road travel is forecast to increase by up to 54% by 2050. This would mean an increase in the current total of 126 billion vehicle km travelled in the North to 193 billion vehicle km by 2050.
- 3.33 As described previously, analysis of the North's labour markets indicates that the majority (61%) of the North's workers lived and worked in the same local authority district in 2015. Under the business as usual scenario, this proportion is not expected to change in to the future. However, in the transformational scenario, the proportion of workers taking employment outside of their home district is expected to markedly increase by 2050. The greatest change is expected for high-skilled occupations, who already have a higher propensity to travel further for work.

Figure 3-7: Initial Northern Transport Demand Model Foresighting Scenarios



Figure 3-8 below shows the commuting patterns in terms of flows of workers under the four different scenarios. It shows that in all scenarios, workers are more likely to commute across local authority district boundaries, especially among high-skilled workers and in the two Travel Friendly scenarios.

**Figure 3-8: Commuting patterns under a transformed North**



- 3.34 Even in the two Digital scenarios, the number of workers commuting across local authority district boundaries in the North is some 70% higher than in 2015, whilst the number of actual workers is only some 20% higher. In the two Travel Friendly scenarios, it is more than double the number in 2015.

### **Transport challenges and economic opportunities**

- 3.35 The fundamental challenge for the North's economy is to improve the economic interaction between the key economic clusters and assets of the North to improve the sharing of knowledge, supply chains, resources, and innovation to drive agglomeration benefits and productivity. Physically connecting the North's towns, cities, and international gateways will facilitate this. It can also create agglomeration economies centred on areas of commercial and industrial specialisation.
- 3.36 Better transport connectivity increases the physical proximity of firms, workers and consumers and concentrates economic activity into clusters. Improving transport connections between the North's cities, towns, economic centres, infrastructure and assets allows for greater opportunities. This will be supported by a strong logistics industry.
- 3.37 The potential economic links between the areas of Lancashire, Cumbria and the Sheffield City regions are not served well by the existing rail network. This corridor needs to complement other road improvement investments being pursued in the North West and across the Pennines. There is a growing demand for transport connectivity to strengthen the collaboration between the various advanced manufacturing, health technology, digital businesses and research centres in the Sheffield City Region and those in Lancashire and Cumbria which is currently not efficient due to the interrupted rail journeys between these two regions. This is due to the capacity constraints along the rail corridors in Central Manchester which leads to broken up and constrained services between the regions.
- 3.38 There is also strong demand for growth in this corridor through to Scotland, for passengers and freight. On the line between Blackpool North, Preston and Manchester, in addition to improvements as part of the North West Electrification Programme, the Reference Case includes an increase in service to a total of six trains per hour between Manchester and Preston.
- 3.39 Whilst the WCML predominantly is the key corridor connecting long distance passenger connections, it also performs a number of other functions as one of the busiest mixed-traffic routes across the national rail network. In addition to passenger services on the route, it carries a large proportion of rail freight connecting Scotland and England. The WCML connects a number of other routes from its spine, with a number of capacity constraints arising from competing functions.



- 3.40 Frequency of through services across Manchester from the north to Sheffield City Region are low, with capacity and reliability issues prevalent, as well as poor journey times. Through services from Preston across Manchester are to limited destinations (Manchester Airport and Hazel Grove), therefore travel through to Sheffield involves a change of trains. In addition, locations north-west of Manchester are poorly connected to Sheffield City Region.
- 3.41 The West Coast Main Line has capacity constraints both north and south of Preston. This issue extends to Cumbria, with speed and capacity constraints.
- 3.42 Journey time and frequency improvements are also an issue on the South Fylde line as well as the Windermere branch of the Lakes line.
- 3.43 Current challenges on the Hope Valley line include the mix of fast and stopping passenger services and freight services with significant freight flows. Proposals exist to increase capacity and resilience of this route through potential new or re-opened lines, and Sheffield City Region are studying possible new infrastructure to enable alternative routings for services between Sheffield and Lancashire/Cumbria avoiding Manchester, including via the Calder Valley Line.
- 3.44 Integration with the current proposals of Northern Powerhouse Rail and HS2 is critical with investment required at rail stations including Preston, Lancaster, Oxenholme, Penrith and Carlisle to increase capacity, promote economic growth, and make the most of the opportunities provided by HS2. A holistic approach needs to be undertaken to maximise the opportunity for high speed rail being able to integrate across the wider network (existing services on local lines as well as the mainlines) and potentially bring together both track and train improvements.

## **Passenger Rail's Role in the North**

### **Connecting People: Accessibility for Residents**

#### **Current Scenario**

- 3.45 The North currently has a commuting share for rail 3.4%, defined by origin and destinations of residence and workplace. Whilst this is lower compared with the rest of England outside of London and the South East. There is significant scope for

rail to increase its share of the market as the economy grows. This is already occurring within urban regions of the North West, especially Manchester which experienced a 7% increase in AM peak arrivals between 2015-2017<sup>41</sup>.

- 3.46 On average, those that commute by train travel longer distances than that of other commuting modes, largely due to trains having the capacity to travel at faster speeds over longer distances. This is exemplified by the proportion of origin specific train users within Greater Manchester commuting to Manchester city centre for work, with higher proportions achieved from origins located further away from the city centre such as Bolton (31%) and Wigan (22%) than that of closer origins such as Tameside (11%) and Stockport (16%)<sup>42</sup>. As such, townships located far from urban centres and with poor access to employment opportunities could utilise and greatly benefit from improved rail accessibility.
- 3.47 The above benefits can be identified within Scotland's new Borders Railway, which commenced operations in 2015 and links towns in the Scottish Border region with Edinburgh. A survey conducted by Transport Scotland found that 64% of respondents that regularly commute on the new line had previously drove to their end destination, now accounting for 35,800 car trips removed from roads<sup>43</sup>. Furthermore, 71% of tourists had quoted that the new rail line was an influential factor in choosing to visit whilst 29% of people who had recently moved to the area stated that they would not have made the move had the railway not been present. 52% of respondents who had moved employment recently indicated that the railway was an influential factor in making their decision. Therefore, rail accessibility to the region has significantly changed commuting patterns and positively impacted various socio-economic characteristics of the area's townships.
- 3.48 The North West has seen some recent advancements in improved rail accessibility, most notably with the re-opening of Halton Curve in May 2019 which now sees train services run directly between North Wales and Liverpool for the first time in 40 years. The re-opened rail link is predicted to bring about 250,000 new rail trips annually between the two regions and anticipates removing 170,000 road journeys along the M56 and A55.

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<sup>41</sup> [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/633285/rail-passenger-crowding-2016.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/633285/rail-passenger-crowding-2016.pdf)

<sup>42</sup> <https://www.nomisweb.co.uk/census/2011/WU03EW/chart/1132462148>

<sup>43</sup> <https://www.transport.gov.scot/media/41659/sct02189915561.pdf>

- 3.49 The Furness and then Cumbrian Coast Line links the WCML at Carnforth and Carlisle via communities along the west Cumbrian coastline. Infrastructure characteristics currently serve to limit journey times, connectivity and capacity along the corridor. Improvements to the Lakes Line are important to support the visitor economy including providing access international visitors via Manchester Airport.
- 3.50 There is currently a disparity between north-south and east-west connectivity in the North of England. Those services which utilise the West Coast Main Line for some or all of their journey tend to be significantly quicker than those operating across east-west corridors such as the Hope Valley.
- 3.51 North-south connectivity, particularly to and from London, has been improved through sustained periods of investment to the West Coast Main Line, the effects of which are illustrated in Table 3-1: below. The average journey times in the table relate to non-overtaken trains.

**Table 3-1: Comparison of frequencies and journey times between Northern centres and London in 1997 and 2017<sup>44</sup>**

	1997		2017	
	Frequency	Avg Journey Time	Frequency	Avg Journey Time
Liverpool	1	02:45	1	02:12
Manchester	1	02:30	3	02:09
Preston	1	02:37	2*	02:15
Carlisle	0.5	04:00	2*	03:22
Sheffield	1	02:22	2	02:05
*includes overtaken trains				

<sup>44</sup> From Table 3.2 of the Draft Long Term Rail Strategy, TfN

Source: National Rail Enquiries

- 3.52 However, despite these improvements there are connectivity gaps between the North and some other areas of the UK. There are also travel time differences between regional and long distance train services throughout the North West. A regional train service between Carlisle and Manchester takes a similar amount of time as a long distance service from Manchester to London, despite the latter being an additional 100km in travel distance. This can be attributed to London bound trains from Manchester, operated by Virgin Trains, calling at fewer stations and utilising faster rolling stock that can achieve 125mph and is capable of tilting to reduce speed reductions on curves. Carlisle to Manchester services, operated by Transpenine Express, tend to call at more stations and utilise rolling stock that have a maximum limit of 110 mph. As such, residents of Carlisle and wider Cumbria fall within the same rail accessibility pool for Manchester as residents of London and surrounding southern regions.

### Future Opportunities

- 3.53 Rail can play a critical role in matching skilled workers with appropriate employment as a result of its specific characteristics – notably the capability of transporting large numbers of workers into town and city centre locations without being subject to highway congestion and its associated impacts on journey time, the environment and quality of life.
- 3.54 Improved accessibility to the North West's railway network would enhance the free-flowing movement of people from their place of residence to work or other destinations of leisure, educational or business purposes. Better rail links for the commuter could reduce congestion on roads, provide access to a wider pool of employment opportunities and incentivise more investment within their place of residence.
- 3.55 A rising population will require more housing capacity. The location of future housing developments will have a major impact on future travel patterns and transport demand. If housing development is dispersed further from economic centres, increased commuting demand and longer distance trips will become more prevalent. To help address the capacity and demand for long distance trips, HS2 will help.
- 3.56 HS2 Phases 1 and 2a will provide a further step-change in north-south connectivity once completed in 2026/27. The scheme will deliver a dedicated high-speed railway line between London and Crewe, with high speed services running on the 'classic' rail network to Liverpool, Manchester and further north on the West Coast Main Line. HS2 Phases 1 and 2a will significantly reduce journey times and increase capacity between cities in the North West of England, Birmingham and

London. Phases 1 and 2a will reduce the journey times between Manchester Piccadilly and London Euston by 37 minutes, Liverpool and London Euston by 40 minutes and between Crewe and London Euston by 35 minutes.

- 3.57 Current proposals for Phase 2b of HS2, intended for completion in 2033, will extend the dedicated high-speed line from Crewe to Manchester via Manchester Airport as well as to a junction on the West Coast Main Line at Golborne, where HS2 services to Wigan and stations further north would join the 'conventional' network.
- 3.58 For these longer-distance journeys, rail will have key journey time advantages relative to road travel, as well enabling direct access to central locations. In some cases, particularly to/from London, connectivity is currently strong, and will undergo a further step-change improvement with the introduction of HS2. However, certain centres are poorly connected to the North currently, especially those remote from the main lines and future high-speed routes. Unless weaknesses in the wider network are addressed, this will serve to erode journey time advantages and weaken the attractiveness of rail.

### **Connecting People: Connecting Business, Economic Assets and Clusters**

#### **Current Scenario**

- 3.59 Improved connectivity to Important Economic Centres will assist with increased engagement in the labour market, access to skills and improved interaction between centres. A relatively small proportion of the North's population commutes by rail. This is due to factors such as the cost, convenience and perception of the rail network, as well as capacity constraints on both intra and inter-urban rail services. Many of the current journeys between Northern economic assets and clusters are slow and infrequent, both in absolute terms and compared with journeys to and from London.
- 3.60 The North West has an employment rate of 74.3%, slightly lower than the national average of 75.6%<sup>45</sup>. The limited accessibility of labour markets within the North West, especially for non-urban areas, is a contributing factor for workers having reduced job opportunities. This is holding back wages and productivity and makes the North West a less attractive place for businesses.

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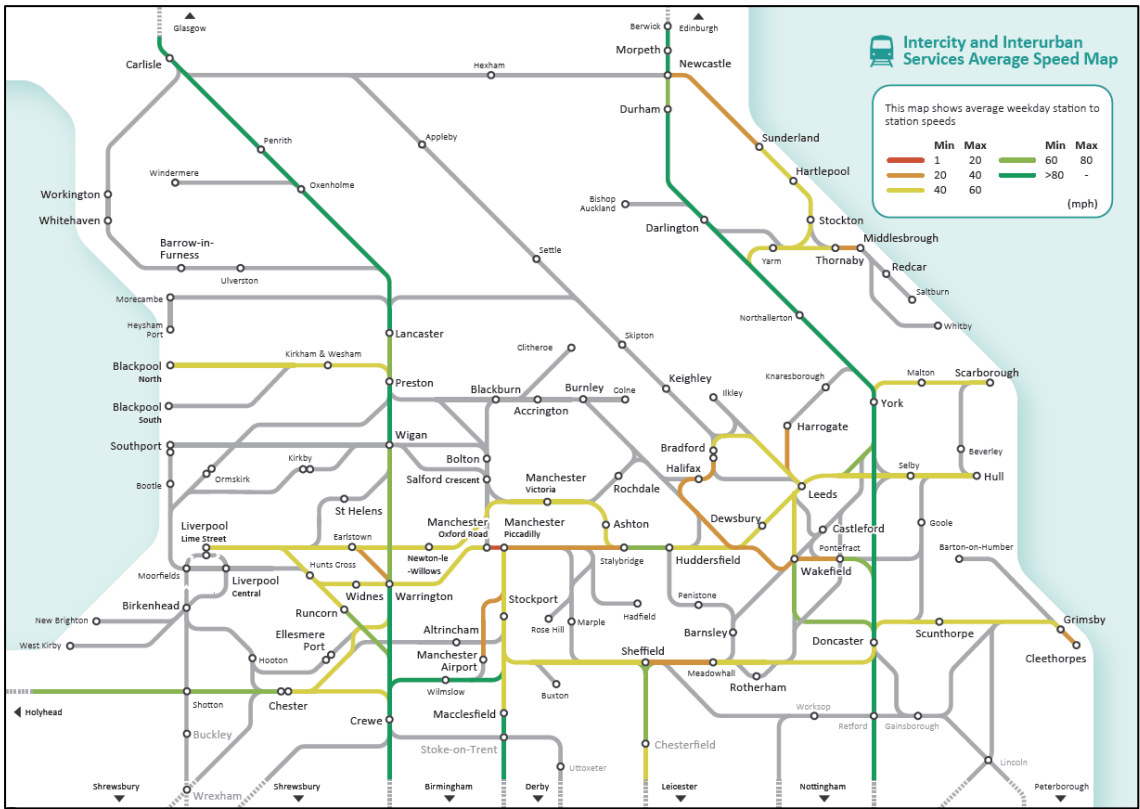
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<https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/bulletins/regionallabourmarket/august2018>

- 3.61 Average speeds (and by extension journey times) are influenced by a number of factors – including the capabilities of the infrastructure (line speeds, level crossings), rolling stock acceleration and top speed capabilities, stopping patterns and station dwell times. Limitations in any of these influencing factors can serve to increase journey times. Notwithstanding this, the WCML facilitates some of the fastest sections of domestic railway in the UK, with average speeds in excess of 80 mph possible on sustained sections between Wigan and Carlisle.
- 3.62 Connectivity between the North's centres, in terms of passenger service frequencies and journey times, is too often poor, extending the perceived distance between centres and acting as a barrier to travel. Issues such as overcrowding and poor on-board facilities can make rail travel unproductive, effectively removing one of rail's key advantages over other modes.



Figure 3-9: Average speeds of selected long distance/inter-urban services

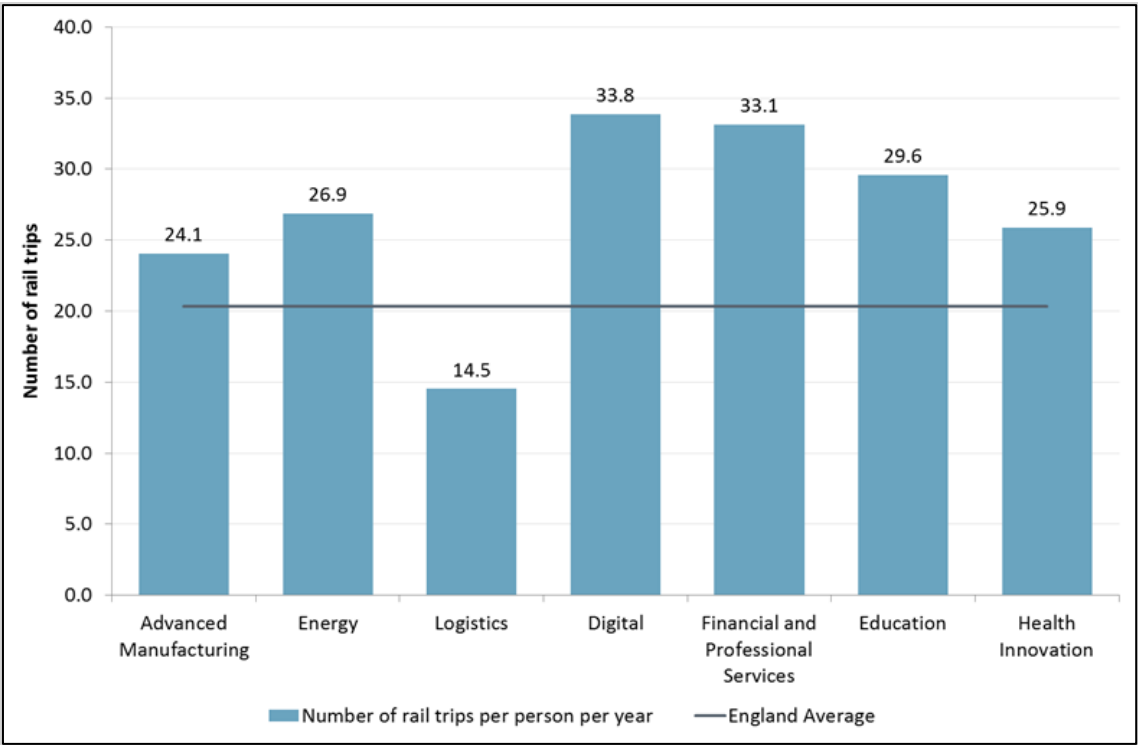


Future Opportunities

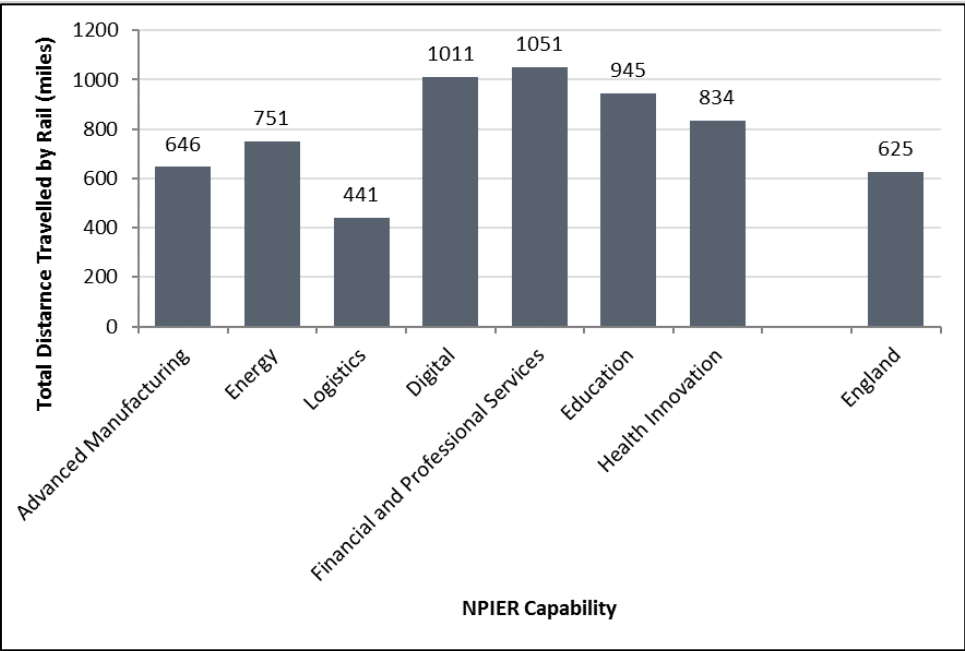
3.63 A strengthened and more prosperous Northern economy will result in a higher number of employment opportunities, many of which will be located in urban centres. A larger jobs market in key skilled sectors will in turn increase demand for education and skills training, with many centres of further education located in or close to town and city centres.

- 3.64 For businesses, improved regional rail accessibility could provide greater access to talent, increased productivity derived from knowledge agglomeration and heightened product output derived from rail.
- 3.65 Transformational growth projections forecast material increases in highway and rail trips. Underlying these growth forecasts are assumed supporting improvements in the northern transport network. Without such intervention, the forecast growth will not occur; poor road and rail connectivity between economic assets and clusters in the North is affecting the capability of these clusters expanding and preventing the growth in supply chains. This is also true for a number of economic assets and clusters outside the urban cores.
- 3.66 Growth in knowledge-intensive jobs in the North, such as those in the NPIER prime and enabling capabilities, will lead to increased demand for travel:
- Workers within each of the seven capabilities have distinctive travel patterns, in part a result of the different geographies and occupational breakdowns within each capability, but also because of the different mix of people who work in each capability.
  - Since those employed in the four prime and three enabling capabilities are typically more highly skilled, better qualified and in higher occupational groups, they would be expected to have a greater propensity to travel, especially by rail. This is illustrated in Figure 3-10, which shows that within six of the seven prime and enabling capabilities, the number of annual rail trips exceeds the English average. Each worker within Finance and Professional Services, for example, makes over 50% more rail trips than the national (England) average.
  - Similar trends can be observed in terms of total distance travelled. Workers within all IER capabilities travel greater distances than the England average, as illustrated in Figure 3-11. Those in the digital, financial and professional and educational capabilities travel the greatest distances. Notably, workers within Finance and Professional Services travel 65% further by rail than the England average.

Figure 3-10: Number of rail trips annually (all journey purposes), average for NPIER prime and enabling capabilities



**Figure 3-11: Weighted average total distance travelled by rail per person per year by NPIER Capability in England<sup>46</sup>**



Source: NPR Strategic Case (SDG)

3.67 The IER states that “enhanced pan-Northern city-centre to city-centre rail links, east-west and north-south, are needed to facilitate the bigger labour markets that support the success of knowledge-based firms – and, to be effective, they must be integrated with city region local public transport networks, which are joined-up with wider networks, involving frequent rail services, light rail and bus, all supported by smart, multi-modal ticketing.

<sup>46</sup> Source: Analysis of National Travel Survey (2013) and Business Register and Employment Survey (2015) data

- 3.68 For employment in city centres to grow to the maximum extent and the full scale of agglomeration benefits realised, it will need to be accommodated by enhanced public transport connectivity due to space constraints on both inter-city links and within cities at origin and destination points.
- 3.69 The growth of the Northern economy will drive, and will be dependent on, increased business-to-business travel between its economic centres. The rail network will need to enable this travel to be undertaken as quickly and efficiently as possible and must offer a viable and attractive alternative to road-based transportation.
- 3.70 Continuing expansion of planned rail passenger services will reduce the capacity available for rail freight services, particularly through existing pinch points such as around Manchester Piccadilly station. There is a need for high speed passenger services on new routes connecting the key northern cities. The introduction of such new passenger services can potentially have a negative effect on the available capacity for freight services because when not on new passenger-only infrastructure they will run along existing and potentially already busy routes (e.g. The West Coast Main Line). However, if part of the new passenger routes are along new lines, this can provide more capacity for freight on the parallel classic route sections that will have been partially relieved.
- 3.71 As set out in the STP, a step change in the level of rail connectivity between the North's largest cities is required to support opportunities and choices to the next generation of workers and businesses. NPR is being developed within the context of the updated LTRS (Long Term Rail Strategy) which would provide the framework of improved outcomes for which the NPR programme was part of the solution. NPR would support economic transformation in the North by delivering faster and more frequent rail journeys linking the North's largest cities with each other, and to Manchester Airport. It also has potential to provide much improved connectivity for other significant economic centres, and the potential to release capacity on the existing rail network for freight and other local services. NPR will help deliver the integrated Northern labour markets that are necessary to achieve economic transformation, unlock investment potential and create opportunity and new economic choices for millions of people across the North.
- 3.72 NPR is being developed alongside the Long-Term Rail Strategy and is complementary to investment plans for the wider rail network. Integral to the proposal is ensuring that the wider network can also incorporate and realise the associated benefits of NPR
- 3.73 TfN analysis shows that NPR could:
- Increase the population within one hour's rail travel of four of the largest cities from 10,000 today to 1.3 million;

- Change the way labour markets work, where people live and work and how businesses collaborate and will support the North to attract and retain the people and skills it needs. Once the network is delivered, 40% of businesses identified as in the Northern Powerhouse Independent Economic Review prime capabilities would be within 90 minutes rail travel of four or more of the North's largest cities, compared to only 12% today; and
- Be integrated with HS2 to maximise connectivity and demand on the planned new fast north south connections and make greater use of HS2 infrastructure.

## **Connecting Businesses: Freight**

### **Current Scenario**

- 3.74 The GB freight industry processes around a billion tonnes of goods per annum moved between producers (or importers) and consumers, not including the pipelines that carry water, gas, petroleum and chemicals. For around 40% of that tonnage, one end of the supply chain is outside Great Britain. These goods are carried by various combinations of road, rail, sea and air and in many cases involve multiple legs by passing through intermediate distribution centres. When these additional legs are taken into account, a figure of around 1.97 billion tonnes of goods lifted emerges, including both the road and rail legs where there are transfers between modes.
- 3.75 Approximately one third of this activity takes place to, from, within or through the North of England. Northern Ports account for approximately 35% of all GB ports traffic. Of the 2,254 warehouses that exceed 8,000m<sup>2</sup> of floor space and account for most non-bulk freight in Britain, 34% are in Northern England. However, the North's share is not entirely uniform. Only 24% of all container and trailer trade is through Northern Ports because of the dominant position of Dover and the Channel Tunnel for European trade and the three south east container ports of Felixstowe, London and Southampton for deep-sea trades. There is scope for the major Northern ports' share to rise to use the capacity they have available<sup>47</sup>.
- 3.76 Further growth is planned in the long term - the TfN Enhanced Freight and Logistics analysis forecasts over 50% growth in both road and rail freight until 2050, which will play a central role for increasing economic activity and to achieve the GVA growth outlined in the NPIER. Freight and logistics is also seen as a central enabling capability (as defined by NPIER) for the successful economic development of the North. This shows that this is a key sector to consider when developing

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<sup>47</sup> <https://transportforthenorth.com/wp-content/uploads/Freight-Logistics-Enhanced-Analysis-Report.pdf>

options for improving connectivity. In addition, the growth of northern ports will help to alleviate congestion on the wider UK SRN through the re-distribution of sea freight from southern to northern ports and having direct access to the northern SRN.

### Future Opportunities

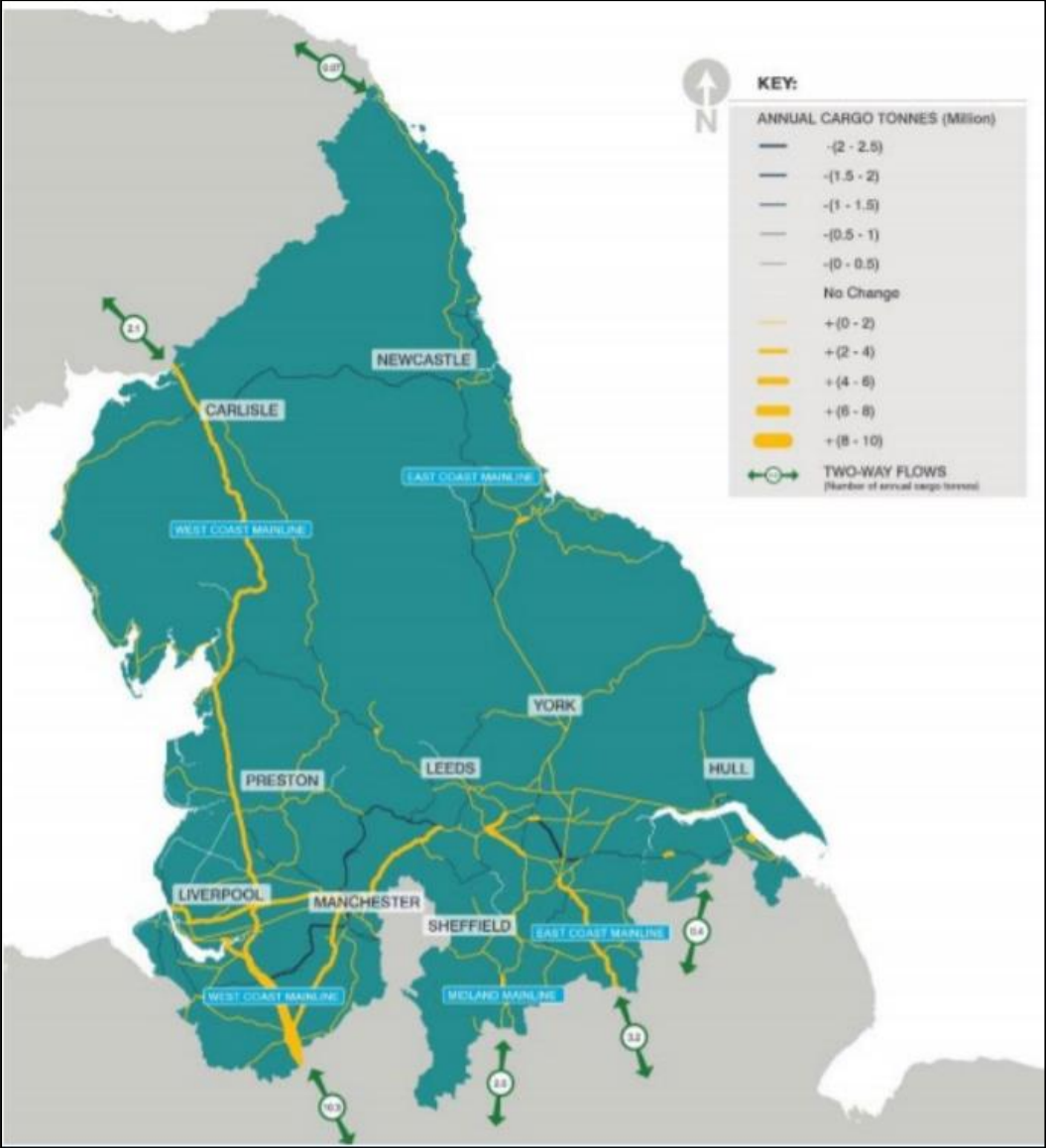
- 3.77 Principal north - south / east - west rail routes are expected to experience grow in demand with passengers and freight because they are direct, and they provide access to key ports and markets. These routes are already lacking sufficient capacity, with conflicts between private passengers and freight movements<sup>48</sup>. Therefore, strategic freight initiatives need to be undertaken to supply this forecasted growth in demand.
- 3.78 The greatest change in rail freight paths expected between today and 2050 within the West Coast – Sheffield City Region SDC is on the West Coast Main Line (WCML), forecast to be the main north - south artery. Growth is also forecast on the links between the WCML and freight centres in the North West. The Crewe - Manchester line and Chat Moss (Liverpool-Manchester) is also a critical route in terms of rail freight movements and their access to the WCML from the Port of Liverpool. Figure 14 summarises the principal changes in forecast freight (cargo tonnes) for rail between 2016 and 2050, with NPIER.
- 3.79 Growth in the freight market, rising labour and fuel costs, and a policy of clustering warehousing around railheads can be expected to approximately double national rail freight volumes by 2050, with an increasing proportion being north-south main line routes as rail freight's competitiveness improves on flows in excess of 2-300 kms.

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<sup>48</sup> <https://transportforthenorth.com/wp-content/uploads/Freight-Logistics-Enhanced-Analysis-Report.pdf>



**Figure 3-12: Annual cargo flows in the North by Rail**



3.80 The MDST report has considered a number of interventions that could re-route rail freight onto less congested routes and to alternative terminals. The most important element of this strategy is to reduce the number of freight trains running through the middle of Manchester to a minimum.

3.81 Some of the re-routing opportunities considered by MDST are as follows:

- Carlisle to Farrington Junction: via Hellifield instead of the West Coast Main Line (WCML), mainly benefitting traffic to and from Scotland.
- Mirfield to the WCML: via Hebden Bridge, Blackburn and Farrington junction instead of via Manchester, mainly benefitting east coast ports.
- Peak District Quarries (Buxton area) to Midland Main Line (South of Chesterfield) via a reinstated Matlock-Buxton route, benefitting the Peak District quarries.

### **Connecting People: Accessibility for visitors**

#### **Current Scenario**

3.82 The North West directly employs over 176,000 people within its tourism industry<sup>49</sup>. Tourism within the North West is valued at £9.5 billion, the 4th largest in the UK behind London, the South East and the South West. Key visitor hotspots include Blackpool, Chester, Manchester, Liverpool, Sheffield, the Peak District National Park and the Lake District National Park<sup>50</sup>. Liverpool and Manchester are captured within the top 20 most visited destinations in the UK for overseas and domestic visitors<sup>51</sup> whilst Chester Zoo is the most popular attraction in the UK outside London.

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<sup>49</sup> [http://www.tourismalliance.com/downloads/TA\\_395\\_420.pdf](http://www.tourismalliance.com/downloads/TA_395_420.pdf)

<sup>50</sup> <https://www.visitengland.com/destinations/north-west-england>

<sup>51</sup> <https://transportforthenorth.com/wp-content/uploads/Visitor-Economy-and-Transport-Demand-in-the-North-Analysis-min.pdf>

- 3.83 The Lake District in Cumbria is a popular domestic holiday destination, with two thirds of all domestic holiday makers having visited the Lake District<sup>52</sup>. International visitors on the contrary only make up 8% of total holidaymakers<sup>53</sup>. Northern Rail recently increased the number of trains between Windermere and Manchester Airport<sup>54</sup>, therefore encouraging a greater influx of international visitors to the region through means of greater access. From June 2019, the Lakes Line has 4 trains per day to Manchester Airport and 10 trains per day on the Furness Line. Currently, there are frequent shuttle bus services between Carlisle Lake District Airport and Carlisle Station.
- 3.84 With the recently approved open access services (Alliance), the reopened direct train services to/from Blackpool and London are set to commence by spring 2020 and
- 3.85 are also expected to increase visitor numbers to the seaside town<sup>55</sup>. Blackpool Council also has aspirations for the introduction of through services between the resort and Sheffield, noting the constraints identified above that might restrict the availability of paths across central Manchester.
- 3.86 Between October and December of 2018 3.4 million tourist trips were made to the North West, accounting for £681 million in expenditure. This was the largest regional expenditure figure when excluding London's £801 million<sup>56</sup>.

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<sup>52</sup> [https://www.visitbritain.org/sites/default/files/vb-corporate/Documents-Library/documents/England-documents/destination\\_report\\_-\\_lake\\_district.pdf](https://www.visitbritain.org/sites/default/files/vb-corporate/Documents-Library/documents/England-documents/destination_report_-_lake_district.pdf)

<sup>53</sup> <https://www.lakedistrict.gov.uk/caringfor/partnership?a=359235>

<sup>54</sup> <https://www.cumbriatourism.org/cumbria-tourism-welcomes-lakes-railway-investment-government/>

<sup>55</sup> <https://www.grandcentralrail.com/news/2019/grand-central-plans-new-blackpool-london-route-2020-in-major-boost-for-local-economy/>

<sup>56</sup> [https://www.visitbritain.org/sites/default/files/vb-corporate/Documents-Library/documents/England-documents/qbts\\_-\\_quarterly\\_regional\\_summary\\_-\\_q4\\_2018.pdf](https://www.visitbritain.org/sites/default/files/vb-corporate/Documents-Library/documents/England-documents/qbts_-_quarterly_regional_summary_-_q4_2018.pdf)

- 3.87 In 2013, the GVA added by the tourism industry to the North West accounted for £5.8 billion, exceeding the regional average by £900 million<sup>57</sup>. Evenings are particularly vibrant in the North's major economic centres – its towns and cities. It is important that the economic and cultural benefits of evening leisure can be realised across the North, and not restricted to those residing in large population centres. People must be able to access leisure opportunities, and the employment options they generate, and travel home afterwards.
- 3.88 Where services do exist, timetables and capacity provision are not always aligned to seasonal demand patterns and special events, with evidence of overcrowding at key times. Facilities on-board trains serving tourist destinations are not always well-suited to the needs of groups and families, nor those with luggage, where storage space can be limited. Infrequent services and slow journey times, particularly on routes which could serve as a gateway to National Parks and rural destinations, present a further barrier to rail travel.

### Future Opportunities

- 3.89 Direct rail connectivity to some leisure destinations is currently poor – for example there are often no direct rail services between coastal towns and potential sources of visitors in major population centres in the North and elsewhere. Direct connectivity is important as families and groups can have lower propensity to interchange – particularly with several items of luggage. If direct connectivity cannot be provided, there is a need to make interchange as easy and seamless as possible. There is a need for stations to be fully accessible (complying with the Equality Act, 2010), not only for commuters but also those with physical challenges and accompanying luggage which can be tiresome and not easy with multiple interchanges and inaccessible station designs.

## Connecting People: Supporting International Connectivity

### Current Scenario

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<https://www.ons.gov.uk/peoplepopulationandcommunity/leisureandtourism/datasets/regionalvalueoftourismestimateforsfnuts1andnuts2areas>

- 3.90 Overall, some 39.6 million air passengers were carried on flights to/from the North's airports in 2016, around 15% of the UK total. The largest proportion of air passengers consists of outbound leisure trips, which contributed around £0.5 billion to GVA in 2016.
- 3.91 There were around 2 million return business-related air trips to and from the North in 2016, with £5 billion of GVA in the North currently from air passengers derived from business productivity brought about through direct international air connections to and from the North's airports.
- 3.92 Whilst the North currently accounts for around 25% of the UK's population, its seven airports handle around 15% of all airport passengers in the UK. This suggests a degree of underperformance in the connectivity provided given the relative scale of the population and economic base.

**Figure 3-13: Annual Passenger Movements** <sup>58 59</sup>

Airport/Port	Total passengers per annum (2018)
Carlisle Airport	Re-opened in 2019
Doncaster Sheffield Airport	1,222,000
Grimsby & Immingham Port	98,000
Heysham Port	251,000
Hull Port	851,000
Humberside Airport	193,000

<sup>58</sup> Civil Aviation Authority, *Airport Data 2018* <https://www.caa.co.uk/Data-and-analysis/UK-aviation-market/Airports/Datasets/UK-Airport-data/Airport-data-2018/>

<sup>59</sup> Department for Transport, *Sea passenger statistics: data tables (SPAS)* <https://www.gov.uk/government/statistical-data-sets/sea-passenger-statistics-spas>

Leeds Bradford Airport	4,039,000
Liverpool Airport	5,047,000
Liverpool Port	659,000
Manchester Airport	28,293,000
Newcastle Airport	5,334,000
Teesside Airport	142,000
Tyne Port	621,000

- 3.93 An important international gateway for the North is Manchester Airport. Good access to the airport is important not just for the North West, but also from across the Pennines and to the airport's wider catchment in the Midlands and North Wales. Connectivity improvements were secured as part of the Northern and TransPennine Express processes, and the Long-Term Rail Strategy recognises the importance of further direct rail links to the airport. However, some key catchments have slow rail journey times to the airport relative to their distance, with convoluted routes via central Manchester. The alternative of road access would only add further to the congestion pressures on the motorway network, in the case of Chester, and unsuitable routes across the Peak District National Park in the case of Sheffield.
- 3.94 Frequent train services directly connecting Manchester Airport with other northern and Scottish cities including Liverpool, Sheffield, Leeds, Carlisle, York, Newcastle, Glasgow and Edinburgh has played a significant role in the airport's ability to serve the greater region. Trains departing from or travelling to Manchester Airport regularly top 'the most overcrowded



peak train services' list published by the Department for Transport<sup>60</sup>, with Autumn 2017 data stating the Glasgow Central to Manchester Airport service along the West Coast Main Line (WCML) peaking at 211% load factor<sup>61</sup>.

- 3.95 Aside from Manchester Airport, other commercial airports within the West Coast – Sheffield City Region SDC include Liverpool John Lennon Airport, Carlisle Lake District Airport and Doncaster Sheffield Airport. Although Liverpool John Lennon Airport is not directly served by a railway station, Liverpool South Parkway station located 3 miles away is linked by a regular bus service to/from the airport<sup>62</sup>. Carlisle Lake District Airport opened to commercial passenger flights in July 2019<sup>63</sup> and it is not yet connected by rail. Similarly, Doncaster Sheffield Airport has no direct rail links to it at present, though aspirations exist within Sheffield City Region to provide a direct connection.
- 3.96 None of the above other airports are served directly by the national heavy rail network, with interchange to other forms of public transport required to complete the door-to-door journey. This requirement can pose a barrier to use, particularly for those travelling in family groups and with luggage, and good quality information and through-ticketing is not always available. In order to facilitate for walking and cycling trips, there is a need for train services to have adequate spaces reserved to carry bicycles hence enabling access to National parks.

### Future Opportunities

- 3.97 Improved international connectivity will benefit the wider supply chain and visitor economy across the North, as well as creating agglomeration effects from faster, more reliable connections between key areas of employment, with £2 billion spending by 4.5 million overseas visitors. Increasing the visitor economy will require easy and accessible transport connections so that national and international visitors can access attractions across the North – in 2016 26.3 million domestic visitors spent £4.8 billion. Ultimately, if more passengers can access the North's airports by road and rail within 1

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<sup>60</sup> [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/465877/top-10-crowded-trains-2014-autumn.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/465877/top-10-crowded-trains-2014-autumn.pdf)

<sup>61</sup> [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/729221/top-10-overcrowded-trains-2017.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/729221/top-10-overcrowded-trains-2017.pdf)

<sup>62</sup> <https://www.liverpoolairport.com/transport/rail>

<sup>63</sup> <http://www.carlisleairport.co.uk>

to 2 hours, then more airlines are more likely to introduce new European and Intercontinental services from the North's airports. This drives an increasingly competitive market whilst providing more choice and opportunity for passengers.

- 3.98 A key challenge is to attract more businesses to take advantage of the North's prime and enabling capabilities. To achieve this, it needs to be easier, cheaper, faster and more reliable to travel to and from the North's gateways. Easier access to the North's airports can also support additional economic growth by enabling increased development of sites near or adjacent to the North's airports.
- 3.99 Connectivity on the wider network must enable fast and seamless journeys across the North. HS2 Phase 2b and Northern Powerhouse Rail schemes will deliver significant improvements to connectivity between Manchester Airport and the largest cities of the North. However, given the constraints on rail services to the existing Manchester Airport rail station, and their importance to the wider northern economy, it is a priority to improve rail accessibility to the airport during the 2020s.

## **Supporting the Built/Natural Environment**

### **Current Scenario**

- 3.100 The transport industry accounts for 24% of the UK's greenhouse gas emissions. The North's dependence on travel by private vehicle, due to the lack of alternatives, perpetuates this significant contribution to greenhouse gases within the study area - per capita levels of carbon dioxide emissions related to transport are particularly high in Hull, Leeds, Bradford, Oldham, Blackburn with Darwen, Sefton and Blackpool. Improved efficiency on the highway network and investment in rail will assist with reducing this global pollution.
- 3.101 Many of the built-up areas within the study area have identified air quality issues, directly linked to transport emissions. Promoting and supporting the natural environment and built environment with respect to sustainable travel options associated with the major transport networks will be a key opportunity and necessity of future transport initiatives.
- 3.102 Rail infrastructure near or within AQMA's throughout the West Coast – Sheffield City Region SDC corridor have been identified in<sup>64</sup>:
- Kendal in South Lakeland District

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<sup>64</sup> <https://uk-air.defra.gov.uk/aqma/maps>

- Galgate in Lancaster District
- Blackpool
- Leyland in South Ribble
- Ormskirk in West Lancashire District
- Newton-le-Willows in St Helens District
- Widnes in Halton
- Liverpool
- Warrington
- Chester
- Congleton in Cheshire East

3.103 Although it is recognised that trains are not as polluting on a per person basis compared to other modes of transport, the presence of diesel-powered trains near or within AQMA's and CIZ's do still contribute to pollution levels and therefore must be recognised.

#### **Future Opportunities**

3.104 Reducing carbon emissions and improving air quality is now a central requirement for the transport, freight and logistics sector. The UK's Clean Growth Strategy includes the aim to collaborate with the industry to reduce the impact of freight emissions and improve air quality across all transport modes. There is a need to investigate and understand the different options for the study Corridor to move towards delivery of alternative fuelling and operation.

3.105 Network Rail is also looking to achieve a target of 11% reduction of carbon emissions over the course of CP5 with further targets being announced for the next CP 6<sup>65</sup>.

3.106 Manchester is set to establish a Clean Air Zone (CAZ). Following submission of the outline business case [which can be found at [www.CleanAirGM.com](http://www.CleanAirGM.com)] the government instructed Greater Manchester to implement a Clean Air Zone Category C

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<sup>65</sup> <https://safety.networkrail.co.uk/home-2/environment-and-sustainable-development/energy-and-carbon-management/>

in 2021 Sheffield City Region and Lancashire County Council (Lancaster City Centre) are investigating the potential feasibility to manage air quality in the areas by installing CAZs.

- 3.107 A key theme of the draft Long Term Rail Strategy is increasing the cost effectiveness of the railway. This would be achieved by growing revenue and minimising the unit cost of operating and maintaining the North's railway without compromising the quality of the services offered, helping maximise network efficiency and enhance the case for additional faster and direct services. Electrification is one approach and the benefits of electrification in the North West are now being realised with electric trains running between Manchester, Liverpool, Wigan and Blackpool. New rolling stock is being introduced on Manchester Airport – Scotland services. Electrified railways are more efficient as well as reducing carbon emissions from rail. Electrification will not however be justifiable everywhere and the bi-modal trains offer potential, particularly harnessing new fuel sources such as Hydrogen and improvements in battery technology.

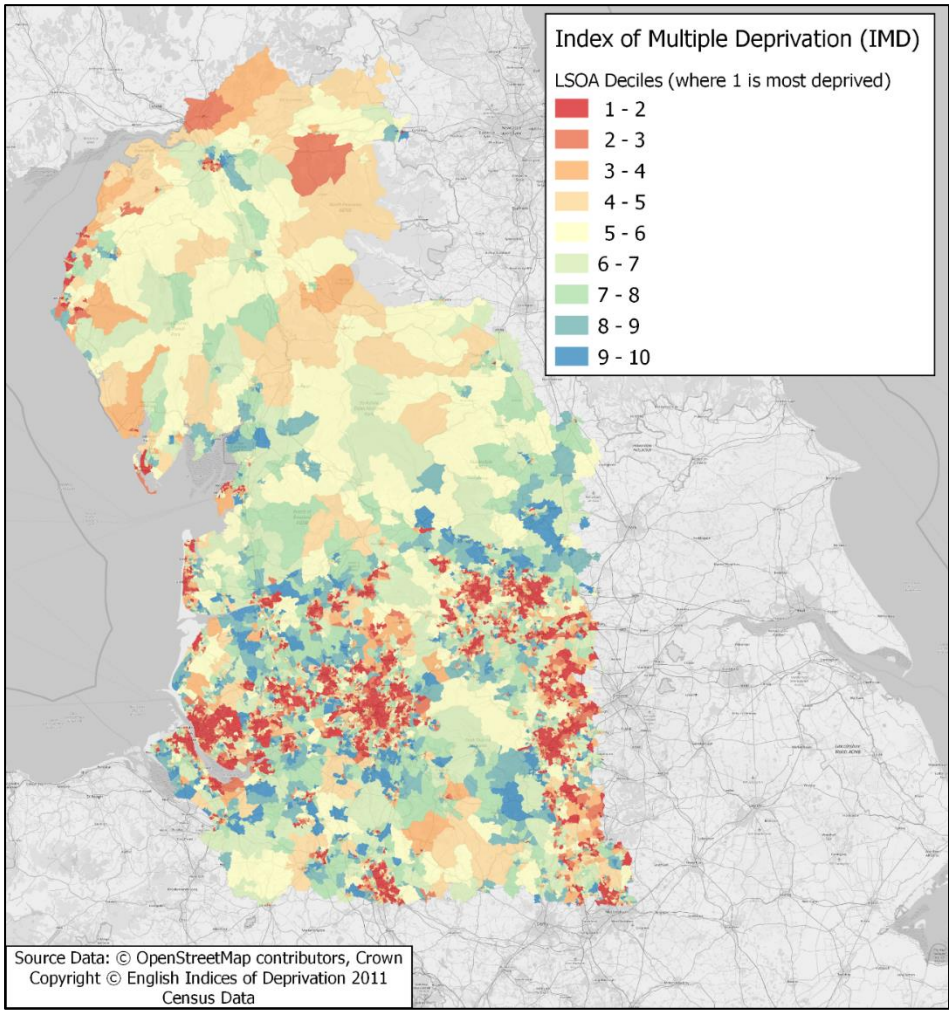
### **Addressing isolation, reducing deprivation and improving quality of life**

#### **Current Scenario**

- 3.108 The North's quality of life is an underpinning asset which supports its economy, particularly in providing an attractive place for people to live, work, invest and visit. Rail has an important part to play in supporting improvements to quality of life.
- 3.109 The economies and social requirements of rural communities in the North are different to those of its major towns and cities. Residents must often travel further to reach employment, education and leisure opportunities, and rail connectivity can provide an economic 'lifeline' to those in remote communities – especially to those without access to a private car. Rail service provision does not always meet these economic requirements, with few services on some rural routes, providing only limited direct connectivity to the wider North, and others where stations are not served frequently.
- 3.110 The North also has many areas suffering from the effects of economic deprivation, with concentrations in both urban centres and in areas of industrial heritage such as the former coal mining communities of West Cumbria. Rail does not always effectively meet the needs of these areas, with some stations difficult to access without private car and poorer service provision for employees with irregular shift patterns.
- 3.111 Figure 3-14 below highlights the spread of deprivation across the West Coast - Sheffield City Region. The distribution of this data ranks every small area in England from 1 being the most deprived, to 32,844 being the least deprived which are

then divided into 10 equal groups, ranging from the most deprived 10% to the least deprived 10% nationally, forming into deciles. So, the most deprived 10% areas are within decile 1 and the least deprived 10% areas are within decile 10.

Figure 3-14: Index of Multiple Deprivation Deciles (LSOAs)



- 3.112 From this spread of deprivation data, the majority of people living within areas of most deprivation surround major urban centres, such as Manchester, and also along the Western Coast within Cumbria and Blackpool. Out of the areas highlighted in the figure above, there are nearly three times the number of people living in the most deprived areas (1,418 LSOAs) compared to people living in the least deprived (512 LSOAs).

### **Future Opportunities**

- 3.113 Increasing access to employment, education and training for the population of the North can help to reduce unemployment and help those in low skilled jobs move into higher paid, more productive jobs. Effective and affordable public transport is the most efficient means of travel for workers at all skill levels and can be the only option for some people.
- 3.114 Rail can play a significant role in addressing the barriers to travel faced by a diverse section of society. Accessibility both to/from and at rail stations and on trains should not be barriers to travel and TfN is committed to supporting improvements to stations and trains and influencing new franchise commitments to reduce the barriers to travel for all. Disruption to facilities and services can have a big impact on both the accessibility of rail services to disabled people, and on disabled people's confidence in travelling by rail. TfN will work with train operators to ensure that the needs of those with reduced mobility and hidden disabilities are appropriately and courteously provided for. There is a need to provide both train and station accessible facilities and provision at all hubs/terminals to enable seamless interchange and movement so that physically impaired users and aged users can efficiently use the network.

### **Technology**

- 3.115 The gathering pace of technological change through the delivery of higher speed and capacity digital networks, the connection and automation of vehicles, the adoption of robotics, zero emission propulsion, sharing of transport assets and new approaches to payment could transform the travel and the provision and management of infrastructure and services. Globally, nationally and locally, vehicle, infrastructure and service providers, across both the public private sectors are investing in and adopting a range of new technologies and will disrupt current travel markets; however, the scale and timing of Transformational change is unclear.
- 3.116 Furthermore, these disruptors to transport will not only affect the way transport networks are used, they will also shape whether and when people make journeys. The ability to operate remotely from the traditional work place, access health, education and other daily needs from home, plan journeys with in advance with greater accuracy, and the ability to work



while travelling may lead to shifting travel patterns and reductions in the need to make journeys during the established and narrowly defined weekday morning and evening peak periods.

- 3.117 The Digital Railway programme has the potential to significantly improve both capacity and reliability through the implementation of digital signalling systems and traffic management. Harnessing this technology will enable the rail network to be more flexible and responsive to changes in demand and improve the reliability of key assets such as signalling. Evolution in ticketing technology provides an opportunity to improve inter-modal integration, price certainty for passengers and increase the amount of travel data available to better plan the requirements of the future network.
- 3.118 There are significant variations in digital connectivity across the North. The fixed and mobile network coverage is primarily strong in the main centres, with the latter having greater coverage through the delivery of 4G into more remote areas. However, there is a considerable gap in connectivity the further away populations are from the North's main conurbations. This limits opportunities for e-commerce, home education and tele-working in areas already suffering from poorer levels of physical connectivity, damaging the North's ability to reach global markets from less connected areas.
- 3.119 The National Infrastructure Commission's Connected Future report into 5G and telecommunications technology<sup>66</sup> suggested that high speed communications should be installed along all major transport corridors. With a digital backbone associated with road and rail networks, provided through fixed and mobile infrastructure facilitated by a number of providers, as well a consistent 'utility' of digital provision to all homes, business and centres for services, the true potential for hyper-connectivity can start to be realised. Major infrastructure upgrades implemented in the Corridor should consider the potential to contribute to the 'digital backbone'.
- 3.120 The national transport infrastructure providers are continuing to roll out digital technologies to their networks with both Highways England and Network Rail delivering both operational and monitoring systems to provide efficiency improvements users. However, at the local level there are varying levels of uptake of digital and smart systems for network management and providing services to users. Furthermore, issues in the Corridors associated with transport connectivity and the associated environmental impacts may be reduced through technological advances in:

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[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/577906/CONNECTED\\_FUTURE\\_ACCESSIBLE.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/577906/CONNECTED_FUTURE_ACCESSIBLE.pdf)

- Connected Vehicles;
- Automation and robotics;
- Zero emission propulsion;
- Emerging rail traction technology such as bi-mode, tri-mode and battery;
- Shared assets;
- On account payment systems; and
- Additive Manufacturing.

## 4 The Need for Intervention

### Introduction

- 4.1 The Need for Intervention builds on the Case for Change set out in Chapter 3. It focusses on the problems and opportunities identified as being key to the unlocking of transformational growth. It firstly shows why investment is needed beyond the interventions assumed to be delivered in the Reference Case. It then identifies why TfN is the appropriate promoter for the additional infrastructure investment required and what objectives, subordinate to TfN's STP<sup>67</sup> objectives, TfN aims to achieve with a programme of investment in the West Coast – Sheffield City Region SDC.

### Why further investment is needed

- 4.2 Across the North there are both physical (such as highway connectivity, journey times and reliability) and economic barriers restricting trade and business interactions. These barriers limit clustering of businesses, i.e. agglomeration economies, causing under-utilisation of the potential knowledge/innovation spill-overs resulting from improved efficiencies. When the transformational growth is factored in, synergies between road and rail will be critical to addressing these challenges and opportunities, as will an understanding of how transport demands will change in the future.
- 4.3 In a 'transformed future' scenario, the Northern economy would become more productive partly through increasing the skills of its workforce and lowering levels of economic inactivity - both these factors are associated with an increased propensity to travel. All other things being equal, increased productivity would therefore be expected to lead to marked changes in both the travel patterns of individuals and aggregate patterns across the entire North.
- 4.4 Under the transformational scenario, growth is expected in high and medium-skilled occupations (an increase of 35,300 and 1,600 jobs per annum by 2050 respectively), while jobs in low-skilled occupations are expected to stabilise from 2030 after a decline since 2015. In a transformed North, by 2050:
- total demand for rail travel is expected to be up to four times higher than today, to around 760 million trips.
  - total demand for road travel is forecast to increase by up to 54% by 2050, to around 193 billion vehicle km travelled.

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<sup>67</sup> Provided in the Regional Policy Section of this report (SPOC January 2019)

- 4.5 The major transformational infrastructure projects included in the Reference Case (including HS2, Northern Powerhouse Rail, Northern Trans-Pennine Routes, Trans Pennine Tunnel & Wider Transport Connectivity Assessment and Manchester North-West Quadrant), are focussed on delivering improved connectivity between the North's city regions. A significant proportion of the growth catalysed by these projects will therefore be focussed on major towns and cities. To achieve transformational growth across all parts of the North, not just in the large urban conurbations, and realise the necessary rebalancing of the northern and UK economies will require further transport intervention.
- 4.6 Building on these foundations, the SDCs represent an economic area where the evidence to date indicates most progress towards the transformational growth scenario would be made by bringing forward Pan-Northern road and rail investment over the lifetime of the STP, with investment in all corridors critical in achieving TfN's and Partners collective ambitions.

### **Why TfN is the appropriate promoter**

- 4.7 TfN's remit is focused on the identification and recommendation of strategic transport interventions (set out in its STP), which generally support longer distance trips and have a pan-northern impact. TfN will also work with partners to support complementary investment at a local level to ensure that a 'whole journey' and 'total network' approach to improving transport is followed.
- 4.8 There is no other authority or organisation with a remit that would make them an appropriate alternative; which is not to say that Highways England and Network Rail, which come closest, would not have a role in delivering interventions.

### **The sub-objectives of the SDCs**

- 4.9 Subordinate to the four objectives set out in the STP, a set of sub objectives were set at the SDC level, to ensure that TfN's aims for investment are achieved. These sub objectives were developed in consultation with stakeholders, including one to ones with industry, to support both the STP's objectives and the aspirations for Pan-Northern interventions. Sub objectives underwent a rigorous process of approvals including Transport Appraisal Guidance (TAG) and SDC Project and Programme Boards.
- 4.10 These sub objectives are set out in the following table together with their performance measures.

**Table 4-1: SDC Sub-objectives**

STP Objectives	Sub Objectives	SDC Performance Measures
Transforming the economic performance	Improving productivity across the North	Does the scheme improve the connectivity for people and/ or goods?
	Improving links between the North's ports, airports, and strategic transport interchanges and the major transport networks for people and goods	
	Supporting, informing and influencing present and future land-use development in the North	Does the scheme improve accessibility to [any of] the North's four prime capabilities?
Increase efficiency, reliability, integration and resilience in the transport system	Improving efficient operational performance of existing major transport networks	Does the scheme improve the throughput of existing transport networks?
	Increasing the capacity and capability of the major transport networks for people and goods	
	Improving the reliability of the major transport networks for strategic transport movements of people and goods	Does the scheme improve the predictability of journey times?
	Improving travel choices and user experience for the movement of people and goods across the North	Does the scheme improve customer/ driver experience including via increased choice?

STP Objectives	Sub Objectives	SDC Performance Measures
	Increasing the resilience of major transport networks	Does the scheme improve the resilience/recovery of major transport networks?
Promote and enhance the built, historic and natural environment	Improving sustainable travel options and making best use of the North's existing major transport network. Supporting the reduction of transport-related Greenhouse Gas (GHG) emissions and improvement of air quality across the major transport networks	Does the scheme increase use of sustainable travel options associated with the major transport networks and reduced transport-related emissions (CO2, NOX, PM)?
	Reducing the impact of transport on local communities and environmentally sensitive areas	Does the scheme reduce the impact of transport in environmentally sensitive areas?
		Does the scheme reduce the impact of transport on local communities?
Improve inclusivity, health, and access to opportunities for all	Supporting the delivery of Transformational Infrastructure and employment projects	Does the scheme improve access to economic assets of National of Pan-Northern significance?
	Supporting and enhancing the visitor economy	Does the scheme improve access to major tourist destinations?

STP Objectives	Sub Objectives	SDC Performance Measures
	Supporting and enabling the delivery of strategic housing sites	Does the scheme improve integration with local transport networks?
	Supporting an affordable inclusive transport network with enhanced access to key opportunities, education and skills.	
	Improving integration and coordination with local transport networks	

## 5 Wider Context

### Introduction

- 5.1 This section summarises the wider context of the proposed programme of interventions for the West Coast – Sheffield City Region corridor. By outlining the programme's delivery constraints, as well as interdependencies with other implemented or planned projects as well as wider stakeholder needs and views, this section aims to provide a bigger picture with regards to the ease of implementation, its relation to other projects and the wider public opinion.

### Delivery Constraints and Opportunities

- 5.2 A number of specific and more general constraints have been identified that may affect the delivery of the programme.

### Transport Model Limitations

- 5.3 The future travel market scenarios available for use in the transport modelling are as follows:



- National Trip End Model (NTEM)<sup>68</sup> Core – in line with WebTAG guidance;
- NTEM Core with spatial plans and TEMPRO constrained at Local Enterprise Partnership (LEP) level;
- NTEM Core with IER land use uplift, constrained at LEP level; and
- Northern Transport Demand Model (NTDM) derived transformational high growth.

5.4 The models developed are explained further in the Economic Dimension.

5.5 Transport modelling has focussed on the NTEM Core scenario during this stage of work. Plans are currently being made to resolve technical issues experienced with additional scenarios through follow-on commissions.

5.6 Notwithstanding, the NTEM Core scenario represents a lower travel market than TfN's transformational growth demand forecasts in terms of volume of movements and can therefore be seen as a conservative representation of the benefit to cost ratio (BCR) for a given intervention /programme of interventions.

#### *Environmental*

5.7 The North of England includes 58 different National Character Areas (NCA). Designated high value landscapes within the North include its many National Parks, Areas of Outstanding Natural Beauty (AONB) and Heritage Coasts. Poorly located or designed transport infrastructure has the potential to degrade existing landscape character and visual amenity.

5.8 By the nature of the Pennines (which contain designated and non-designated landscapes including the Peak District and Yorkshire Dales National Parks) running north-south through a significant section of the North, any efforts to improve east-west connectivity or local or regional connections within the Pennines and its fringes will risk significant adverse landscape impacts.

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<sup>68</sup> The National Trip End Model forecasts the growth in trip-origin destinations (or productions / attractions) up to 2051 for use in transport modelling. The forecasts accounts for national projections in population, employment, housing, car ownership and trip rate. The analyst is able to vary these forecasts to take into more granular data at a local level, such as from local plans or local industrial strategies, by constraining growth at lower spatial scales.

## Interdependencies

### Reference Case

- 5.9 As set out in the reference case definition in Section 2 above, the basis against which the programme of interventions in the West Coast – Sheffield City Region SDC is assessed includes some improvements which are not yet committed. Therefore, the basis of the assessment and conclusions reached in this SPOC are dependent on implementation of the reference case. That is not to say the programme does not have benefits in its own right, however this has not been examined as part of this stage of work.

### Major Transformational Infrastructure Projects

- 5.10 Part of the rationale for the SDCs is to build on and extend the benefits of other significant investments in TfN's wider programme. Schemes such as NPR would benefit from the implementation of the proposed programme of interventions. As the major transformational infrastructure projects and SDC projects target the improvement of inter-city transport links, it can be expected that complementary benefits can be achieved. Furthermore, as HS2 is expected to function as an additional catalyst for NPR<sup>69</sup>, the integration of both projects with the proposed programme of SDC interventions will have additional complementary benefits. That is not to say the programme does not have benefits in its own right; however, this has not been examined as part of this stage of work.
- 5.11 An overarching programme perspective is required to ensure the view of these complementary benefits is retained as various packages and interventions move forward in the delivery process.

### Wider Policy Context

- 5.12 The proposed programme of interventions is not only closely aligned with key national, regional and local policies, but it is also expected that these policies are interdependent with regional interventions as suggested here. Notably, the programme of interventions will also lead to strong complementary benefits for non-transport policies.
- 5.13 Key national non-transport policies and strategies such as the UK Industrial Strategy or the Making our Economy Work for Everyone report, also identified the need for investing in strategic infrastructure to improve the country's productivity and

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<sup>69</sup> Global Railway Review (2018) <https://www.globalrailwayreview.com/news/67419/hs2-npr-ambitions-greater-manchester/>

increase economic growth and overall wellbeing. As a result, it is expected that the proposed programme of interventions will play a central complementary role for achieving the objectives of these strategies.

- 5.14 The NPIER identified poor connectivity and transport as one of the factors driving the productivity gap in the North. Forecasts anticipated that a 'transformed' North, where there were improvements to transport connectivity, as well as the skills base and innovation, would lead to an additional 850,000 jobs, 4% Increase in productivity and a GVA 15% higher than a business as usual scenario.

### **Business Case and Funding Approval**

- 5.15 The costs associated with the development and construction of the programme are significant and the programme is currently in the early stages of business case development. To secure any government funding toward the scheme the DfT's Transport Business Case process will need to be adhered to. This SPOC is the first step, followed by:
- Strategic Outline Business Case (SOBC) development and approval
  - Outline Business Case (OBC) development and approval
  - Full Business Case (FBC) development and approval

## 6 Option Assessment Process

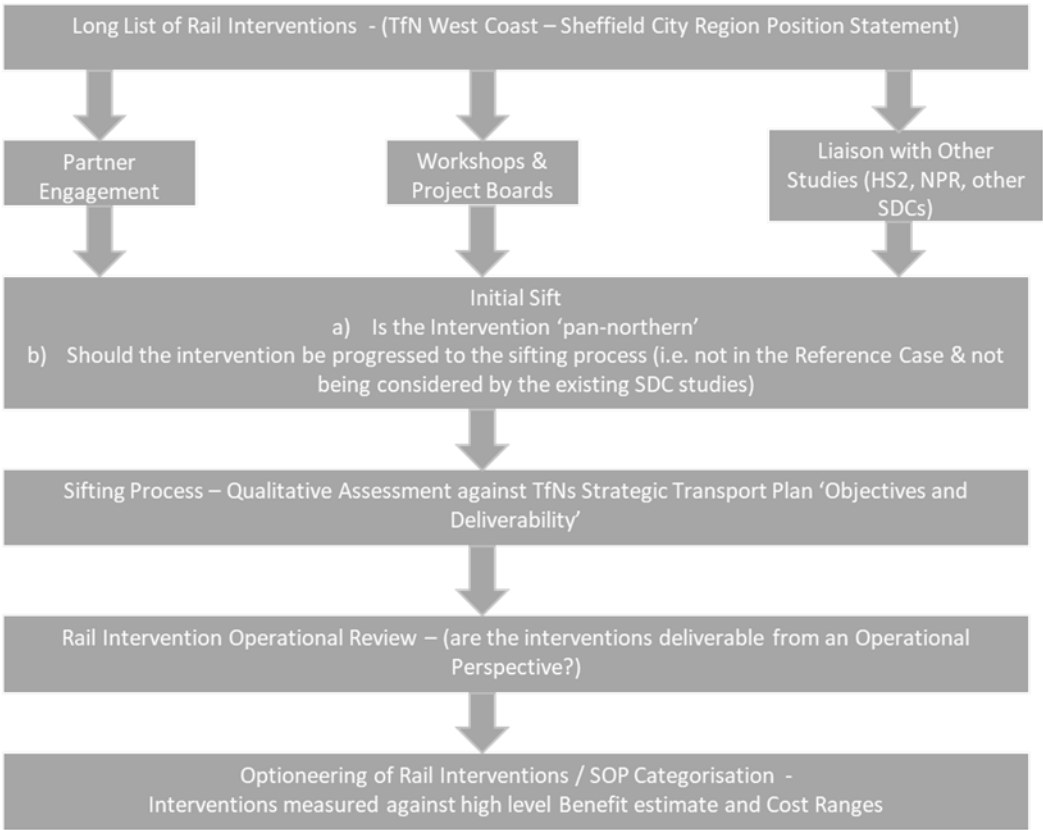
### Introduction to Rail Options Assessment

6.1 TfN have undertaken a staged approach to allow the identification of 'Pan-Northern' Rail interventions in West Coast - Sheffield City Region SDC study area. This has included:

- Partner Engagement
- Roundtable Workshops to identify strategic transport issues across the corridors and
- Liaison with other longer-term studies (High Speed 2, Northern Powerhouse Rail, other SDC studies and Scottish Borders)

6.2 As a result of this process, a 'long-list' of Rail Interventions were identified for consideration for the West Coast – Sheffield City Region SDC. This list was then subject to an 'initial Sift' which is based on a number of agreed criteria such as 'does the intervention meet the TfN Strategic Transport Plan Objectives', 'is it pan northern' and 'should the intervention be progressed to the sifting process (i.e. it isn't already considered as part of the reference case set of interventions and / or it has already been considered by an existing SDC study)'. Following this exercise, the refined list of rail interventions is progressed to the option assessment stage. This process is outlined in Figure 6-1 below.

**Figure 6-1: Long list to option assessment process**



### Stakeholder Consultation

6.3 TfN communications team hosted a series of roundtable Stakeholder Consultations to inform the interventions that contributed to this SDC. These sessions sought the views of Councils, transport authorities and businesses with an interest in each SDC area.

- 6.4 The consultation exercises enabled stakeholders to nominate specific rail schemes for inclusion at Long-Listing stage. Stakeholder-nominated schemes were assessed via the process described earlier in this section. The West Coast - Sheffield City Region SDC Position Statement (March 2019) outlines the work and evidence base that has been done to bring together the premise of this corridor study. TfN's remit has been focused on the identification and recommendation of strategic transport interventions, which generally support longer distance trips and have a pan-northern impact. TfN has also been working with partners to support complementary investment at a local level to ensure that a 'whole journey' and 'total network' approach to improving transport is followed.
- 6.5 Further consultation with both Network Rail and TfN's partner authorities was undertaken during the optioneering process, to discuss and agree the placement of rail schemes within the three categories (Core, Complimentary, non-Pan-Northern) further described below. This consultation informed the final definition of the Strategic Outline Programme set out in Table 6-2. Table 6-2:

### **Option identification and shortlisting**

- 6.6 For each SDC, a process of identifying and shortlisting interventions with Pan-Northern impacts was carried out. The initial long list of interventions was developed through engagement with stakeholders, complemented by reviewing policies and scheme proposals within the study corridors. Sources included: Highways England's Road Investment Schemes, Network Rail's Enhancements Delivery Plan, TfN STP, Long Term Rail Strategy, Welsh Government's National Transport Finance Plan and local authority schemes. The longlisting exercise took account both of Pan-Northern outcomes, emerging policy and future technology developments.

Following creation of the longlist, a sifting process was undertaken considering each intervention's strategic fit with the four STP objectives and SDC sub objectives (as set out in Table 4-1). This was based on a qualitative appraisal of each transport input's likely contribution to the relevant performance measures and deliverability using a four-point scoring scale as set out in Table 6-1 and aided through application / reference to a set of metrics (covering the four-point scale) for each performance indicator.

**Table 6-1: Assessment scoring scale**

Performance Measure	Deliverability	Rating
A strong fit with the desired outcome with large beneficial and/or Pan-Northern or national scale impacts	Strongly deliverable	
A good/reasonable fit with the desired outcome with beneficial and/or sub-corridor level impacts	Likely to be some deliverability issues but are not considered to be insurmountable	
A neutral/marginal impact with the desired outcome and/or with local impacts	Not applicable	
Conflicts with the desired outcome and/or conflict with other interventions, with risk amelioration/mitigation in place	Significant barriers to deliverability that need to be overcome through risk amelioration	

- 6.7 The sifting tool also provides a 'performance rating' for each of the four STP objectives. This does not represent a summation or weighting of the individual performance indicator ratings ('scores'); but rather takes an informed risk-based view of how well/ poorly the potential intervention met the strategic objective when considered across the respective performance indicators.
- 6.8 In order to ensure a consistency of approach the sifting tool was subject to verification and moderation across all SDCs. The outcome of the initial sifting exercise was to classify potential interventions into one of three categories:
- **Potential Core SOP Intervention:** An intervention that has the potential to support transformation improvement, measured against the four Strategic Plan objectives, in its own right

- **Potential Complementary SOP Intervention:** An intervention that as part of a package of interventions that together have the potential to support transformational improvement (but is not Pan-Northern in its own right). Sequenced delivery could mean that complementary interventions come earlier, they could be the quicker wins.
- **Non-Pan Northern Intervention:** An intervention that would only have limited benefits as part of a package of interventions but may have local benefits

6.9 All STP objectives have been treated with equal importance. Interventions that have the potential to strongly support one or more of the STP objectives may be considered a potential core intervention as part of a balanced SOP for the SDC as a whole. It is fully recognised that some potential interventions are likely to face barriers to deliverability and these challenges will need to be overcome as part of the scheme development process.

### Option refinement

- 6.10 Phase 1 of this study concluded with an Option Assessment Report (OAR) and an initial sifted list of interventions, representing a draft SOP. This draft SOP was appropriately coded into the regional highway and rail models for more detailed appraisal, refinement and package optimisation.
- 6.11 For rail, this coding was informed by a separately-commissioned analysis, which assessed each SOP intervention for deliverability (whilst still recognising that further design and development will be required to fully understand the interventions required to deliver the Outputs).
- 6.12 It was the intention to base the optioneering process on a transformational travel market, derived from the NTDM but as described previously this has not been possible owing to technical difficulties encountered during this stage of work.
- 6.13 Instead, Transport for the North provided forecast matrices for 2035 and 2050. These were generated using the DfT's Exogenous Demand Growth Estimator (EDGE), which estimates growth in demand for rail travel based on exogenous factors such as employment, population and GDP. The forecast matrices provided only address growth for internal trips (those entirely within the TfN study area); no growth was applied to external trips on instruction from TfN. In addition, the 2050 matrices assume there is no change in demand after 2038.
- 6.14 The rail optioneering process consisted of an initial comparison of anticipated user journey time benefits and capital costs for each sub-corridor package of interventions, undertaken alongside TfN's partners. SOP interventions were then categorised in the following manner:



- interventions that have a strong strategic case and are supported by the NoRMS model outputs;
- interventions that have a strong strategic case but are not adequately represented by the NoRMS model, and/or requiring further development and analysis.

6.15 The option refinement process also removed a number of potential interventions where the transport need was met by better performing alternative interventions or the intervention is not expected to make any meaningful contribution to the desired Pan-Northern transport outcomes.

### **Key Pan-Northern Transport Outcomes and Programme of Interventions**

- 6.16 A final strategic outline programme (SOP) of rail interventions for the West coast – Sheffield City Region SPOC has been defined and is presented below in Table 6-2:. The SOP proposals essentially fill the gaps that are not covered by the other SDCs. The Reference case schemes are set alongside the relevant key pan-Northern outcomes within the Strategic Development Corridors. This table also contains all the other SOP interventions relevant to the study area from the other SDC corridors which align to the outcomes provided.
- 6.17 The rail SOP proposals are shown alongside the reference case interventions and the rail interventions that have been already identified from 'other' SDC studies that have overlapped with this SDC study area, in

- 6.18 Figure 6-2 on a geographical map base. A further map showing just the West Coast – Sheffield City Region rail SOP interventions is provided, on a 'stylised' map base, in Figure 6-3 below. Finally, to show how all the rail interventions are integrated, all the proposed rail SOP interventions across the Pan-Northern SDCs is shown in Figure 6-4.
- 6.19 The rail interventions shown are indicative at this stage. They are based on the level of evidence currently available at this early stage of assessment. For many of the reference case scheme there remains a critical requirement to continue with the development of business cases, to secure funding and TfN will continue to work with partners to try and achieve that. It should also be noted that many of the interventions require further development and a positive funding decision before they can be delivered. Delivery of these draft transport interventions should not be relied upon for planning and development purposes



**Table 6-2: Strategic Outline Programme of Rail Interventions**

Pan Northern Outcomes	Status	Rail/ Public Transport
Ensure that the West Coast Main Line can accommodate HS2 and Northern Powerhouse Rail	SDC Reference Case	<ul style="list-style-type: none"> <li>• HS2 Phases 1, 2a and 2b including all station works to accommodate services</li> <li>• Crewe Hub (including Crewe North Connection to "Classic" network)</li> <li>• Northern Powerhouse Rail programme</li> <li>• Interventions at the major hubs necessary to realise the benefits of improved connectivity along the NPR corridors, including in this SDC Manchester Piccadilly</li> <li>• West Coast Main Line – Wigan and Preston to Scotland (journey time and capacity improvements)</li> </ul>
	SDC SOP intervention	<ul style="list-style-type: none"> <li>• <b>Crewe to Preston (capacity improvements): <i>West Coast – Sheffield City Region SDC</i></b></li> <li>• Warrington Bank Quay (or integrated station at Warrington): <i>West and Wales SDC</i></li> <li>• Wigan North Western (or integrated station at Wigan): <i>West and Wales SDC</i></li> </ul>
<p>Improve connectivity, capacity and resilience across Cumbria and Lancashire, &amp;</p> <p>Support the visitor economy and enhance</p>	SDC Reference Case	<ul style="list-style-type: none"> <li>• Committed service frequency and rolling stock enhancements via Northern and TransPennine Express and rail franchises</li> <li>• Transpennine Route Upgrade (including intermediate interventions);</li> <li>• Manchester - Preston improvements</li> <li>• Cross Manchester capacity and reliability</li> </ul>

<p>strategic connections across the North to support UK competitiveness</p>	<p>SDC SOP intervention</p> <ul style="list-style-type: none"> <li>• <b>Lancaster – Morecambe (capacity improvements): <i>West Coast – Sheffield City Region SDC</i></b></li> <li>• Windermere and Barrow to Manchester Airport (frequency and journey time improvements): <i>Southern Pennines SDC</i></li> <li>• Preston/Bolton to Sheffield (direct connectivity/journey time improvements): <i>Southern Pennines SDC</i></li> <li>• East Lancashire Line (journey time and capacity improvements): <i>Central Pennines SDC</i></li> <li>• Burnley to Manchester journey time and service improvements: <i>Central Pennines SDC</i></li> <li>• Preston to York (journey time improvements): <i>Central Pennines SDC</i></li> <li>• Skelmersdale rail link: <i>Central Pennines SDC / Southern Pennines SDC / West and Wales SDC</i></li> <li>• Crewe – Stoke - Derby (journey time improvements): <i>West and Wales SDC</i></li> <li>• Extension of North Staffordshire services to Nottingham and Manchester Airport: <i>West and Wales SDC</i></li> <li>• Manchester – Skelmersdale (via Wigan) service frequency enhancement: <i>Southern Pennines SDC</i></li> <li>• New stations at Droylsden/Littlemoss (Eastern Gateway) and Cottam Parkway: <i>Central Pennines SDC / Southern Pennines SDC</i></li> <li>• Buxton Line (journey time improvements): <i>Southern Pennines SDC</i></li> <li>• Service frequency enhancements between Ormskirk and Preston: <i>Central Pennines SDC</i></li> <li>• Liverpool to Preston (journey time and service improvements): <i>Central Pennines SDC</i></li> <li>• Southport to Wigan (journey time improvements): <i>Central Pennines SDC</i></li> <li>• Colne to Accrington (journey time and service improvements): <i>Central Pennines SDC</i></li> <li>• South Fylde Line (journey time and capacity improvements): <i>Central Pennines SDC / Connecting the Energy Coasts SDC</i></li> </ul>
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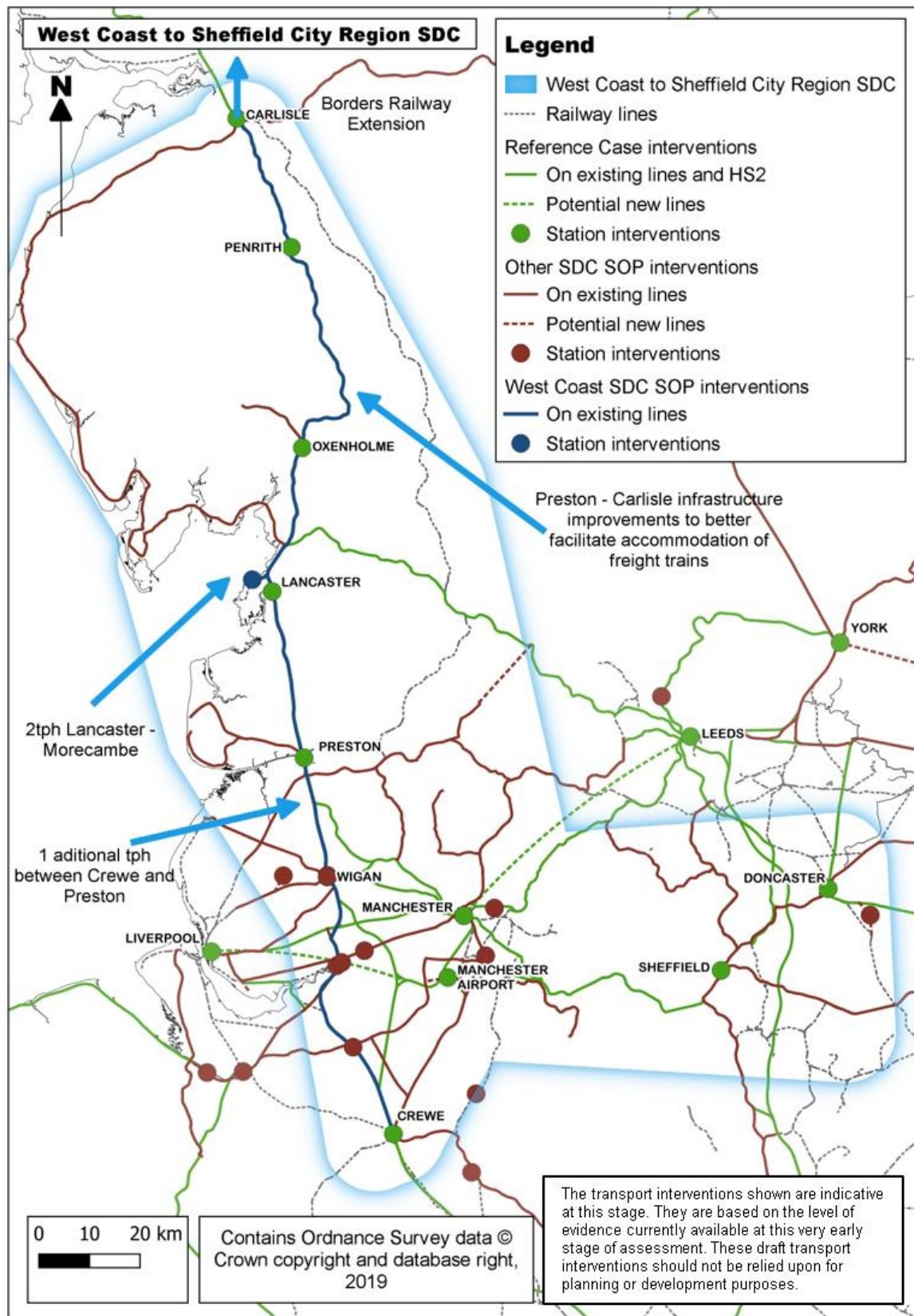
- Enhanced public transport links to Fleetwood: *Central Pennines SDC / Connecting the Energy Coasts SDC*
- Journey time improvements Preston - Blackpool North: *Central Pennines SDC / Connecting the Energy Coasts SDC*
- Skipton – Colne reopening: *Central Pennines SDC*
- Blackburn to Manchester Victoria (journey time improvements): *Central Pennines SDC*
- Rossendale to Manchester public transport connectivity: *Central Pennines SDC*
- Heavy rail capacity and journey time improvement in the South Manchester area and on the Wilmslow and Buxton lines in addition to the Bus Rapid Transit Schemes connecting Wigan Borough and Salford City: *Southern Pennines SDC*
- Cumbrian Coast Line - Journey time and capacity improvements: *Connecting the Energy Coasts SDC*
- Whitehaven to Newcastle (frequency improvements): *Connecting the Energy Coasts SDC*
- Furness Line - Journey time and reliability improvements: *Connecting the Energy Coasts SDC*
- Windermere to West Yorkshire (service improvements): *Central Pennines SDC*
- Increased service calls at Hartford and other WCML stations: *West and Wales SDC*
- Tyne Valley Line – route upgrade and service improvements: *Connecting the Energy Coasts SDC*
- Mid-Cheshire Line (journey time and capacity improvements): *West and Wales SDC*
- Northwich to Sandbach (reopening and new stations): *West and Wales SDC*
- Knutsford to Manchester Airport (Western Link connection): *West and Wales SDC*
- CLC line (Capacity and Service Improvements): *West and Wales SDC*
- Birchwood park and ride: *Southern Pennines SDC*
- Stockport Station (later phases): *West and Wales SDC*

Ensure that the needs of freight operators can be met	SDC Reference Case	<ul style="list-style-type: none"> <li>• Cumbrian Coast freight capacity programme</li> </ul>
	SDC SOP intervention	<ul style="list-style-type: none"> <li>• West Coast Main Line freight capacity enhancements <b>and better accommodation of freight:</b> <i>Central Pennines SDC / <b>West Coast – Sheffield City Region SDC</b></i></li> <li>• Port of Liverpool to West Coast Main Line enhancements: <i>Central Pennines SDC</i></li> <li>• Port Salford rail freight access: <i>Central Pennines SDC</i></li> <li>• Freight prioritised gauge cleared route across the Pennines: <i>Central Pennines SDC</i></li> </ul>
Accommodate services running north to Scotland	SDC Reference Case	
	SDC SOP intervention	<ul style="list-style-type: none"> <li>• <b>Borders Railway extension: <i>West Coast – Sheffield City Region SDC</i></b></li> </ul>
Onward connectivity to the Sheffield City Region	SDC Reference Case	

	<div>SDC SOP intervention</div> <div><ul style="list-style-type: none"><li>• Rail connection and station for Doncaster Sheffield Airport: <i>Southern Pennines SDC</i></li><li>• South TransPennine Line – journey time and capacity improvements between Doncaster and Cleethorpes: <i>Southern Pennines SDC</i></li><li>• Sheffield to Lincoln (journey time improvements and service frequency enhancements): <i>Southern Pennines SDC</i></li><li>• Penistone Line (journey time improvements and service frequency enhancements): <i>Southern Pennines SDC</i></li><li>• Hallam Line (journey time improvements): <i>Southern Pennines SDC</i></li><li>• Barnsley – Doncaster direct services: <i>Southern Pennines SDC</i></li><li>• Sheffield – Nottingham (journey time improvements): <i>Southern Pennines SDC</i></li></ul></div>
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**Figure 6-2: Combined SDC Passenger Rail SOP Proposals within WC – SCR Study area**



**Figure 6-3: WCSCR SDC Passenger Rail SOP Proposals**

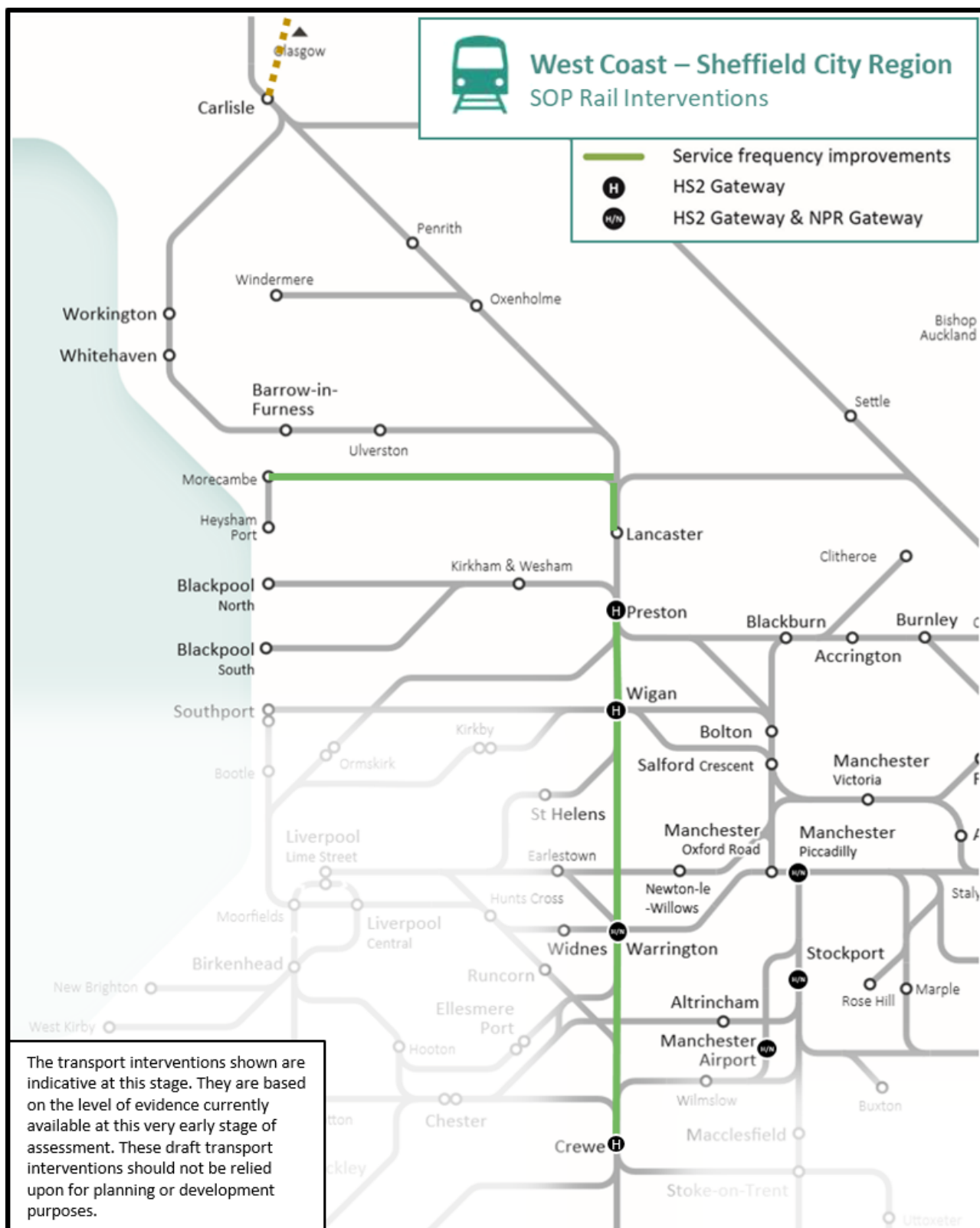
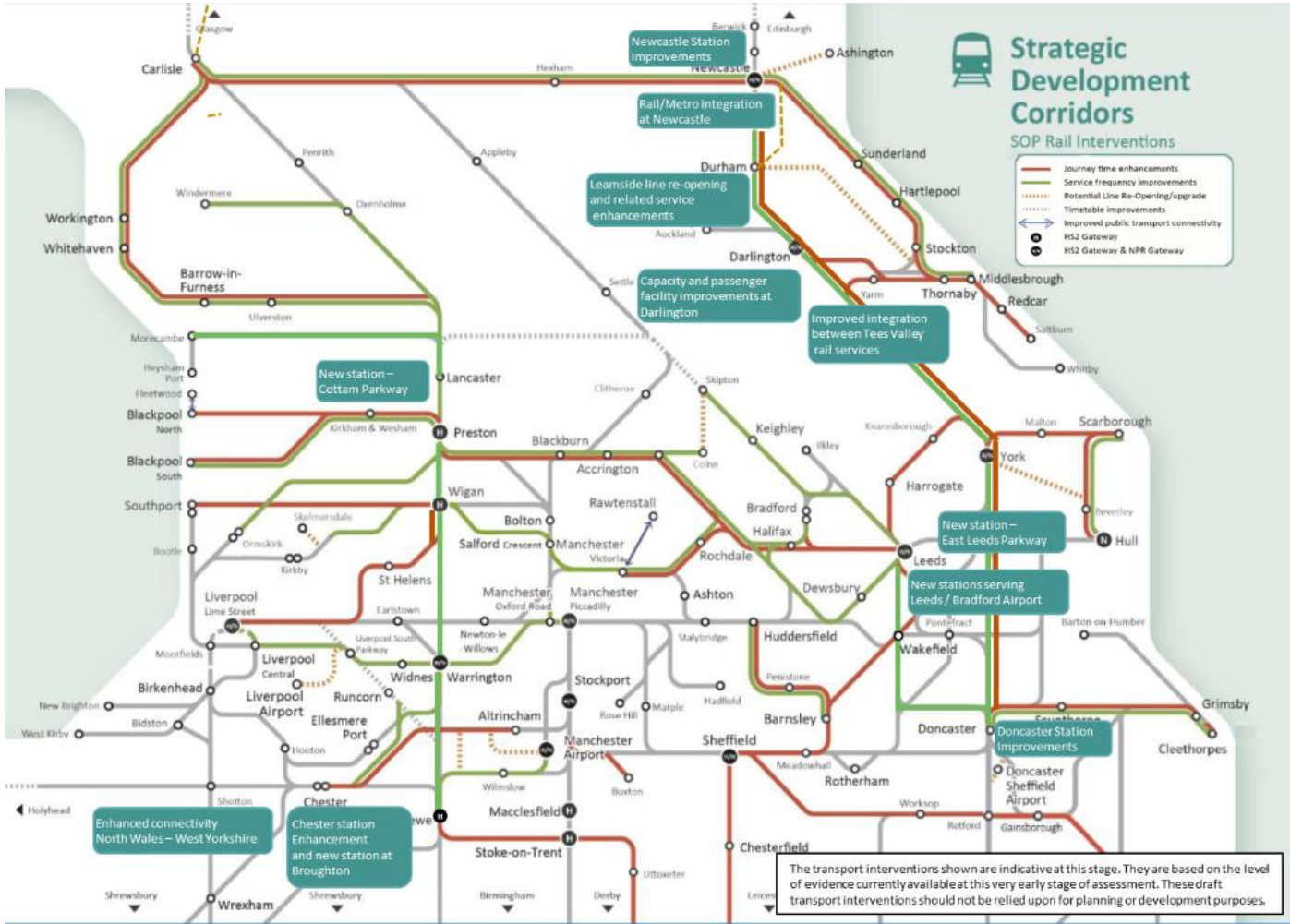


Figure 6-4: Passenger Rail SOP Proposals across the Pan-Northern Strategic Development Corridors



- 6.79 From a freight perspective work has been undertaken to better understand the implications of future growth in freight demand, both to, from and through the North of England and the demand it might create at a spatial level for new warehousing associated with intermodal terminals and ports as per the MDST study done for TfN (March 2019).
- 6.80 The transport interventions shown are indicative at this stage. They are based on the level of evidence currently available at this very early stage of assessment. It should also be pointed out that many of these interventions require further development and a positive funding decision before they can be delivered.
- 6.81 Delivery of these draft transport interventions should not be relied upon for planning and development purposes. As with previous SDCs, the current limitations of the modelling tools prevent the detailed appraisal of schemes that are dependent upon transformational growth forecasts. Further Freight work will be addressed within the second phase of Strategic Development Corridor work (SDC2).

## 7 Strategic Dimension Summary

- 7.1 This dimension sets out the clear case for the strategic importance and necessity of the proposed programme of rail interventions in the North. It is necessary to be ambitious to meet DfT and TfN's objectives and support the region's as well as Britain's future prosperity by investing in a modern and reliable rail network that will help to re-balance the British economy, improve overall regional productivity and leading to overall more sustainable economic development.
- 7.2 The strategic dimension has clearly outlined the strategic needs of the North and how the proposed programme of interventions will add significantly more value than the Reference Case. It was shown that only by moving forward with these additional investments and projects, transformational growth can be achieved which will benefit not only the North of England but also the wider competitiveness of the UK.
- 7.3 This document has also demonstrated the close alignment of the proposed programme of interventions with national, regional and local policies. The strategic dimension has also discussed in detail the transport challenges and economic opportunities of the North's rail network. Challenges include:
- Door-to-door journey times for public transport commuting into the North's economic centres limits the size of the labour pool (for businesses) and reduces the number of employment, education and training opportunities within reasonable travelling time (for individuals).
  - The reliability and punctuality of services causes a perception that rail services cannot be relied on for commuting, business and other journeys
  - The rail 'offer' between the North and centres elsewhere in the country can often be unattractive, presenting a barrier to both business and leisure travel by rail.



- The rail 'offer' for business to business trips between the North's economic centres can be unattractive, reducing firms' supplier and customer bases which may limit clustering and specialisation.
- Door-to-door journey times to/from major tourist destinations reduces the attractiveness of public transport for leisure travel relative to car, and can limit destination options for those without access to a car.
- Journey times and network capability and capacity to/from the North's international gateways reduces the attractiveness of rail freight.
- Integration between the rail network and other modes can be unattractive and can present a barrier to more environmentally friendly, multi-modal travel.
- The railway serving rural and economically-deprived areas of the North does not deliver its potential to help meeting their economic and social needs.
- The railway cannot react flexibly and respond quickly to changes in demand .

7.4 In a following step, the Option Assessment Process was described in detail to allow a transparent review of how the numerous interventions were scored and identified as priority actions. Additionally, the wider context outlining the programme's delivery constraints, interdependencies with other implemented or planned projects as well as wider stakeholder needs and views is provided to reflect the bigger picture with regards to the ease of implementation, its relation to other projects and the wider public opinion.

7.5 In addition to the strategic assessment of the proposed programme of rail interventions, more detailed information on economic, financial, commercial and management implications are required to demonstrate an informed and comprehensive case. The next section outlines the economic dimension demonstrating the value for money of the proposed programme of interventions.

## Economic Dimension

The focus of the Economic Dimension is demonstrating that the proposed package represents Value for Money to the UK as a whole, in that:

- It is a justified public sector intervention, with positive impacts outweighing costs and negative impacts
- A process of refinement has been undertaken, working towards a programme which represents the strongest option

## 8 Overview and Summary of the Passenger Rail SPOC

### Background

- 8.1 The Economic dimension sets out the approach taken to quantifying benefits and costs as part of the assessment, and also provides qualitative assessments of impacts which cannot be quantified at this stage of assessment.
- 8.2 It is to be noted that this economic dimension is a summary of that presented in the Passenger Rail SPOC (October 2019). The same number of interventions have been appraised as per the previous version of the Passenger Rail SPOC (March 2019) and no new interventions from this West Coast – Sheffield City Region SDC have been added to the appraisal. This economic dimension also retains the same methodology, assumptions and results as the Passenger Rail SPOC (October 2019).
- 8.3 The evidence-led process which led to the identification of a programme of rail interventions for the SDCs is described within the Strategic dimension of this SPOC. The programme combines rail interventions of differing scales and delivery programmes, with beneficial outcomes to individuals and organisations within and beyond the SDC area.
- 8.4 The economic case concludes with a Value for Money (VFM) assessment which draws together the quantified and qualitative factors, the latter including consideration of the programme's alignment with DfT and TfN strategic objectives as set out in Figure 2-1 and Table 2-1 respectively. These matters will be combined with a consideration of strengths and limitations in the level of analysis at SPOC stage, to determine a Vfm category for the programme.
- 8.5 The economic appraisal has followed the TfN assurance process which includes:
- TAG Meetings - to agree the appraisal process with partners; (which for the West Coast – Sheffield City Region SDC have been combined with the Project Board meetings); and

- Technical Assurance 'deep dive' sessions to ensure that the appraisal outputs are robustly checked.
- 8.6 The level of appraisal and assurance undertaken is considered to be greater than what would normally be expected for this phase of work.
- 8.7 The appraisal is documented in detail in the following supporting documents:
- Transport Forecasting and Economic Assessment Report;
  - Appraisal Specification Reports (ASR) (for each corridor SDC);
  - Appraisal Summary Tables (AST)

### **Rationale for Investment**

- 8.8 The appraisal will demonstrate that further investment is required above the reference case in order to achieve growth. The current case is built upon the growth estimates produced from EDGE only. Transformational growth would generate a larger demand and greater benefits. However, transformational growth scenarios have not been assessed at this stage.

### **Approach to Value for Money Appraisal**

- 8.9 The VfM appraisal of the Rail SDC Programme has been undertaken with reference to DfT's Transport Appraisal Guidance (WebTAG) for May 2018. Unless stated otherwise monetised impacts within the Economic dimension are presented in 2010 GDP Deflator Real Market Prices discounted to 2010 present values, as specified by WebTAG. The WebTAG version used here is no longer the current version, but it is the version used for the previous SDCs to remain consistent with the whole series of studies.
- 8.10 The proportionate approach to the VfM appraisal of the SDC Programme was set out in the Stage 1 Appraisal Specification Report (ASR) for the studies. The ASR set out how the economic, environmental and operational assessments for the project would be undertaken, and how they would be supported by traffic modelling, whilst taking into consideration budgetary, programme, political, environmental and spatial constraints. It is noted that the approach evolved over the course of the study (as is to be expected); nonetheless the ASR remains a useful reference document in support of this SPOC.
- 8.11 Passenger rail interventions, which in many cases have impacts which are not contained within the corridor boundaries, have been represented in this separate exercise for all SDC corridors combined. Similarly, the highway and rail freight impacts, which are UK-wide, have been separately represented. Changes in travel times and costs resulting from these wider interventions, have been included within the Reference Case for the highway intervention forecasts, to limit the potential double counting of their impacts. Results from the separate analyses are brought together within the VfM statement.

- 8.12 The demand and economic benefits forecasting for the programmes of interventions is prudently based on forecast matrices generated using the DfT's Exogenous Demand Growth Estimator (EDGE). In contrast, the option identification and selection process was based on the assumption that the transformational economic growth identified in NPIER was achieved. On balance, TfN considers the constructed case to be more credible with lower demand growth and less uncertainty, than the alternative with transformational growth at this stage of development. TfN will assess transformational impacts in further business case development using its Analytical Framework.
- 8.13 Accordingly, the forecast demand and economic benefits presented in this Economic dimension considers only at this stage those interventions that have both a strong strategic case and are supported by the EDGE-based model outputs.
- 8.14 Table 8-1 below lists the final strategic outline programme of rail interventions that have been appraised at this very early stage of programme development for all the SDCs, alongside those interventions that have a strong strategic case but are not adequately represented by the NoRMS modelling suite and/or the forecast growth matrices used for the study, and which therefore require further development and analysis. TfN are further developing the Analytical Framework to facilitate improved appraisal of the Appraised and Non-Appraised schemes and plan to progress further work on a northern level economic dimension for road and rail interventions in 2019/20. The distribution of the appraised schemes is illustrated in Figure 8-1.

**Table 8-1: Rail interventions appraised within the Passenger Rail SPOC Economic Dimension**

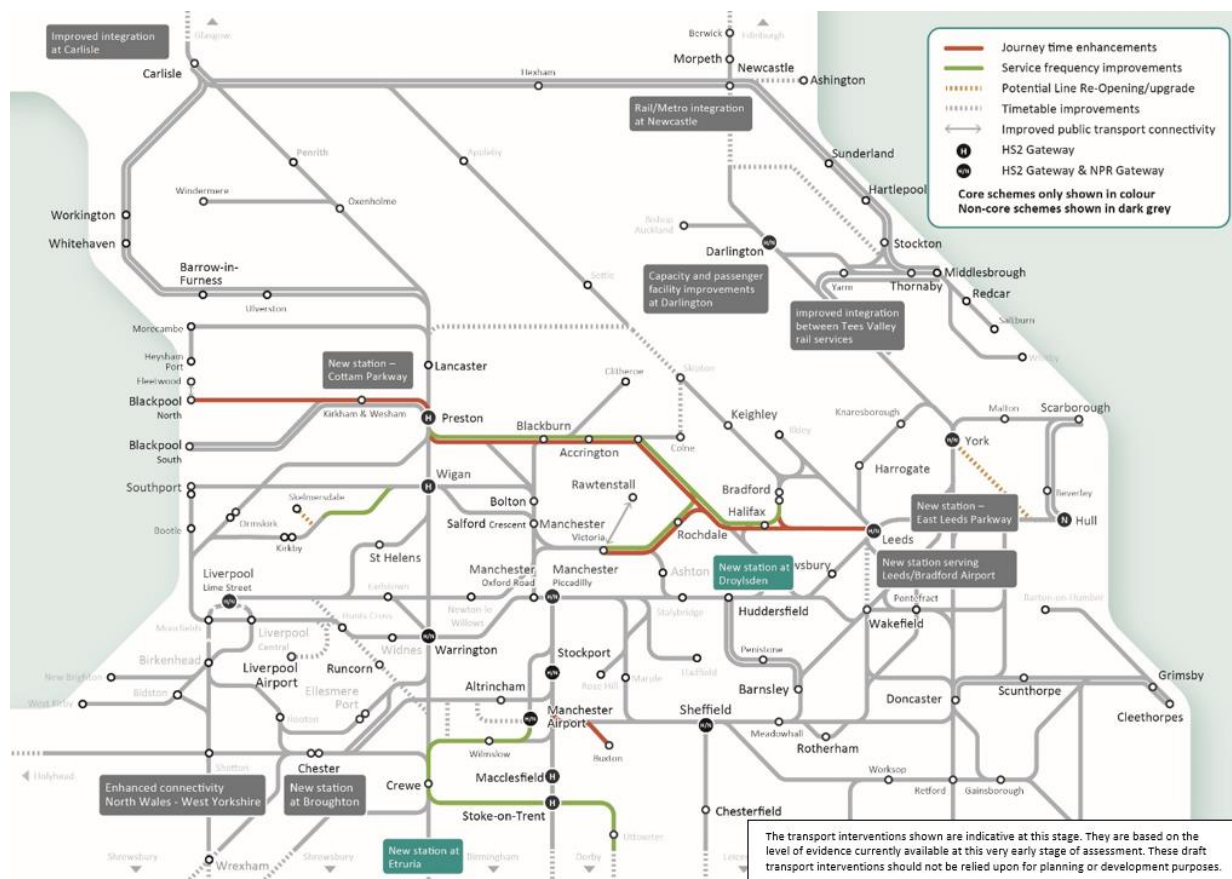
<b>Rail Interventions Appraised within the Economic Dimension</b>
<ul style="list-style-type: none"> <li>• Journey time improvements Preston to Blackpool North</li> <li>• Skelmersdale rail link</li> <li>• East Lancashire Line (journey time and capacity improvements)</li> <li>• Burnley to Manchester journey time and service improvements</li> <li>• Preston to York (journey time improvements)</li> <li>• Crewe – Stoke - Derby (journey time improvements)</li> <li>• Extension of North Staffordshire services to Nottingham and Manchester Airport</li> <li>• Manchester – Skelmersdale (via Wigan) service frequency enhancement</li> <li>• New stations at Droylsden/Littlemoss (Eastern Gateway) and Stoke park and ride</li> <li>• Buxton Line (journey time improvements)</li> </ul>
<b>Rail Interventions Not Appraised within the Economic Dimension at this stage</b>
<ul style="list-style-type: none"> <li>• <b>Lancaster – Morecambe (capacity improvements)</b></li> <li>• <b>Crewe to Preston (capacity improvements)</b></li> <li>• <b>Borders Railway extension</b></li> <li>• <b>West Coast Main Line freight capacity enhancements and better accommodation of freight</b></li> <li>• South Fylde Line (journey time and capacity improvements)</li> <li>• Service frequency enhancements between Ormskirk and Preston</li> <li>• Liverpool to Preston (journey time and service improvements)</li> <li>• Southport to Wigan (journey time improvements)</li> </ul>



- Colne to Accrington (journey time and service improvements)
- York to East Coast journey time improvement
- Skipton – Colne reopening
- Bradford to Leeds (journey time improvements)
- Harrogate Line (journey time improvements) and Harrogate – Skelton Junction
- Blackburn to Manchester Victoria (journey time improvements)
- Rossendale to Manchester public transport connectivity
- New stations at LBA Parkway, East Leeds Parkway and Cottam Parkway
- Rapid transit link between Liverpool South Parkway station and LJLA Airport
- York to Hull (service improvements)
- Hull to Scarborough (journey time and frequency improvements)
- Cumbrian Coast Line – journey time and capacity improvements
- Whitehaven to Newcastle (frequency improvements)
- Furness Line – Journey time and reliability improvements
- Windermere and Barrow to Manchester Airport (frequency and journey time improvements)
- Windermere to West Yorkshire (service improvements)
- Tyne Valley Line – route upgrade and service improvements
- Durham Coast Line – route upgrade and service improvements
- Middlesbrough Station
- Darlington Station Growth Hub
- Sunderland Station and Sunderland Station track layout improvements
- Northallerton - Newcastle capacity enhancements and timetable resilience
- Newcastle Station including platform lengthening
- Middlesbrough to York journey time and service improvements
- Bishop Auckland to Saltburn Line journey time improvements
- Increased service calls at Hartford and other WCML stations
- Mid-Cheshire Line (journey time and capacity improvements)
- Northwich to Sandbach reopening and new stations
- Knutsford to Manchester Airport (Western Link connection)
- Extension of Leeds – Chester service to Llandudno Junction
- New station at Broughton
- Preston/Bolton to Sheffield (direct connectivity/journey time improvements)
- Rail connection and station for Doncaster Sheffield Airport
- New station between Barnetby and Habrough
- South TransPennine Line – journey time and capacity improvements between Doncaster and Cleethorpes
- Sheffield to Lincoln (journey time improvements and service frequency enhancements)
- Penistone Line (journey time improvements and service frequency enhancements)
- Hallam Line (journey time improvements)
- Barnsley – Doncaster direct services
- Sheffield – Nottingham (journey time improvements)
- Stockport Station (later phases)
- Warrington Bank Quay (or integrated Station at Warrington)
- Wigan North Western (or integrated Station at Wigan)
- Gauge enhancements and journey time improvements between Selby and Port of Hull
- Port of Liverpool to West Coast Main Line enhancements
- West Coast Main Line freight capacity enhancements
- Port Salford rail freight access
- Freight prioritised gauge cleared route across the Pennines
- CLC line (Capacity and Service Improvements)
- Chester station - passenger & track capacity enhancements
- Enhanced public transport links to Fleetwood
- Continued programme of work to develop the capacity and capability of the rail network in the Leeds City Region
- East Coast Main Line spur to Newcastle Airport
- Heavy rail capacity and journey time improvement in the South Manchester area in addition to the Bus Rapid Transit Schemes connecting Wigan Borough and Salford City

- Birchwood park and ride
- East Coast Main Line journey time and reliability improvements to address known issues on the route
- York – Newcastle improvements to existing ECML to make best use of IEP trains
- Doncaster – Leeds capacity improvements
- Doncaster Station remodelling to reduce conflicts

**Figure 8-1: Passenger Rail SDC appraised schemes**



## Distributional Impacts

8.15 Distributional Impacts (DI) consider the variance of transport intervention impacts across different social groups. DfT guidance on Distributional Impact Appraisal<sup>70</sup> identifies the eight indicators where DI may apply, beneficially or adversely: user benefits, noise, air quality, accidents, security, severance, accessibility and personal affordability. The DI appraisal methodology adopted is outlined further in the Passenger Rail SPOC.

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[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/638644/TAG\\_unit\\_a4.2\\_distrib\\_imp\\_app\\_dec2015.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/638644/TAG_unit_a4.2_distrib_imp_app_dec2015.pdf) (December 2015)

## Structure of Economic Dimension

- 8.16 The remainder of the Economic Dimension of this SPOC is structured as follows:
- Chapter 9 describes the approach to costing interventions, including the treatment of optimism bias, and summarises the overall cost of the programme
  - Chapter 10 outlines the approach to quantifying the impacts of the programme, including the forecasting of demand impacts and the processes of economic appraisal
  - Chapters 11 to 14 follow the format of DfT's Appraisal Summary Table introducing the SDC Programme's: **Economy** impacts (11); **Environment** impacts (12); **Social** impacts (13); and **Public Accounts** impacts (14)
  - Chapter 15 brings the various impacts together, with a consideration of the robustness of the analyses completed, as a **Value for Money** statement for the programme

## 9 Approach to Costing Interventions

- 9.1 The approach adopted to derive the implementation costs of delivering the Rail SDC programme and the lifecycle costs, comprising maintenance and renewals costs) for the interventions delivered is provided in the Passenger Rail SPOC.

### Implementation Costs

- 9.2 The Rail SDC economic appraisal considers the capital cost of the SOP programme itself, together with any changes in the capital cost of maintenance and renewals in future years. Only those schemes presented in Table 8-1 are considered within this economic appraisal.
- 9.3 For the economic appraisal of the Rail SDC, all monetary units are presented in 2010 discounted market prices.
- 9.4 It should be noted that the costs used in economic appraisal differ from the outturn costs used for funding decisions and to those presented within the Financial Case. For the economic appraisal of the Passenger Rail SDC, all monetary units are presented in 2010 discounted market prices.
- 9.5 Base costs for the interventions in the Passenger Rail SOP were compiled based on unit rates derived from outturn cost data for a number of recent rail schemes. This includes published information on completed and planned schemes and internal data held by TfN's consultants.
- 9.6 Given the early stage of scheme definition, and the volume of interventions within the Passenger Rail SOP, the unit rates and subsequent costings are not based on any assumption as to the existing infrastructure constraints or the engineering works which may be required to relieve them.

- 9.7 These two sources of costs provide values scheme base costs, which have been treated as 2018 prices. The process to convert of 2018 scheme base costs to 2010 discounted market prices to be used in appraisal is presented within. Further details are provided below and in the Economic Assessment Report.

### **Lifecycle Costs**

- 9.8 Given the early stage of scheme development, a full assessment of expected maintenance and renewal costs has not been undertaken. For the purposes of the economic appraisal, maintenance and renewal costs equivalent to 10% of the PV of total capital costs has been included.
- 9.9 These costs have been assumed to all be incurred within the single year of 2035.
- 9.10 At this stage of assessment, an assumption has been made that any increase in operating cost (through fuel consumption, staffing costs, vehicle maintenance etc) will be offset by an increase in revenue generated. The net impact to subsidy has therefore assumed to be nil. A more detailed understanding of revenue and operating cost impact will be undertaken as interventions are further developed to SOBC stage and beyond.

### **Cost Risk and Uncertainty**

- 9.11 Given the early stage of cost development, which is based on only a high-level understanding of the engineering interventions required to deliver the desired outputs, allowances for further development (20%) and risk (25%) have been applied to the base year costs.
- 9.12 Given that an allowance for risk has been applied to the costs, the 64% Optimism Bias recommended by WebTAG for Conventional Rail schemes at Stage 1 of scheme development has been reduced to 31% - in order to retain an overall base cost adjustment of 64%.
- 9.13 The SDC programme cost estimate is based upon the assumption that the full package of measures associated with the programme will be delivered by 2035. At this stage of scheme development, it has been assumed that all costs will be incurred in the single year of 2034. Costs are set out in Table 22 of this Passenger Rail SPOC.

## **10 Quantified SDC Programme Impacts**

### **Introduction**

- 10.1 This chapter summarises the quantification of the impacts of the Passenger Rail SDC programme including the approach to and results of the demand forecasting undertaken and of the monetised Economic Appraisal. It describes how the transport models used to represent the impacts of the Reference Case and SDC Programme fit within TfN's wider analytical framework.

- 10.2 The modelling undertaken to represent the impact of the Passenger Rail SOP considers only endogenous change to the rail network and background growth. It does not reflect the impact of changes to the highway network proposed as part of the individual SDC corridor SOPs. As TfN's analytical framework develops, a detailed understanding of how changes to highway connectivity and capacity impact on the rail market will be developed.

### **Approach to Demand Forecasting**

- 10.3 Rail passenger forecasting was undertaken using the NoRMS Phase 2 model, which is a Cube-based rail assignment model of the North of England, including all rail stations. Further information on the demand forecasting approach is contained within the Passenger Rail SPOC (October 2019).

### **Freight and Logistics Modelling**

- 10.4 The Freight and Logistics Market is modelled using the Great Britain Freight Model managed and owned by MDS Transmodal (MDST). The inputs to the model come from standard DfT statistics for Ports and Maritime, road data collected through the Continuing Survey of Roads Goods Transport (CSRGT) and private sector intelligence. MDST also utilise Network Rail data which although highly sensitive, is presented in such a way so individual rail flows cannot be identified.
- 10.5 It should be noted that the impact of accommodating additional freight traffic on the rail network has not been considered as part of this West Coast – Sheffield City Region Rail SPOC and will be assessed as part of future phases of work in SDC2.

### **Approach to Economic Appraisal**

- 10.6 The economic assessment evaluates the monetised costs and benefits of the proposed SDC programme relative to the reference case scenario. At this stage of the study, only level one benefits have been assessed. The Economic Appraisal approach has been agreed through TAG and SMG and follows WebTAG guidelines. Further details on the approach to economic appraisal is contained within the Passenger Rail SPOC.

### **Scope of Economic Appraisal**

- 10.7 The scope of Economic Appraisal has been agreed through TAG and SMG and seeks to provide a robust, yet proportionate, appraisal of the Passenger Rail SOP given the current stage of scheme development. This is in line with WebTAG guidelines and TAG has agreed this approach.
- 10.8 As presented in Section 15, the overall Value for Money of the Passenger Rail SOP will be determined through a consideration of both monetised and non-monetised benefits which fall across the three levels of benefits detailed in preceding section.
- 10.9 For clarity as to the scope of economic appraisal, Table 10-1 sets out the monetised and non-monetised assessments undertaken across the three level of benefits.

**Table 10-1: Scope of Economic Assessment for West Coast – Sheffield City Region SDC SOP**

	<b>Established Monetised Impacts</b>	<b>Evolving Monetised Impacts</b>	<b>Indicative Monetised Impacts</b>	<b>Non-Monetised Impacts</b>
	<i>Included in initial and adjusted metrics</i>	<i>Included in adjusted metric</i>	<i>Considered after metric using switching values approach</i>	
<b>Level</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>Qualitative</b>
<b>Included in appraisal at this stage</b>	Journey time savings Vehicle operating costs Greenhouse gases Cost to Broad Transport Budget Indirect Tax Noise Air Quality Accidents			Regeneration Landscape Townscape Historic environment Biodiversity Water environment Affordability
<b>Not included in appraisal</b>	Physical activity Journey quality	Reliability Static clustering Output in imperfectly competitive markets Labour supply	Move to more / less productive jobs Dynamic clustering Induced investment Supplementary economy modelling	Security Severance Access to services Option and non-use values

## Forecast Impact of the SDC Programme

- 10.10 The forecast impact of the Passenger Rail SDC programme is set out in Table 10-2 below. The table demonstrates the increases in total trips, boardings, total distance (for both passengers and vehicles) and the total value of generalised cost savings in passenger hours relative to the Reference Case.



**Table 10-2: Impact of the Passenger Rail SDC Programme (Daily values, 2050)**

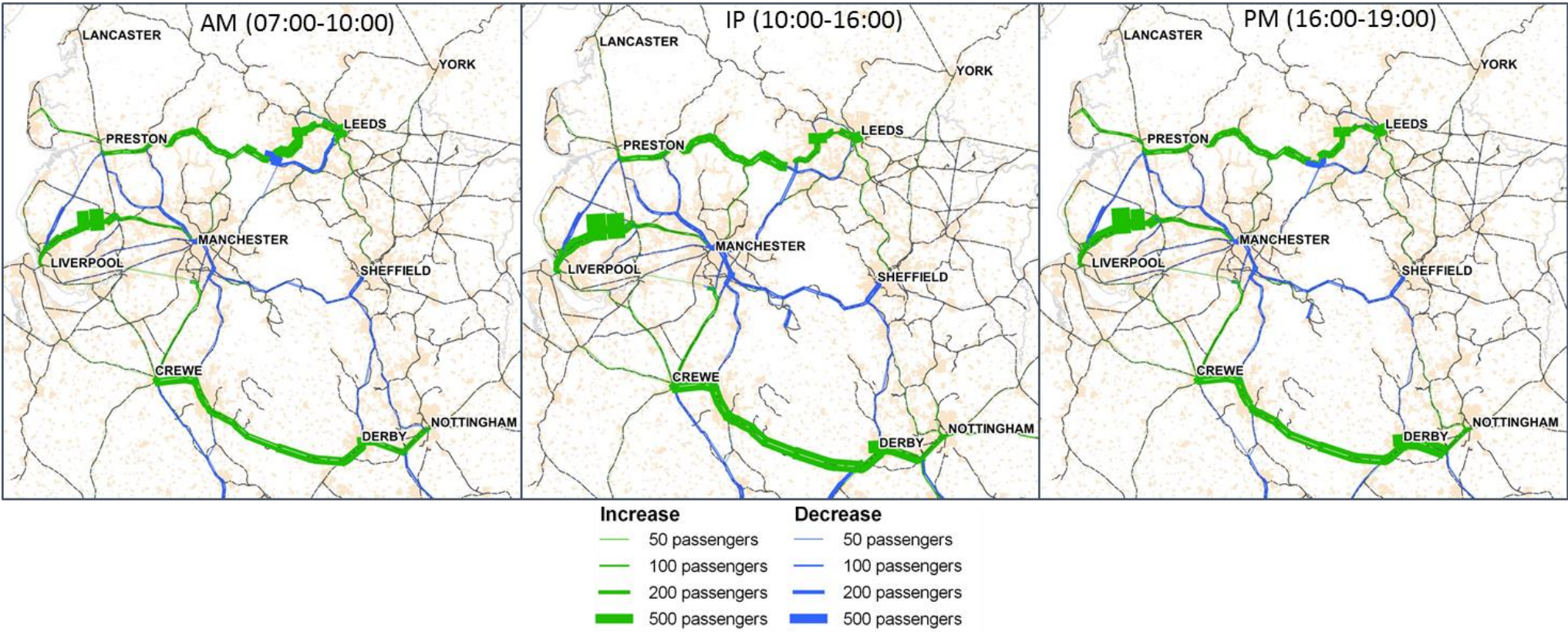
	Reference Case	Appraised SOP Schemes	Difference
Total trips	934,947	939,471	4,523 (0.48%)
Total boardings	1,300,235 (1.39 per trip)	1,307,178 (1.39 per trip)	6,943 (0.53%)
Total distance (passenger-km)	68,144,081 (72.9 per trip)	68,292,391 (72.7 per trip)	148,309 (0.22%)
Total on-train time (passenger-hours)	637,788 (40.9 mins per trip)	638,253 (40.8 mins per trip)	464 (0.07%)
Total distance (vehicle-km)	537,812	546,413	8,601 (1.60%)
Total running time (vehicle-hours)	6,373	6,478	105 (1.64%)
Total generalised cost saving (passenger-hours)	2,713,000	2,721,000	7,301 (0.3%)

10.11 The forecast impact on demand is shown in Figure 10-1. Demand increases are observed:

- between Preston and Leeds, reflecting the journey time improvements and service frequency enhancements on the routes between Preston, east Lancashire, West Yorkshire and Greater Manchester in the SOP;
- between Crewe and Derby, reflecting journey time improvements and service frequency enhancements between Manchester Airport, Crewe, Stoke-on-Trent and the East Midlands; and
- between Liverpool and Wigan (via Kirkby), reflecting the impact of the Skelmersdale link and associated service extensions from the Merseyrail network.

10.12 Some demand decreases are observed, particularly on key routes around Manchester (the Bolton, Diggle and Rochdale corridors, for example). This could be explained by the availability of faster direct journeys between certain station pairs, removing the need for passengers to interchange at Manchester stations.

Figure 10-1: Change in total daily demand by period

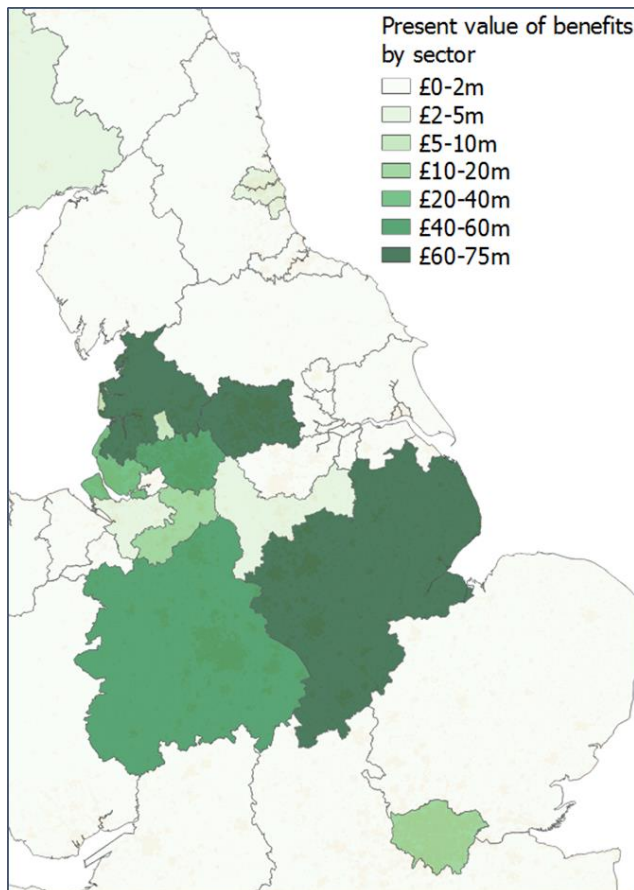






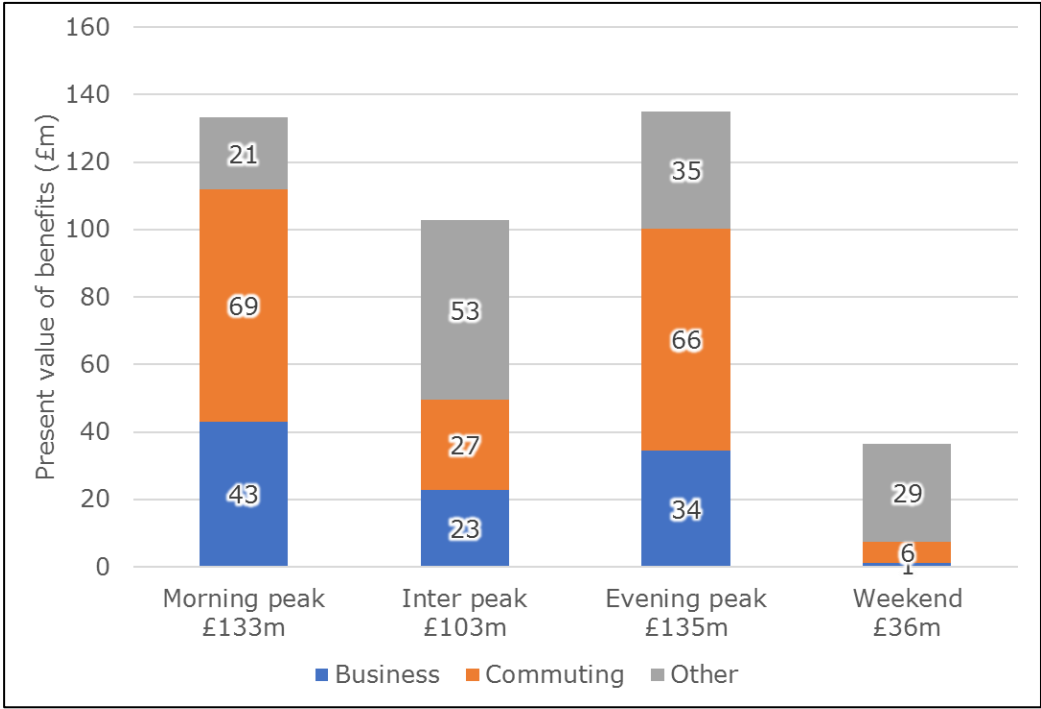
- 10.13 Figure 10-2 provides a spatial summary of the economic benefits (present values). The largest benefits are generated in Lancashire, West Yorkshire and the East Midlands, with strong benefits also generated in the Liverpool City Region, Greater Manchester and the West Midlands. Again, this aligns to the journey time and service frequency enhancements in the SOP.

**Figure 10-2: Distribution of benefits**



- 10.14 Figure 10-3 shows the distribution of user benefits by time period and journey purpose. The most significant benefits occur in the morning and evening peak periods, with commuters generating the most benefits by journey purpose.

**Figure 10-3: Distribution of benefits by time period and journey purpose**



# 11 Economy Impacts

## Introduction

- 11.1 Following the structure of DfT’s standard Appraisal Summary Table (AST), this chapter sets out the economic impacts on business users of the SDC Programme, including the Transport Economic Efficiency impacts which are represented within the Economic Appraisal. This chapter also contains a qualitative assessment of Regeneration and Wider Impacts. The impacts on non-business users (consumers) form part of the social impacts and are covered in chapter 13.
- 11.2 The impact of the Rail SDC programme on the Northern Economy is of particular importance to the VfM case presented in this SPOC given that it is based on identifying the interventions which will unlock delivery of the transformational growth set out within NPIER. However, as set out in paragraph 8.11 the economic appraisal is based on ‘business as usual’ growth as represented in DfT’s EDGE forecasting tool.

## Business Users & Transport Providers

- 11.3 A summary of the business user impact estimated by TUBA is set out in Table 11-1: below.

**Table 11-1: Business user impact**

<b>Business</b>	<b>All Modes</b>	<b>Road</b>	<b>Rail</b>
Travel time	£106,326	£4,657	£101,669
Vehicle operating costs			
<b>Subtotal</b>	<b>£106,326</b>	<b>£4,657</b>	<b>£101,669</b>

Note: All entries are present values discounted to 2010, in 2010 market prices (£000s)

- 11.4 The monetised impacts set out in the table arise from travel time savings for business users, enabled by the journey time improvements and service frequency enhancements in the Passenger Rail SOP. Although business users make up the smallest proportion of baseline demand, the monetised impacts are significant due to the higher value of time perceived by this user time. The road impacts arise from the Marginal External Cost calculations described in the Passenger Rail SPOC and represent the impact of highway decongestion following road users switching to rail. This element combines travel time and vehicle operating cost impacts.

### **Reliability Impact on Business Users**

- 11.5 The intended outcomes of the Passenger Rail SOP are focussed on improved connectivity. As such, interventions specifically designed to address any existing or projected future reliability issues have not been considered in this phase of work, and no quantified assessment of reliability impact has been made. The impact on reliability would be considered as part of the development of each individual scheme, with mitigations put in place as required. Therefore, overall reliability impact is considered to be neutral.

### **Regeneration**

- 11.6 The schemes included in the Passenger Rail SDC programme represent a substantial investment in transport provision across the corridor. However, the focus of the scheme is to improve “pan-Northern” strategic connectivity, rather than addressing local accessibility challenges with a view to unlocking development and consequent regeneration impacts. Thus, it is considered likely that the impact of the Passenger Rail SDC programme will be neutral.

### **Wider Impacts**

- 11.7 As described above, the interventions in the Passenger Rail SDC programme would be expected to generate wider impacts due to the effect of bringing businesses in key economic clusters ‘closer together’, thus making them more productive. However, as wider impacts have not been quantified as part of this phase of study, the impact of the programme is classified as slight beneficial. Analysis of wider impacts will be undertaken in later phases of the SDC studies.

## Summary

11.8 Table 11-2 below summarises the Economy impacts:

**Table 11-2 Summary of SDC Programme Economy Impacts**

Economy Impacts	
Business user benefits	£106,326
Reliability Impact	Neutral
Regeneration	Neutral
Wider Benefits (Level 2)	Slight Beneficial

Note: All entries are present values discounted to 2010, in 2010 market prices (£000s)

## 12 Environment Impacts

12.1 Following the structure of DfT's standard Appraisal Summary Table (AST), this chapter sets out the potential impacts to the environment of the Passenger Rail SDC Programme, particularly noting any dis-benefits that may occur. As this assessment has been undertaken at a pan-Northern level and only includes the impacts of shift from highway to passenger rail as a result of the Passenger Rail SOP, quantified impacts cannot be included within the individual corridor SPOC reports.

12.2 Table 12-1: below summarises the Environment assessment results. Further details of the assessment undertaken is provided in the Passenger Rail SPOC (October 2019):

**Table 12-1: Summary of Environment Impacts**

Environment Impacts	
Noise <i>MEC Derived Impact</i>	£426
Air Quality <i>MEC Derived Impact</i>	£32
Greenhouse Gases <i>MEC Derived Impact</i>	£1,504
Landscape	Slight adverse
Townscape	Slight adverse
Historic Environment	Slight adverse
Biodiversity	Slight adverse
Water Environment	Slight adverse

Note: All entries are present values discounted to 2010, in 2010 market prices (£000s)

## 13 Social Impacts

- 13.1 Following the structure of DfT's standard Appraisal Summary Table (AST), this chapter sets out the potential impacts to the social impacts of the SDC Programme, including the Transport Economic Efficiency impacts (Commuting and Other Users, Personal Affordability) which are represented within the Economic Appraisal. This chapter also contains qualitative assessments of a range of impact, with Access to Services, being of particular importance to the case for the rail interventions.
- 13.2 Table 13-1 below summarises the Social impacts assessment results. Reductions to vehicle operating costs as a result of highway decongestion have been presented as a combined total together with time saving benefits in the Commuting and Other users row. To avoid double counting, they have not been reported separately in the personal affordability row below. The impact of rail fares on affordability has not been included in the monetised assessment. Further details are provided in the Passenger Rail SPOC (October 2019):

**Table 13-1: Summary of Social Impacts**

Social Impacts	
Commuting and Other Users	<b>£354,811</b>
Reliability impact (Commuting & Other Users)	Not Assessed
Physical Activity	Not Assessed
Journey Quality	Not Assessed
Accidents <i>MEC Derived Impact</i>	£5,500
Security	Not Assessed
Access to Services	Not Assessed
Personal Affordability	See Commuting and Other Users
Severance	Not Assessed
Option and Non-use values	Not Assessed

Note: All entries are present values discounted to 2010, in 2010 market prices (£000s)

## 14 Public Accounts Impacts

### Introduction

- 14.1 This chapter outlines the impact of the Rail SDC programme on public accounts. These form the derivation of two key outputs described below:

the impact on the Broad Transport Budget (which forms the cost represented within the Benefit Cost Ratio, BCR), and the indirect taxation impact on Wider Public Finances (HM Treasury, represented as an adjustment to the benefits within the BCR).

## Cost to Broad Transport Budget

- 14.2 As set out within the Financial Dimension and Chapter 9, the construction, maintenance and renewal costs associated with the Passenger Rail SOP have been derived through a cost estimation process, with reference to recent outturn project costs and in consultation with TfN partners.
- 14.3 For the Passenger Rail SOP, all Investment Costs have been assumed to be incurred in 2034, with all Operating Costs assumed to be incurred in 2035. No profiling of either Investment Costs or Operating Costs has been assumed within the economic appraisal.
- 14.4 With reference to the process set out in Chapter 9, Table 14-1 presents the Passenger Rail SOP scheme costs in the format of the DfT's CPSS Cost Proforma Summary Sheet. This shows the build-up of the scheme costs from 2018 Base Costs through to 2010 discounted market prices representing the SOP investment costs.

**Table 14-1: DfT's CPSS Cost Proforma Summary Sheet**

Item	£m	Factor	Unit
Base Cost	306		2018 prices
O&M Uplift (10%)	337		
Risk & Development (33%)	505		2018 prices
Inflation (4.2% p.a)	989	1.96	2018 prices inflated to 2034
GDP Deflator (1.65% p.a)	626	0.63	2010 prices
Market Prices (19%)	744	1.19	2010 market prices
Optimism Bias (31%)	975		
Discounting (3.5% p.a)	424	0.43	2010 discounted market prices
<b>PVC</b>	<b>424</b>		<b>2010 discounted market prices</b>

- 14.5 The forecast reduction in car passenger km under the Passenger Rail SOP will have a reduced impact on highway infrastructure costs, which accrue to Highways England and/or local government. These impacts have been monetised using the Marginal External Cost methodology described in the Passenger Rail SPOC (October 2019), and the results set out in Table 14-2 below.

**Table 14-2: Monetised infrastructure impacts**

	Total
Infrastructure	-£236

Note: All entries are present values discounted to 2010, in 2010 market prices (£000s)

## Indirect Tax Revenues

- 14.6 Implementation of transport interventions can result in a dual impact on HM Treasury tax receipts. The first effect results from changes in fuel consumption, from changes in travel distance and/or speed of mode shift to public transport, affecting the fuel duty received by HM Treasury. Secondly, the shift in consumer (commuter and other) spending from the taxed economy into untaxed public transport fares results in a reduction in indirect taxation. An equivalent fares effect is not seen for business travellers as VAT on other expenditure is reclaimed by businesses, following assumptions laid out within DfT guidance.
- 14.7 Table 14-3 provides a summary of the Indirect Tax Revenues as estimated by the Marginal External Cost methodology, which in this case arise solely from loss of fuel tax as passengers change mode from highway to rail.

**Table 14-3: Indirect Tax Revenue Benefits**

Indirect Tax Revenues	ALL MODES
Wider Public Finances	£4,345

Note: All entries are present values discounted to 2010, in 2010 market prices (£000s)



## Summary

- 14.8 The relevant impacts are summarised in the form of standard DfT 'Public Accounts' tables for the SDC Programme (Table 14-4:) under EDGE estimated growth.

**Table 14-4: Public Accounts Table for the SDC Programme (£000s)**

	ALL MODES
Local Government Funding	TOTAL
Revenue	0
Operating Costs	0
Investment Costs	0
Developer and Other Contributions	0
Grant/Subsidy Payments	0
<b>NET IMPACT</b>	<b>0</b>
<b>Central Government Funding: Transport</b>	
Revenue	0
Operating Costs	0
Investment Costs	423,876
Developer and Other Contributions	0
Grant/Subsidy Payments	0
<b>NET IMPACT</b>	<b>423,876</b>
<b>Central Government Funding: Non-Transport</b>	
Indirect Tax Revenues	4,345
<b>TOTALS</b>	
<b>Broad Transport Budget</b>	<b>423,876</b>
<b>Wider Public Finances</b>	<b>4,345</b>

## 15 Value for Money

### Introduction

- 15.1 A VfM appraisal of the Passenger Rail SOP has been undertaken with reference to DfT's Transport Appraisal Guidance at May 2018. The WebTAG version of May 2018 used here is no longer the current version, but it is the version used for the previous SDCs to remain consistent with the whole series of studies.
- 15.2 This chapter brings together the economic appraisal results presented in the preceding sections and considers their inherent uncertainty, other quantified and qualitative impacts, and distributional impacts. The Value for Money (VfM) assessment summarises the monetised and non-monetised impacts of the appraised corridor interventions with; highways, passenger rail and road & rail freight considered separately.
- 15.3 The chapter concludes by summarising the next steps for appraising the programme level impacts.

### Economic Appraisal

- 15.4 Monetised analyses from the Economic (chapter 11), Environmental (chapter 12), Social (chapter 13) and Public Accounts (chapter 14) impacts set out in this SPOC come together as the Economic Appraisal of the SDC Programme. DfT's BCR represents the ratio:

net-non-transport-budget impacts : net-transport-budget impacts

The latter being represented by the cost to broad transport budget from chapter 14 and the former by the sum of all other impacts, as set out in the following text. DfT's second VfM indicator is the Net Present Value (NPV); the sum of all monetised impacts.

### Transport Economic Efficiency

The travel time, cost and financial impacts on consumers and the private sector are summarised in the form of standard DfT 'Transport Economic Efficiency' (TEE) tables for the SDC Programme (

- 15.5 Table 15-1) under EDGE-estimated growth. This table combines the impacts on *Commuting and Other Users* (Social impacts) and on Business Users and Transport Providers (Economic impacts).

**Table 15-1: TEE Table for the SDC Programme (EDGE-estimated Growth Scenario, £000s)**

<b>Non-business: Commuting</b>		
<i><b>User benefits</b></i>		
	Travel Time	176,873
	Vehicle operating costs	
	User charges	0
	During Construction & Maintenance	0
<b>NET NON-BUSINESS BENEFITS: COMMUTING</b>		<b>176,873</b>

<b>Non-business: Other</b>		
<i><b>User benefits</b></i>		
	Travel time	177,938
	Vehicle operating costs	
	User charges	0
	During Construction & Maintenance	0
<b>NET NON-BUSINESS BENEFITS: OTHER</b>		<b>177,938</b>

<b>Business</b>		
<i><b>User benefits</b></i>		
	Travel time	106,326
	Vehicle operating costs	
	User charges	0
	During Construction & Maintenance	0
	<b>Subtotal</b>	<b>106,326</b>
<i><b>Local Authority provider impacts</b></i>		
	Revenue (toll charges)	0
	Operating costs	0
	Investment costs	0
	Grant/subsidy	0
	<b>Subtotal</b>	<b>0</b>
<i><b>Other business impacts</b></i>		
	Developer contributions	0
<b>NET BUSINESS IMPACT</b>		<b>106,326</b>

<b>TOTAL</b>	
Present Value of Transport Economic Efficiency Benefits (TEE)	<b>461,137</b>

### Initial DfT Economic Appraisal

- 15.6 A standard DfT 'Analysis of Monetised Costs and Benefits' (AMCB) table is presented below for the SDC Programme (Table 15-2) under EDGE growth. The AMCB table illustrates the calculation of the initial (Level 1) BCR:

- The Present Value of Benefits (PVB) equals:

TEE Impacts (from

- Table 15-1)
- Monetised Environmental Impacts (Greenhouse Gases, Noise and Air Quality from Table 12-1)
- Other Monetised Social Impacts
- Indirect Tax Revenues (from Table 14-3:)
- The Present Value of Costs (PVC) equals:
  - Cost to Broad Transport Budget (from Table 14-4)

**Table 15-2: AMCB Table for the SDC Programme (£000s)**

Noise	426
Local Air Quality	32
Greenhouse Gases	1,504
Journey Quality	Not Monetised
Physical Quality	Not Monetised
Accidents	5,500
Economic Efficiency: Consumer Users (Commuting)	176,873
Economic Efficiency: Consumer Users (Other)	177,938
Economic Efficiency: Business Users and Providers	106,326
Wider Public Finances (Indirect Taxation Revenues)	-4,345
<b>Present Value of Benefits (PVB)</b>	<b>464,253</b>

<b>Present Value of Costs (PVC)</b>	<b>423,876</b>
-------------------------------------	----------------

<b>OVERALL IMPACTS</b>	
<b>Net Present Value (NPV)</b>	<b>40,377</b>
<b>Benefit to Cost Ratio (BCR)</b>	<b>1.10</b>

Note: All entries are present values discounted to 2010, in 2010 market prices (£000s)

## Appraisal Summary Table

- 15.7 An AST, which allows comparison of the impacts of the SDC programmes under different growth scenarios, is presented as Table 15-3.
- 15.8 DfT standard ASTs include a summary justification for the scoring of each impact.

**Table 15-3: Comparative Appraisal Summary Table**

Economy Impacts	
Business user benefits	106,326
Reliability impacts on business users	Not assessed
Regeneration	Neutral
Wider Benefits (Level 2)	Slight Beneficial
Environment Impacts	
Noise	426
Air Quality	32
Greenhouse Gases <i>Monetised Impact from TUBA</i>	1,504
Landscape	Slight Adverse
Townscape	Slight Adverse
Historic Environment	Slight Adverse
Biodiversity	Slight Adverse
Water Environment	Slight Adverse
Social Impacts	
Commuting and Other Users	354,811
Reliability impact (Commuting & Other Users)	Not Assessed
Physical Activity	Not Assessed
Journey Quality	Not Assessed
Accidents <i>MEC Derived Impact</i>	5,500
Security	Not Assessed following DI screening
Access to Services	Not Assessed
Personal Affordability	See Commuters and Other Users
Severance	Not Assessed following DI screening
Option and Non-use values	Not Assessed

Note: All entries are present values discounted to 2010, in 2010 market prices (£000s)

## Value for Money Statement

- 15.9 The economic dimension includes the approach to costing interventions, including the treatment of optimism bias, and a summary of the overall cost of the programme, the approach to quantifying the impacts of the programme, including the forecasting of demand impacts and the processes of economic appraisal. DfT's Appraisal Summary Table format is used to show the SDC Programme's Economy, Environment, Social and Public Accounts impacts. The economic dimension concludes with a Value for Money (VfM) assessment which draws together the quantified and qualitative factors, the latter including consideration of the programme's alignment with DfT and TfN strategic objectives. It should be noted that for the West Coast – Sheffield City Region SDC (and the East Coast-Scotland SDC), all the rail interventions are included in the non-appraised programme costs category, consequently the VfM Assessment is the same as reported in the Passenger Rail SPOC (March 2019).

**Table 15-4: Summary of rail appraisal**

Value for Money Assessment		
<b>Established Monetised Impacts (journey times/operating costs):</b>		
Established Monetised Impacts	Net Cost to the Transport Budget	Initial Ratio of Benefits to Costs
£464m	£424m	1.10
Initial Value for Money Category		Low
<b>Evolving Monetised Impacts (plus wider economic impacts/reliability):</b>		
Established + Evolving Monetised Impacts	Net Cost to the Transport Budget	Provisional Ratio of Benefits to Costs
Not Valued	Not Valued	1.10
<b>Provisional Value for Money Category</b>		Low
Non-monetised Impacts conclusion:		
<p>Alignment with Strategic Objectives:</p> <p>The Rail SOP has been developed around TfN's objectives to develop and enhance connectivity and accessibility in the North, whilst promoting sustainable growth. Interventions were defined in accordance with the Desirable Minimum Standards in the draft Long Term Rail Strategy, which have demonstratable alignment to the pan-Northern transport objectives</p>		



## Value for Money Assessment

set out in the STP. The SOP has been designed to improve rail connectivity across the North of England.

### Other Economy Impacts:

In addition to the monetised impacts above, the Passenger Rail SDC programme has been assessed as having slight beneficial wider economic impacts. While it is anticipated that investment in transport infrastructure will result in benefits to the North's economy, accelerating, maximising and more-widely distributing the transformational growth and benefits of the major infrastructure investment projects within the reference case, these wider impacts have not been assessed at this stage of the study.

### Other Environmental Impacts:

Impacts to local air quality, noise, and greenhouse gases have been monetised as part of the assessment of Established Monetised Impacts. Impacts to Landscape/Townscape, Historic Environment, Biodiversity and Water Environment have been assessed to be Slight Adverse, based on a high-level assessment at programme level, for which there is a significant level of uncertainty. Impacts are likely to be localised to the off-line schemes in the SOP, mitigated by design and offset by beneficial impacts.

### Other Social Impacts:

Impacts to accidents have been monetised as part of the assessment of Established Monetised Impacts. Other social impacts have not been assessed at this stage.

### Analytical Certainty:

Transport for the North's Technical Assurance Group (TAG) has reviewed and approved all methodologies employed within the Rail SDC economic appraisal and derivation of benefits. The approach to appraisal is based on WebTAG guidance, although the Reference Case includes large, uncommitted schemes, which is not WebTAG compliant but have been approved by TAG. Scheme costs have been derived through a cost estimation process, referencing recent scheme outturn costs. However, as these costs are not based on a detailed assessment of current infrastructure constraints, nor the engineering interventions required to overcome them, there is a high degree of uncertainty at this stage.

Nonetheless, the appraisal methodology is considered sound and reasonable for the stage of scheme development which the Rail SOP is currently at, and no adjustment is required to the Value for Money categorisation as a result.

### Non-monetised Impacts conclusion:

**Value for Money Assessment**

The non-monetised impacts are not expected to be sufficiently material to justify a category shift to the initial Value for Money category.

Adjusted Value for Money Category Low

- 15.10 Table 15-5: illustrates the likelihood scale for the Rail SOP VfM category. Whilst the adjusted VfM Category remains most likely, it is possible that this categorisation could be adjusted downwards, to Poor, or upwards, to Medium, as a result of greater certainty with regard to intervention capital costs. As described in the Analytical Certainty section of the VfM Assessment table above, the intervention costs were based on a process which is subject to a high degree of uncertainty, with the possibility that costs could be adjusted (in either direction) as individual schemes are examined in further detail as part of a further stage of development.

**Table 15-5: Likelihood scale for VfM categories**

Category	Poor	Low	Medium	High
Likelihood	Possible	Likely	Possible	Unlikely

## Next Steps

- 15.11 In the next year, TfN plan to update the Strategic Programme Outline Cases to inform an update of the Investment Programme. This will complete the remaining SDCs, to at least Options Assessment Appraisal stage and will be start work on reviewing the current SDCs and Investment Programme, including the sequencing of schemes based on evidence and appraisal. The next stage of modelling will include transformational NPIER forecasts and the latest spatial planning information.
- 15.12 The appraisal will move to a single assessment tool for the North, able to report at pan-Northern and corridor levels, so removing of the issues of double counting of benefits. This approach will also better incorporate the multi-modal impacts of passenger rail and freight.
- 15.13 The reference case assumptions will be updated, so reflect the latest plans for the schemes such as NPR and Trans-Pennine tunnel.
- 15.14 The initial work on the wider economic benefits (WITA) will be progressed, moving from Level 2 (static assessment) to Level 3 (dynamic assessment), and include the updates in WebTAG.
- 15.15 As more definitive scheme definitions emerge, scheme costings will be reviewed, and the environmental appraisal will adopt the more detailed WebTAG methodologies.

## Financial Dimension

The Financial Dimension of a business case sets out to demonstrate is to set out the impact of the proposal on public sector capital and revenue budgets.

### 16 Overview and Summary from Passenger Rail SPOC

- 16.1 The Financial Dimension sets out the approach to estimating implementation costs for the West Coast – Sheffield City Region SDC programme of interventions. 'Whole life' costs are estimated, including ongoing maintenance, periodic renewals and operating costs. These costs, converted into suitable appraisal values, form a key input into the cost benefit appraisal, described in the preceding Economic Dimension.
- 16.2 The programme-level cost estimating process is necessarily high-level at this time; combining interventions of different scales, natures and complexities. The approach taken has built-in consistency across the programme, effectively implicitly assuming reasonable balance in the variation above/below estimate. There are further advantages of programme delivery at this scale in respect of cost estimates; principally in terms of the ability to refine the programme as experience is accumulated and lessons are learnt, for example improving the efficiency of procurement and adjusting intervention delivery timings and specifications to maximise value for money.

#### **Approach to Financial Appraisal**

##### **Rail Intervention Costs**

- 16.3 A 'unit cost' based approach was adopted for rail schemes, with unit rates in this case based initially on publicly available data. For route improvements, unit rates per mile were derived for bands based on the journey time saving, as a proportion, identified. Costs for new or substantially upgraded intermediate stations were also derived. Network Rail and DfT Rail were consulted about these rates, the cost per intermediate station being increased as a result. No other amendments to the rates were suggested, or alternative evidence provided; it is therefore assumed that cost estimates based on these rates are appropriate for the current stage of delivery.

### **Freight Intervention Costs**

- 16.4 Freight intervention costs have not been developed at this very early stage of work<sup>71</sup>.

### **Inflation**

- 16.5 Convention for the Financial Dimension is to present costs in nominal terms (sometimes referred to as outturn or cash terms), that is inclusive of all inflation. Intervention cost estimates have been inflated to 2035 using BCIS cost inflation indices, for the purposes of the Economic Dimension - where interventions have been represented as being implemented in a single year. Further inflation has been applied to costs presented within this Financial Dimension, to represent in broad terms the anticipated phasing of intervention delivery.

### **Implementation Funding Requirement**

- 16.6 The illustrative Strategic Development Corridor funding requirement for appraised (within the economic appraisal) and non-appraised interventions is shown in

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<sup>71</sup> Other general highway intervention costs that would benefit road freight traffic are included within the highway cost assumptions

- 16.7 Table 16-1. The indicative costs which underline the funding requirements are based on high level benchmarked unit rate cost estimates appropriate to this early stage in the business case development cycle.
- 16.8 This represents an ambitious but realistic funding requirement for a programme of transport investment, building upon the reference case schemes, to be delivered over the period up to 2050.
- 16.9 Following the structure of the SPOC documentation, costs for highway interventions are provided for each of the separated SDC corridors, whereas passenger rail intervention costs are presented at a combined northern level. It is to be noted that for the West Coast – Sheffield City Region SDC, all the rail interventions are included in the non-appraised programme costs category.

**Table 16-1: Illustrative Funding Requirement (£m in 2017 prices)**

<b>SPOC</b>	<b>Appraised Programme</b>	<b>Non-Appraised Programme</b>	<b>Full Programme</b>
<b>Highway: Central Pennines</b>	£7,144	£334	£7,478
<b>Highway: Energy Coasts</b>	£2,158	£170	£2,328
<b>Highway: Southern Pennines</b>	£3,115	£583	£3,698
<b>Highway: West and Wales</b>	£3,281	£1,578	£4,859
<b>Highway: East Coast - Scotland</b>	£1,717	£653	£2,371
<b>Passenger Rail: North</b>	<b>£505</b>	<b>£6,991</b>	<b>£7,496</b>
<b>Sub-Total<sup>72</sup></b>	£15,682	£10,119	£25,801
<b>TfN Programme Level Contingency (5%)</b>			£1,290
<b>Total Base Cost (including programme contingency)</b>			£27,091
<b>Illustrative Funding Requirement (allowing for inflation)</b>	£40,000 to £50,000		

## Funding Arrangements

- 16.10 A key element set out in the STP will be how the infrastructure proposed by TfN, as set out in the Investment Programme (IP), will be funded over the period until 2050. TfN has therefore developed a Funding Framework that will form the basis of the funding section of the STP as well as informing the business cases for Northern Powerhouse Rail (NPR) and the interventions arising from the work on the SDCs.
- 16.11 The approach that TfN has adopted to the development of the Funding Framework has been grounded in the fundamental principles that were agreed by the Partnership Board in December 2016. KPMG was appointed in June 2017 to support TfN in this work.

<sup>72</sup> Double counting of interventions in more than one SDC removed.

- 16.12 Further details of TfN's Funding Framework is provided in the Passenger Rail SPOC (October 2019).

### **Operational Life Funding Requirement**

- 16.13 In addition to the implementation costs (above) cost benefit appraisal takes account of future costs for maintenance and renewal, for example the delivery of additional infrastructure may place additional liabilities on the public sector to keep it in operational condition.

### **Maintenance and Renewal**

- 16.14 A present value equivalent to 10% of the implementation costs, was made to represent passenger rail and freight intervention maintenance and renewal costs for consistency with highway schemes.

### **Operating Costs and Revenue**

- 16.15 A high-level estimate of rail operating costs was made based on changes in service km, noting that neither operating costs nor passenger revenues were included in the rail economic appraisal. This represents a prudent assumption, based on the constraint that revenue from any rail interventions must exceed service operating costs.

## Commercial Dimension

The Commercial Dimension of a business case sets out to demonstrate that the proposals are commercially viable, outlines the applicable procurement options and introduces the approach for engaging with the market.

### 17 Overview and Summary from Passenger Rail SPOC

- 17.1 The Commercial Dimension sets out the procurement strategy to engage the market and the proposed approach to risk allocation. Given the programme is at a relatively early stage, this Commercial Dimension seeks to further clarify Transport for the North's (TfN's) role in procurement and risk acceptance, demonstrate that the various procurement options available and market capability are being considered, and establish that there is a clear procurement approach in place to deliver, as a minimum, the next phase of the study. The Commercial Dimension will be developed in further detail at Strategic Outline Business Case (SOBC) and Outline Business Case (OBC) stage.
- 17.2 Reflecting TfN's governance arrangements, local TfN's transport authority partners, Department for Transport, Network Rail, Highways England have been engaged with, and have contributed to, the development of the West Coast - Sheffield City Region SDC throughout its lifecycle including participation in the option assessment and economic appraisal processes.
- 17.3 The SPOC for this corridor provides a key part of the evidence base for TfN's Strategic Transport Plan and Investment Programme, which sets out TfN's priorities for investment in transport across the North.
- 17.4 TfN is accountable for owning the vision for the proposed programme and integrating and aligning it with the wider TfN Strategic Transport Plan, the wider Northern Powerhouse agenda and key government policies and strategies.
- 17.5 TfN will provide the overall direction, governance and leadership, including chairing the Programme Board, further developing, refining and sequencing the package of interventions to facilitate the implementation of the proposed programme. TfN's role is overarching, in order to maintain a healthy alignment between the programme and wider Departmental and Government strategies, while engaging with HM Treasury, Cabinet Office, the National Infrastructure Commission, Infrastructure and Projects Authority and other key governmental stakeholders. TfN will also be responsible for managing the key strategic risks facing the programme and ensuring that the views of the local authority partners are represented.



- 17.6 TfN will lead on further business case development at the Pan-Northern/Strategic Development Corridor level, including seeking and prioritising funding for schemes. Beyond that stage, works and services will be procured by the appropriate delivery entity, yet to be determined. For example, this could include Highways England (for Strategic Road Network schemes), Network Rail and local transport authority partners.
- 17.7 The programme of interventions proposed for the West Coast - Sheffield City Region corridor includes many schemes, which will likely be delivered over a number of years. The timing of the delivery of interventions provides an opportunity for scheme promoters to ensure suppliers offer the correct skillsets as new framework and term maintenance contracts are let. More detailed market analysis will be undertaken as part of the next stage of works and updated as technologies in construction and within the complementary industries develop.
- 17.8 The proposed programme of interventions across this SDC comprises of rail investments to be delivered over time. The delivery of these schemes will require a comprehensive plan that carefully phases investment to ensure affordability, whilst balancing disruption, mitigation and enhancement of environmental impact and the realisation of benefits to the residents and businesses of the North of England. The interdependencies with committed schemes such as HS2 and programmed road schemes are also a key factor to consider when developing the delivery plan.
- 17.9 It is envisaged that a number of early 'priorities for delivery' will be taken forward to Strategic Outline Business Case status in 2019/2020 and delivered between 2020-2027. Overall, a programme of short (up to 2027), medium (2027-2035) and long term (post 2035) interventions will be developed.
- 17.10 In the next year, TfN plans to update the Strategic Programme Outline Cases to inform an update of the Investment Programme. This will include work on reviewing the current SDCs and Investment Programme, including the sequencing of schemes. The next stage of modelling will include transformational NPIER forecasts and the latest spatial planning information.
- 17.11 As in the first stage of development of the SDCs, TfN will fully engage with DfT, our local partners, national delivery bodies, transport operators and other key stakeholders. This will ensure that partners' and stakeholders' contributions inform and help shape our delivery programme.

## Management Dimension

The Management Dimension of a business case sets out to demonstrate that the proposals are deliverable, including describing proposals for:

- Programme governance
- Stakeholder engagement
- Risk and opportunities management
- Monitoring and evaluation

## 18 Overview and Summary from Passenger Rail SPOC

### Programme Governance and Structure

- 18.1 As the body responsible for managing issues at a strategic level across the North, Transport for the North (TfN) is leading the development of a multimodal package of schemes to implement in the West Coast – Sheffield City Region corridor. The Strategic Programme Outline Cases (SPOC) for the SDCs provide a key part of the evidence base for TfN's Strategic Transport Plan (STP) and Investment Plan (IP). This sets out TfN's proposals for investment in transport across the North.
- 18.2 TfN, as the statutory transport body for the North, is the voice of the North of England for transport - a partnership of elected and business leaders from across the whole of the North of England who collectively represent all of the region's 16 million citizens.
- 18.3 Following completion and TfN Board endorsement of the Strategic Programme Outline Case, TfN will maintain responsibility for owning and promoting the SDC programme. This will include the completion of further development work during 2019/20 to refine, package and sequence the proposed delivery of the Strategic Outline programme. Endorsement of these publications is likely to be Exec Board.
- 18.4 An overview of the governance structure is shown below in Figure 18-1. Further description as well as the Roles and Responsibilities of the governance structure below is provided in the Passenger Rail SPOC (October 2019).

**Figure 18-1: SDC Governance Structure<sup>73</sup>**



- 18.5 For the Programme Management and Assurance process, further description is outlined in the Passenger Rail SPOC (October 2019).

### **Programme Lifecycle and Sequencing**

- 18.6 The proposed programme of interventions across the West Coast – Sheffield City Region SDC comprises investments to be delivered over time. The delivery of these schemes will require a comprehensive plan that carefully phases investment to ensure affordability, whilst balancing disruption, mitigation and enhancement of environmental impact and the realisation of benefits to the residents and businesses of the North of England. The interdependencies with committed schemes such as HS2 and programmed road schemes are also a key factor to consider when developing the delivery plan. The description of the Outline Delivery Programme is provided in the Passenger Rail SPOC (October 2019).

### **Stakeholder Management and Communications**

- 18.7 Effective stakeholder management and consultation is fundamental to achieving the objectives of the programme. This section presents an

<sup>73</sup> As of June 2019, Strategic Transport Plan Programme Board was renamed as the Strategic Oversight Group (SOG)

overview of TfN's engagement with key stakeholders conducted so far through all the previous SDCs work which has fed into this corridor. As well as an overview of TfN's approach to future stakeholder engagement and communications.

- 18.8 At the start of the development of the SPOC, a Stakeholder Engagement Plan (SEP) was produced to map stakeholders and agree a communications plan throughout the option development process and preparation of the SPOC. Further information about the SEP as well as the stakeholders who were consulted are provided in the Passenger Rail SPOC (October 2019).

## **Risk and Opportunities Management**

- 18.9 The SDCs risk management is undertaken in line with TfN's Risk Management Strategy (RMS). The RMS provides a framework for managing risks in a consistent manner by applying systematic methods and practices to the task of identifying and assessing risks and opportunities which in turn allows mitigation measures to be identified and implemented to reduce or optimise the effects. This provides a disciplined environment for proactive decision-making.
- 18.10 Detailed description of each of the stages of TfN's risk management process as well as the RMS are provided in the Management Dimension of the Passenger Rail SPOC (October 2019).

## **Approach to Monitoring and Evaluation**

- 18.11 The monitoring strategy for this programme will set out data requirements, potential data sources and how the data will be obtained and monitored at the start of the project (baseline) at various intervals during the project (milestones) and at the end of the project (target) to help assess the trajectory of outputs and impacts.
- 18.12 The evaluation plan, to be developed as the programme development progresses, will describe in detail the proposed evaluation approach and how it fits with the existing evidence base and monitoring strategy. The plan will be developed following guidance contained in the Magenta Book<sup>74</sup>, the Government's guidance on evaluation. All interventions will require a decision on whether to carry out a formal independent evaluation or not. This decision will be based on the scale of the investment and the need for evaluation<sup>75</sup>. The evaluation plan may draw on existing evaluation processes where relevant, for example Highways England's Post Opening Project Evaluation (POPE) for road schemes. Further information on the Monitoring and Evaluation Plan is provided in the Passenger Rail SPOC (October 2019).

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<sup>74</sup> HM Treasury. (2011). The Magenta Book

<sup>75</sup> DfT. (2013). Monitoring and Evaluation Strategy

## Glossary

Term	Acronym	Definition
Benchmark		<b>Benchmark Estimating Ltd</b> : company who undertook the 'benchmarking' exercise on the scheme costs
Concept		High level approach to delivering interventions (for example an offline bypass).
Enabling Capabilities		The capabilities of the North which are additional to the prime capabilities: education; financial and professional services; and logistics.
Garden Village		A self-contained community of between 1,500 and 10,000 homes.
Gross Value Added	GVA	The measure of the value of goods and services produced by an area, industry or sector of an economy.
Intervention		A potential (loosely defined) scheme which would deliver a benefit.
Local Enterprise Partnership	LEP	A voluntary, business-led, strategic partnership between local authorities and businesses, responsible for promoting and developing economic growth.
Major Road Network	MNR	A network of economically important roads vital for transformational growth
Northern Powerhouse Independent Economic Review	NPIER	Outlines the opportunities to transform the North.
Option		A more specific approach to delivering an intervention (for example a three-lane offline bypass to the west of a city). Given our current level of development, we should talk in terms of 'concepts' and not 'options'.
Package		A group of interventions that are linked by geography or technology.
Pan-Northern		Refers to transport schemes which fit within TfN's remit
Phasing		To do with a method of delivery for a package or intervention which sees its delivery staggered to release benefits / cause disruption over a certain timeframe.
Prime Capabilities		The four areas where the North is highly skilled and globally competitive, as identified by the NPIER: advanced manufacturing; health innovation; energy; and digital.
Programme		A large set of projects/packages/interventions, which for the purposes of our work are specific to an SDC.
Project		A <b>project</b> could be an intervention on its own or a package, but in any case would generally be defined in its scope by a decision to procure it from the market – as such, we will not be at a level of development where this is a useful term, and it is proposed not to refer to 'projects' in the SPOCs.
Rail North Partnership		Acts on behalf of TfN and DfT to manage Northern and Trans-Pennine rail franchises

Term	Acronym	Definition
Reference Case		The 'do-minimum' scenario developed by TfN including the likely future interventions that aim to increase connectivity across the region
Sequencing		The process of establishing when packages/interventions should be progressed, and should generally follow the convention of 2020 – 2025, 2025 – 2035, 2035 – 2050.
Strategic Development Corridor	SDC	An area where evidence suggests investment in transport infrastructure will enable transformational economic growth.
Strategic Programme Outline Case	SPOC	Catch-all term to integrate the similar considerations that were to be taken forward as part of the SOP and SOC.
Strategic Road Studies		Northern Trans Pennine Routes; Manchester North-West Quadrant; Trans Pennine Tunnel
Sub-national Transport Body		A formal, legal entity designed to bridge the gap between national and local projects to plan and prioritise long term infrastructure investment in a specific region.
Transport Appraisal Guidance	WebTAG	An online tool which provides information on the role of transport modelling and appraisal, and how the transport appraisal process supports the development of investment decisions and business cases.
Transport for the North	TfN	The sub-national transport body for the North
Term		Acronym
Association for the Advancement of Cost Engineering International		AACEI
Air Quality Management Areas		AQMAs
Appraisal Specification Report		ASR
Appraisal Summary Table		AST
Areas of Outstanding Natural Beauty		AONB
Benefit Cost Ratio		BCR
Distributional Impact		DI
Exogenous Demand Growth Estimation		EDGE
Environmental Appraisal Report		EAR
Environmental Impact Assessment		EIA
Environmental Statement		ES
External Forecast Model		EFM
Full Business Case		FBC
Governance for Railway Investment Projects		GRIP
Great Britain Freight Model		GBFM
Gross Domestic Product		GDP
High Speed 2		HS2
HM Treasury		HMT
Independent Economic Review		IER

Term	Acronym	Definition
Integrated Sustainability Appraisal		ISA
Local Enterprise Partnership		LEP
Major Road Network		MRN
Million passengers per annum		mppa
National Character Area		NCA
National Nature Reserve		NNR
National Trip End Model		NTEM
Net Present Value		NPV
North of England Rail Model System		NoRMS
Northern Powerhouse Rail		NPR
Northern Transport Demand Model		NTDM
Official Journal of European Union		OJEU
Option Assessment Report		OAR
Outline Business Case		OBC
Post Opening Project Evaluation		POPE
Present Value		PV
Present Value of Benefits		PVB
Present Value of Costs		PVC
Project Control Framework		PCF
Public Transport		PT
Regional Transport Model		RTM
Sites of Special Scientific Interest		SSSI
Senior Modelling Group		SMG
Small to Medium Enterprise		SME
Special Areas of Conservation		SAC
Special Protection Area		SPA
Stage Gate Assessment Review		SGAR
Stakeholder Engagement Plan		SEP
Strategic Outline Business Case		SOBC / SOC
Strategic Outline Programme		SOP
Strategic Road Network		SRN
Strategic Transport Plan		STP
Trans-Pennine South		TPS
Technical Assurance Group		TAG
Transport Economic Efficiency		TEE
Value for Money		VfM
Value of Time		VoT
Wider Economic Benefits		WEBs

