



Northern Freight and Logistics Report

One Agenda. One Economy. One North.



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Executive summary

The freight and logistics sector and its supporting industries have a key role to play in building the Northern Powerhouse. The North of England is a 'super region' for freight that handles around a third of UK road, rail, distribution centre and port activity against a population that only represents 24% of the UK total and is home to several major port, distribution and haulage companies.

The freight industry lies almost entirely in the private sector, which makes (in the North) investments of hundreds of millions of pounds a year and which provides industry, commerce and the wider population with a level of service that generally does not rely on public sector investment. In building the Northern Powerhouse, there is now a significant opportunity to improve operational efficiency in the freight and logistics industry through the provision of enhanced transport networks and optimised land use planning. This will reduce costs to industry, reduce environmental impacts and generate additional employment, making the North more competitive in terms of access costs and helping to attract footloose inward investment from the private sector.

The recommendations presented in this report demonstrates how public sector investment in a series of rail, road, waterborne freight and land use proposals, coupled with complementary private sector investment in new infrastructure and services, can achieve **£34.7 billion of User and Non-User Benefits¹** to the UK economy and **£13-£20 billion of Wider Economic Benefits² (Gross Value Added benefits)**

Overview of Report Development

This document presents the Freight and Logistics Report for the North of England prepared jointly by Mott MacDonald and MDS Transmodal on behalf of Transport for the North (TfN). The report was developed over three main phases:

- **Phase 1: Baseline Development** - the development of a comprehensive baseline understanding of the existing freight and logistics industry in the North of England, based on learning from international best practice and public and private sector stakeholder consultation, culminating in a detailed assessment of existing and future strengths, weaknesses, opportunities and threats.
- **Phase 2: Scenario Development** - the development of a 'Preliminary Central' scenario and four alternative 'Do Something' scenarios for testing against a 'Do Minimum³' scenario using a range of tools including the Great Britain Freight Model (GBFM) in order to arrive at the preferred recommendations.
- **Phase 3: Formulation and Appraisal** - further development and refinement of the preferred recommendations and appraisal of its benefits using standard WebTAG compliant transport appraisal techniques, supported by additional bespoke appraisal to understand the environmental impacts and wider economic benefits.

¹ Based on a 60 year appraisal period; discounted to 2010 and 2010 prices. Aggregate UK wide impact.

² Based on a 30 year appraisal period; discounted at 3.5% to 2016 values. These benefits are net additional to the Northern Economy only.

³ See appendix A4.4 on page 22 of the Northern Freight and Logistics Report Technical Appendices.

The Potential for Transformational Economic Growth

March 2016 marked the end of the first year since the launch of 'The Northern Powerhouse: One Agenda, One Economy, One North: A Report on the Northern Transport Strategy', where the TfN Partnership Board set out an ambitious vision to transform through economic growth, rebalance the country's economy and establish the North of England as a global powerhouse, underpinned by the delivery of world-class transport connectivity.

HM Treasury analysis presented in the 2015 One North report suggested that, in realising the ambition to rebalance the UK economy, by 2030 this would be worth an additional £56 billion in nominal terms to the northern economy, or £44 billion in real terms equivalent to £1,600 per person in the North. The analysis presented in this report suggests that these figures were conservative and that the freight and logistics sector can deliver a step change in benefits that further enlarge the vision for the Northern Powerhouse.

The TfN Partnership Board aims to tackle the long-standing challenges that enable productivity 'gaps' to persist and enable the North to fulfil its potential in terms of its contribution to the UK economy. The first Independent Economic Review for the North identifies four distinctive prime capabilities held by the North that have the highest potential to drive growth and increased productivity:

- Digital technology, including software and content;
- Advanced manufacturing, especially materials and processes;
- Energy, including nuclear and offshore wind; and
- Health innovation, including life sciences, medical technology and service delivery.

Logistics is identified as one of three enabling capabilities that support these prime capabilities and drive employment growth; the other two being financial and professional services, and higher education. Freight and logistics therefore has a key role to play in supporting the North's economic vision.

'The Northern Transport Strategy: Spring 2016 Report' further cemented the role of pan-Northern transport connectivity in closing the productivity gap. It presents a prioritised investment programme across road, rail and smart ticketing schemes to be developed and delivered over the period to 2020 and beyond, underlined by a Government commitment to spend £13 billion on transport for the Northern Powerhouse over this Parliament.

The Report

This report looks at opportunities to reduce the cost of freight transport to both users and non-users (for example, reducing the environmental impacts of freight and logistics movements), create new facilities, expand market share in the logistics sector and attract inward private sector investment to the Northern Powerhouse. The central recommendations of the report, which Transport for the North will consider as part of its strategy development process are as follows:

- The development of 50 hectares of rail and/or water connected Multimodal Distribution Parks (MDPs) per year, to be located at the edge of urban centres, thus minimising the cost of onward distribution by road, enabling sustainable access to employment and futureproofing for the potential longer term introduction of low/zero carbon 'last mile' distribution solutions that can mitigate against air quality challenges associated with increasing economic development in urban centres.
- Rail network upgrades to allow 20% longer freight trains to operate on a six day week basis, which will reduce unit costs through improved asset productivity. On that basis, the provision of sufficient rail network capacity on the East Coast Main Line (ECML), Midland Main Line (MML), West Coast Main Line (WCML) and trans-Pennine lines to accommodate the additional rail freight that the market would choose to handle. By 2033, this would mean a total of the following off-peak paths per hour (each direction to the nearest 0.5 paths). These are calculated on the basis of 18 off-peak hours per day and path utilization of 85% for intermodal trains.
 - 2.5 north of York and 7 south of Doncaster on the ECML and MML together, as compared with means of 2.5 and 4.5 respectively at present.
 - 2.5 north of Wigan, 5.5 between Crewe and Wigan and 6 south of Crewe on the WCML, as compared with 1.5, 3 and 3.5 respectively at present.
 - 3 across the Pennines as compared with 2 at present.
- The promotion of short-sea shipping (particularly for unitised freight) to bring cargo directly to Northern ports, facilitated through the provision of Liquid Natural Gas (LNG) bunkering infrastructure at ports to enable its use as a cheaper marine fuel alternative, making longer trips to Northern ports more competitive.
- Complementary land-side access improvements to ports to reduce local road congestion, most importantly along the route of the M62/M60 north of Manchester and into Hull and Liverpool.
- Raising the quality of the environment to further promote the Northern economy

Crucial to the successful implementation of the recommendations is instilling sufficient confidence in the private sector to make its own investment in infrastructure and new services, in a highly competitive environment. The North is home to several major freight and logistics companies, including rail operators and shipping lines, who have supported the development of this report. In addition the North is home to a number of large scale manufacturing businesses, with extensive local, national and international supply chains that link them to export markets. These businesses will also benefit from reduced costs as a result of implementing the recommendations of this report, which will help them to lever in additional inward investment. A lower cost base can also play a key role in attracting new industry and inward investment to the North of England. Figure 1.2 demonstrates how these transformative outcomes can be achieved.

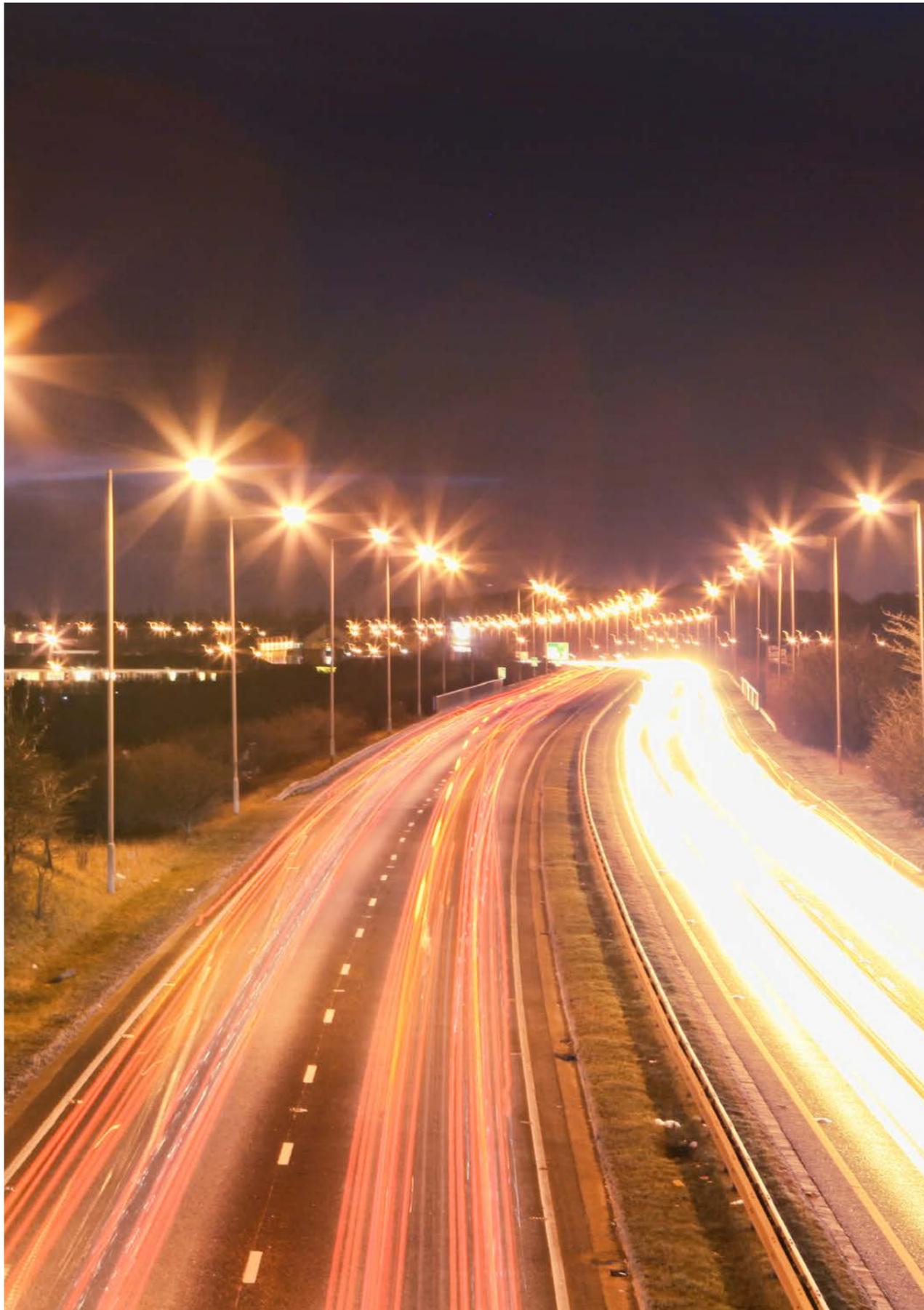
This report will help to inform work to identify the priorities for investment in the rail network from 2019 onwards, building on the more than £40 billion the Government has already committed to investing in Network Rail for Control Period 5 (2014-19). It will help to inform the Rail Freight Strategy currently under development by the Government working with the rail freight industry.

The report also helps to strengthen the case for investment in the Northern highway network to support the extensive opportunities available for port development and in the logistics sector to support the overall Northern economy. The higher the proportion of goods that arrive through Northern ports, the greater the need to upgrade east-west links (road and rail) and port access roads. The development of private sector funded logistics hubs on both sides of the Pennines complements the extensive investments being made by the major ports in the North to upgrade facilities in both unit load and biomass traffics in particular.

The public sector now has a clear role to play in maximising the value that the freight industry can offer to the North of England, in particular:

- Delivery of the relevant road schemes to reduce operating costs from ports and inland terminals;
- Provision of capacity in line with demand in the rail sector, as well as ensuring an adequate loading gauge is in place along relevant routes (particularly Trans-Pennine); and
- Ensuring that MDPs can be brought forward in suitable locations through the planning system, with the relevant funding required to achieve rail and water connections.





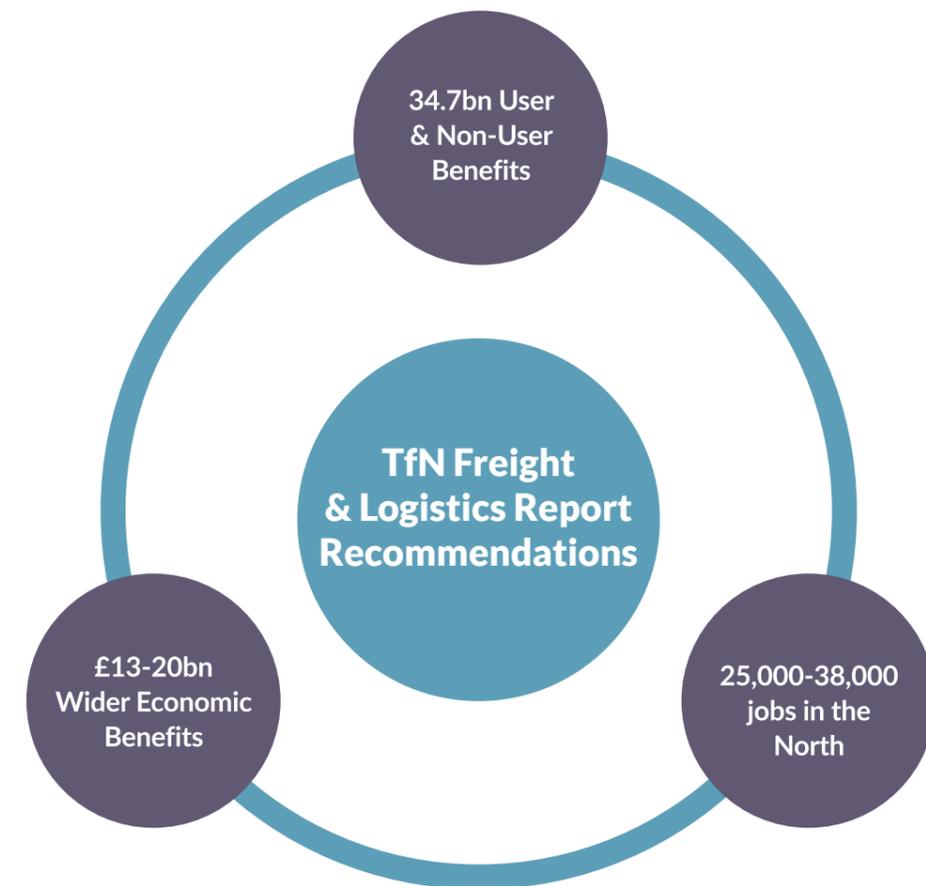
1 A Shared Vision

1.1 A Pioneering Study Delivering Transformative Outcomes

Transport for the North (TfN) has broken new ground with the undertaking of the UK's first pan-regional Freight and Logistics Study. Its recommendations should be delivered through public sector interventions that encourage the private sector to invest in and operate a thriving freight and logistics industry that will, in turn, support a vibrant and well-connected Northern economy.

The recommendations in this report support the vision for a Northern Powerhouse, where a re-balanced economy addresses north-south inequalities. It demonstrates how a proportional level of public sector investment in interventions that drive the future growth and development of the freight and logistics industry, coupled with private sector freight and logistics investment, will deliver transformative outcomes in the order of **£34.7 billion of User and Non-User Benefits⁴** to the UK economy and **£13-£20 billion of Wider Economic Benefits⁵ (Gross Value Added benefits)** to the Northern economy, as well as **25,000-38,000 additional jobs in the Northern economy** by 2033 (the User and Non-User benefits are UK wide whilst the GVA benefits are net additional to the North only). Environmental benefits will be realised through a reduction in the impact of road freight on urban air quality and a significant transfer from predominantly North-South road based haulage to shipping and rail.

Figure 1.1 illustrates the headline impacts of implementing the recommendations of this report



⁴ Based on a 60 year appraisal period; discounted to 2010 and 2010 prices
⁵ Based on a 30 year appraisal period; discounted at 3.5% to 2016 values

1.2 Shared Vision and Objectives

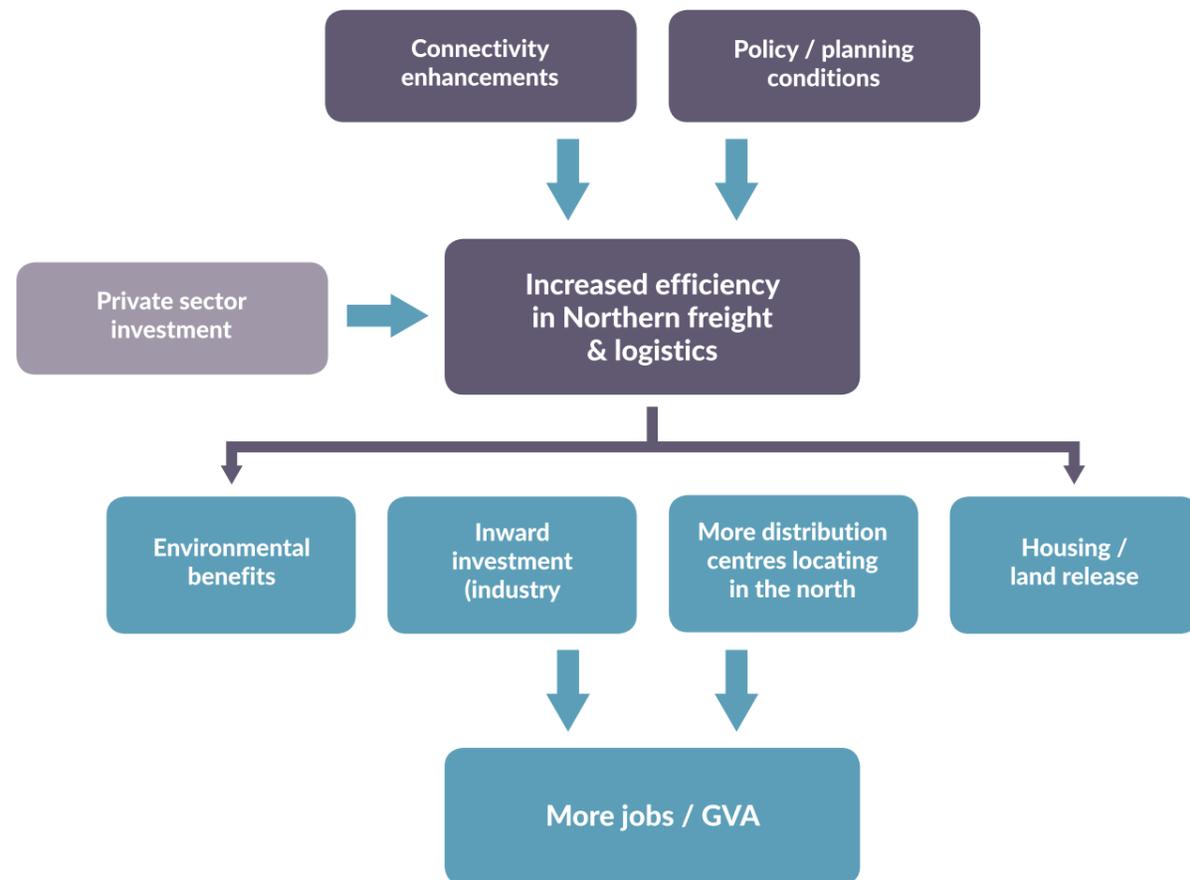
This report seeks to:

“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”

Public and private sector partners have come together to define a shared vision for the freight and logistics industry in the North as follows:

“In 2033 the North of England will have world-class infrastructure to facilitate the efficient movement of freight to, from and across the region. It will offer high quality and cost-effective accessibility and connectivity to global and national markets via its ports, airports and its network of Multimodal Distribution Parks. These changes, plus a re-focused planning and policy framework in the North, will have led to a step-change in private sector investment in infrastructure, services and equipment to create new employment opportunities in the logistics sector and the widespread adoption of low or zero emission solutions for both long-distance and ‘last mile’ solutions. The freight and logistics industry in the North will have fulfilled its role as one of the critical enablers to allow all industry sectors, including advanced manufacturing and low carbon energy generation, to flourish and grow in the region, while making the North an attractive place to live, work and invest.”

Figure 1.2 demonstrates how these transformative outcomes will be achieved.



To realise the vision, three key objectives have been identified:

- To deliver road and rail infrastructure capacity that enables forecast demand to be realised, improve connectivity and ensure network resilience for freight and logistics activity to, from and within the North to 2033 and beyond;
- To deliver at least 50 hectares of rail and water connected distribution parks per annum that will also add two million square metres of distribution centre capacity on multimodal sites in the North and create 25,000-38,000 new jobs in the logistics sector by 2033; and
- To deliver £16.8 billion of efficiency gains for the UK economy through the freight and logistics sector and £17.8 billion of net non-user (reduced congestion and environmental) benefits.

The three objectives reflect the aims of stakeholders for a series of specific, measurable objectives that support the wider Northern Powerhouse agenda. The outputs of the modelling and appraisal work undertaken during the development of this report suggest that the objectives are challenging but remain deliverable with ongoing commitment by the public and private sectors to invest.

1.3 Principles for Intervention

A clear understanding of where the North’s competitive advantages lie and where it needs to invest in capacity and connectivity improvements has been developed. Policy and planning barriers that need to be broken down to secure investment and attract inward investment to stimulate growth and development in support of our vision have also been identified. The implications of the recommendations in this report, and benefits therein, are spread comparatively widely across the whole of the North, particularly where land and transport links provide optimal locations for economic growth which for freight are typically outside of the major urban centres.

In order to achieve these objectives, and deliver the forecast £34.7 billion of User and Non-User Benefits⁶ to the UK economy and £13-£20 billion of Wider Economic Benefits⁷ (Gross Value Added benefits) to the Northern economy, this report focuses on reducing the cost of transporting freight within, to and from the North. This report is based on key principles for action that articulate the priorities for investment and define the context in which the recommended interventions presented in this report have been developed, tested and appraised.

The key principles for intervention are:

- Increasing network capacity and resilience for freight to, from and within the North, with particular emphasis on rail and water but also addressing road pinch points, including the critical role of the M62;
- Delivering growth in strategically located rail and water connected freight interchanges / distribution parks (referred to as Multimodal Distribution Parks or MDPs in this report) in the North of England;
- Delivering growth in traffic through Northern ports by improving their connectivity and enabling shipping lines to offer more cost-effective services;
- Having effective powers in place to simplify and streamline public policy, planning and decision making processes, to improve and fast-track the implementation of public sector measures and private sector investment and innovation required to achieve a step change in the economic efficiency of moving freight in the North of England;

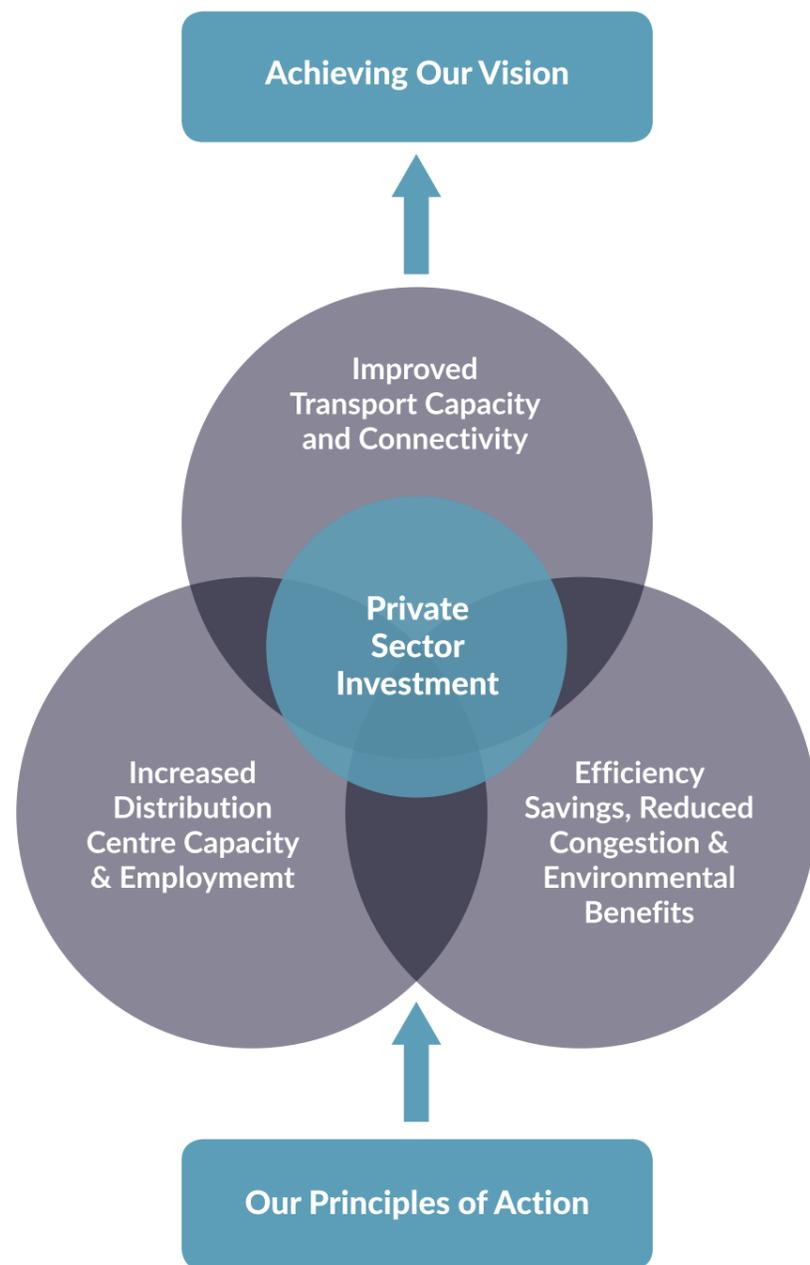
⁶ Based on a 60 year appraisal period; discounted to 2010 and 2010 prices

⁷ Based on a 30 year appraisal period; discounted at 3.5% to 2016 values

- Creating a long-term, consistent business environment to stimulate private sector investment in sustainable, low emission technology and distribution practices across the North;
- Creating a more efficient economy that helps secure inward investment to the Northern Powerhouse;
- Ensuring there is an effective role for the freight and logistics industry and its customers in collaborating to develop TfN's ongoing freight and logistics work and its delivery; and
- Planning for training and upskilling the next generation of the freight and logistics industry's workforce, to address the current and forecast skills and resource gaps, whilst increasing employment opportunities for people in the North.

Figure 1.3 illustrates how delivering these interventions will ultimately help achieve this vision.

Figure 1.3: Achieving Our Vision



1.4 A Joint Approach to Delivery

In this report we set out a series of short, medium and long term public sector measures to be delivered across the North of England as part of a wider strategic investment programme led by Transport for the North as set out in The Northern Transport Strategy⁸. That investment will improve network capacity, connectivity and resilience in the context of better planning and decision making processes that together will create efficiency savings for the UK freight and logistics sector, reduce congestion and environmental impacts and create a more attractive business environment that will lever in additional inward investment by the private sector into new services, infrastructure and industry. The successful delivery of the recommendations in this report hinge on action by both the public and private sectors, based on sound communication, ongoing delivery and a shared vision for the future.

The report sets out a package of public sector measures that, coupled with complementary private sector action, have the potential to generate a transformational economic return for the Northern economy. The Northern Powerhouse cannot be created through piecemeal investment and the measures presented in this report represent a coordinated package that heralds the beginning of a new era of strategic, coordinated investment in transport across the North of England spearheaded by TfN.

⁸ The Northern Transport Strategy: Spring 2015 Report (Transport for the North)





2 Building the Northern Powerhouse

2.1 Transformational Economic Growth

This section sets out how the vision we articulate for the future Northern freight and logistics industry sits in the context of the wider transformational Northern Powerhouse agenda, which is led by the Transport for the North (TfN) Partnership Board. The TfN Board is currently developing seven complementary workstreams in pursuit of radical change in the North of England, including the freight workstream underpinning the development of this critical Freight and Logistics Report.

In its March 2015 report, 'The Northern Powerhouse: One Agenda, One Economy, One North: A Report on the Northern Transport Strategy', the TfN Partnership Board sets out an ambitious vision to transform economic growth, rebalance the country's economy and establish the North of England as a global powerhouse. The aim is to create a single Northern economy that complements and acts as a balance to the economic weight of London; where economic growth is at least as high as the rest of the country.

The North, which is home to 15 million people, has the potential to be one of the world's most competitive regions, attracting and retaining the best talent and playing host to successful and innovative global organisations, supported by state-of-the-art transport connections and a freight and logistics industry that is able to operate even more efficiently. HM Treasury analysis presented in the 2015 One North report suggests that, in realising this ambition to rebalance the UK economy, by 2030 this would be worth an additional £56 billion in nominal terms to the northern economy, or £44 billion in real terms equivalent to £1,600 per person in the North. Our analysis in this report suggests that these figures are conservative and that the freight and logistics sector can deliver a step change in benefits that further enlarge the vision for the Northern Powerhouse.

2.2 A New Pan-Regional Approach

The towns and cities of the North are individually strong; however as recognised in the 2015 'One North' report jointly published by its six city regions, they are relatively small by international comparison. By reducing distribution costs within the North its overall scale can be exploited, providing the critical mass that can reduce unit costs through its key gateways and improve competitiveness. In this way the City Regions can create a unified economic area that can be greater than the sum of its parts and ultimately achieve a rebalanced economy.

It is recognised that radical improvements to inter-city connectivity and intra-city region multimodal transport systems are needed to support the creation of a single, deep, polycentric economy. These improvements will enable organisations to attract and retain the best talent from across the region, where fully mobile workers are able to gain the skills they need and take advantage of employment opportunities without being limited by location. Businesses will become more efficient and increased interaction will generate new ideas and innovation.

2.3 Delivering a World Class Transport Network

The delivery of a world-class transport network is fundamental to the creation of the Northern Powerhouse. If it is to function as a single economy and compete with the best performing regions in Europe it must improve connectivity and ensure that its strategic domestic and global networks have the capacity and resilience to attract inward investment and drive growth. The North must deliver transformative transport interventions that address the capacity and connectivity issues that currently limit efficient and effective movement and reduce its credibility as a cost effective and competitive investment location.

To this end, TfN is progressing seven interlinked workstreams as follows, within which freight and logistics plays a critical role:

- Road;
- Rail;
- Freight and Logistics;
- Integrated Smart Travel;
- Strategic International Connectivity;
- Strategic Local Connectivity; and
- Independent Economic Review.

2.4 The Role of TfN in Driving Change

TfN will become a statutory body in 2017 and become responsible for developing and implementing a comprehensive transport strategy for those elements that are within its remit. The development of this Freight and Logistics Report is one of the first steps taken by TfN as part of a series of inter-related workstreams that will set out how improvements to the transport system will be made to deliver transformative growth.

However, TfN cannot act alone. The measures set out in this report aim to stimulate and enable private sector investment in freight assets and systems as part of a competitive market environment, while also serving the wider public interest. This can only be achieved with effective communication and complementary action between the public and private sectors, and the Action Plan set out in Section 8 indicates how this can be achieved.

2.5 Report Development

Our overall approach has been to model the impact of a range of interventions to forecast the impact on costs, mode choice and routing and by comparing a 'do-minimum' scenario with different bundles of public sector interventions to arrive at preferred recommendations. Interventions have been limited to those that are within the control of the public sector (or in the future could reasonably envisaged to be so) and have excluded any that would involve market distortion (e.g. funding port infrastructure). The preferred recommendations have been evaluated using the measures described above.

3 The Policy Context for Freight Transport

In considering the development of a Freight and Logistics Report for the North, it is important to understand the context in which the freight and logistics industry and associated services operate. This section comments on the interfaces between the operation, management and delivery of the services provided by the sector and the regulatory frameworks developed by the public sector in which they are provided.

3.1 Public – Private Sector Context

In considering the range of services provided by the freight and logistics industry, it is important to note that the freight industry operates almost entirely within a private sector context. It includes road hauliers and warehouse operators, rail freight operators, port and terminal operators, shipping lines and the developers and owners of freight and logistics infrastructure such as warehouses and ports. Some organisations, such as the Port of Tyne (a trust port) do not have private sector shareholders, but nevertheless are required to operate within commercial market disciplines, without government support or subsidy.

There are occasions when the public sector can provide financial support to the freight and logistics industry (it is worth noting that public sector investment in non-transport areas such as flood prevention, land reclamation and land remediation can also support relevant private sector investment). In selected instances vessels that provide accessibility to small island communities can be financially supported by the public sector to maintain a level of connectivity to key services; so called 'lifeline' services. However, such support will generally not be permitted as it amounts to state aid, which is illegal under EU rules except in certain circumstances where it is considered to be unavoidable. In any event, public sector interventions may harm investor confidence.

Freight revenue grants are provided to encourage modal shift from road to rail, inland waterway or coastal shipping, where this is more expensive than road and where there are benefits to be gained. Rail freight operators receive these subsidies when the deficit they would otherwise face is less than the value of the 'Mode Shift Benefits' conferred by a transfer from road to rail. The funds available are in any event small; £20m p.a. as compared with the overall rail freight industry turnover of around £800m p.a. in the UK.

UK ports operate without subsidy which avoids the risk of market distortion. The UK road haulage industry is competitive between operators and forms part of a pan-European industry.

This context has the great advantage of minimising public sector expenditure and has encouraged the private sector to invest heavily in its own infrastructure. Based on recent transactions, the UK ports industry may have a capitalised value in the order of £20 billion⁹. The stock of UK large warehouses of 40 – 50 million m² would have a similar value.

With the addition of the fleet of road tractors and trailers, railway locomotives and wagons and rail terminals to the above inventory, estimates on the overall value of freight transport assets are in the region of £100 billion. Our modelling of freight transport costs during the development of this report suggests that UK freight industry turnover including large warehousing is at least £50 billion per annum.

⁹ Source: MDS Transmodal estimate

3.2 Facilitating Changes that are in the Public Interest

The regulatory, planning and policy frameworks, and the network assets as delivered by the public sector play a vital role in influencing the investment decisions and operational strategies of asset owners and service operators in the freight and logistics sector. However these frameworks and public sector network assets may have been established for a range of political reasons that may not take due account of freight requirements for efficiency. It is inevitable that companies in the industry will be cautious with respect to changes in that context because such changes could affect competitive positions. A new road investment may advantage one warehousing site in competition with another; an expansion in rail capacity could disadvantage a road haulier operating in competition with rail. More restrictive controls over emissions in city centres could affect the interest of the owners of diesel powered delivery trucks.

The competitive nature of the freight industry means that companies will react to changes in this framework and network provision to ensure that they continue to prosper. However, this provides the public sector with the leverage to encourage the freight industry to make well considered changes over a number of years if those changes are in the public interest.

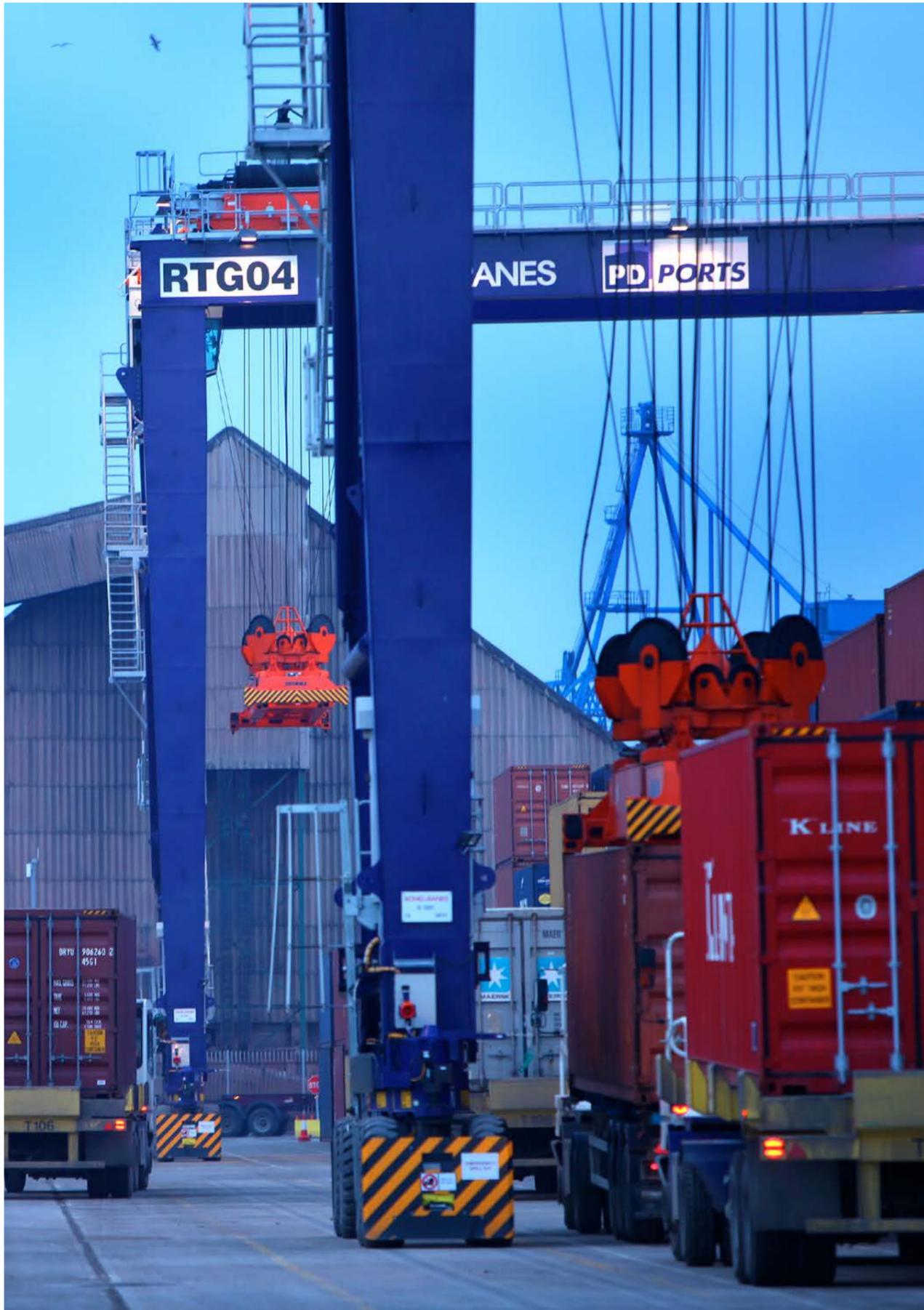
The public interest does include delivering goods more efficiently and cheaply. This is a crucial objective in the context of the Northern Powerhouse if the overall objective of rebalancing the UK economy is to be achieved as it delivers efficiency gains to the Northern economy and attracts investment to the North. The most effective means of reducing the cost of freight is for freight to move by the most economical mode for the flow concerned and to minimise double handling and other 'friction' costs.

In addition freight also imposes costs on 'non users' that need to be recognised, in part because of the negative impact that can also have on economic development and the environment. Road freight in particular imposes costs on non-users through CO2 and other emissions, congestion, accidents, road pavement damage and noise. These costs are estimated by the consultants to be on average around £0.30 per HGV kilometre for traffics eligible for Mode Shift Revenue Support, depending on the road type involved, and they have been used as part of the environmental and social impact appraisal set out in the Appendices to this report.

The issue of HGV environmental impact is particularly acute for towns and cities and there is a growing understanding of the serious issues that NOx emissions pose for public health. This is currently a serious issue with respect to the expansion of urban centres in the North of England as air quality levels come up against legal ceilings. It could be argued that the activity of diesel powered HGVs in central urban areas (we estimate there will be around 200m HGV kilometres in northern city central areas in 2033) limits those cities' further development in effectively 'using up' a finite 'budget' of tolerable NOx emissions. However, current standard environmental modelling assumptions (as adopted in this report) suggest that NOx emissions will have already reduced through various technological and practical changes, removing existing breaches to legal limits in the North and preventing future breaches in other areas. Should this not prove to be the case there is a stronger case, and considerably higher economic value, that could be claimed upon the removal of HGV miles from central areas, to allow other economic development to take place.

Notwithstanding the above issues there is in any event a strong case for the public sector to consider freight policy interventions that deliver environmental benefits and in particular the use of very low or zero emission vehicles in urban areas. Low or zero emissions last mile delivery represents an opportunity over the longer term for an informed and pro-active freight policy on the part of the public sector to contribute to the economic growth of the North of England. However, low/zero emission last mile distribution is not explicitly included as a key measure in this report and it issues a recommended option that local authorities consider them as part of assessing new development.





4 Freight and Logistics in the North of England

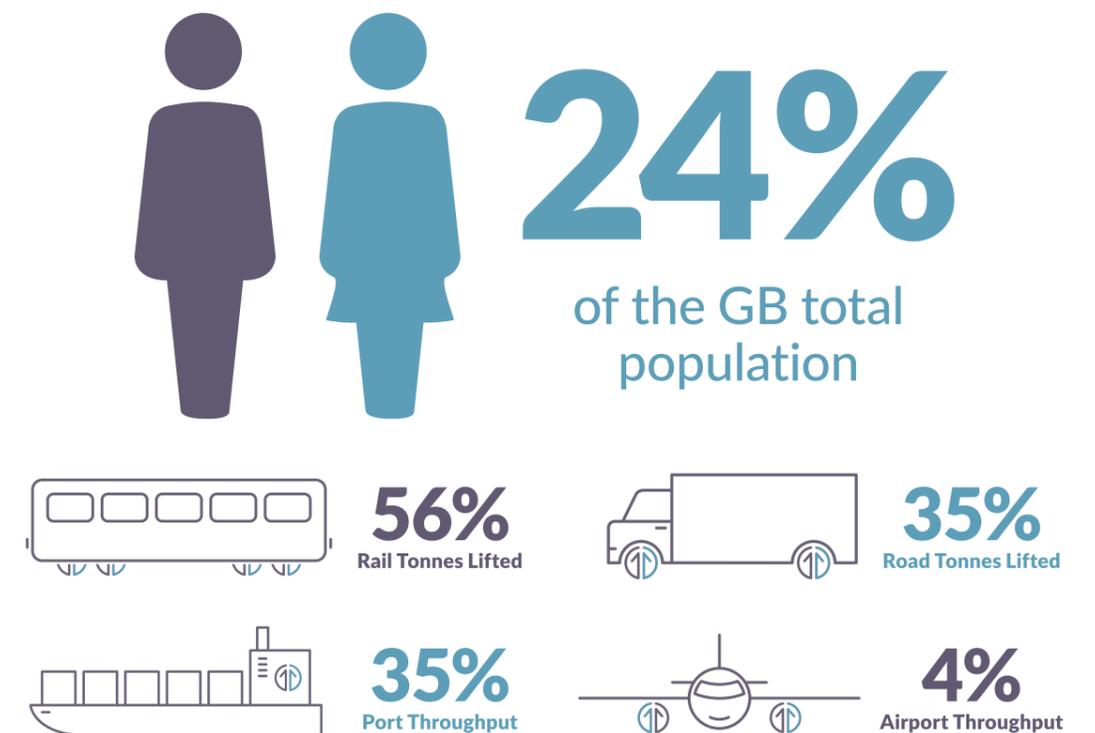
4.1 Importance of Freight and Logistics to the UK Economy

This section provides an overview of the current context of the freight and logistics industry in the North of England and the contribution it makes to the wider economy. Freight accounts for 9% of the country's GDP and supports every industry and access to all goods and services. In the UK, a total of 1.65 billion tonnes of freight are lifted by all modes per annum, of which some 0.5 billion tonnes is traffic through ports and airports. A little over a third of this total activity takes place in the North of England.

The North plays a particularly strong role in rail freight transportation; in 2014/15, 111 million tonnes of freight in Great Britain were transported by rail, of which 56% was to or from the North. The greatest volume of rail freight in both Great Britain and the North related to movements of coal between ports and inland power stations, where in the North these movements are predominantly between deep water ports on the Humber, Tees and Tyne and inland coal-fired power stations. These volumes are now falling as the UK switches to a lower carbon economy, such that spare capacity is emerging in the rail and ports sector that can be capitalised on by different cargo sectors. During the same period, ports in the North handled some 174 million tonnes, capturing almost 38% of the GB total.

Private sector investment in the North already accounts for some 65km of quays at ports, 12 million square metres of large warehouses (>9,000m²), around 190 freight locomotives and 130,000 HGVs. It is regularly served by some 110 container ships and ferries.

Figure 4.1: The North Handles a Disproportionate Volume of Freight Traffic than its Population Would Suggest

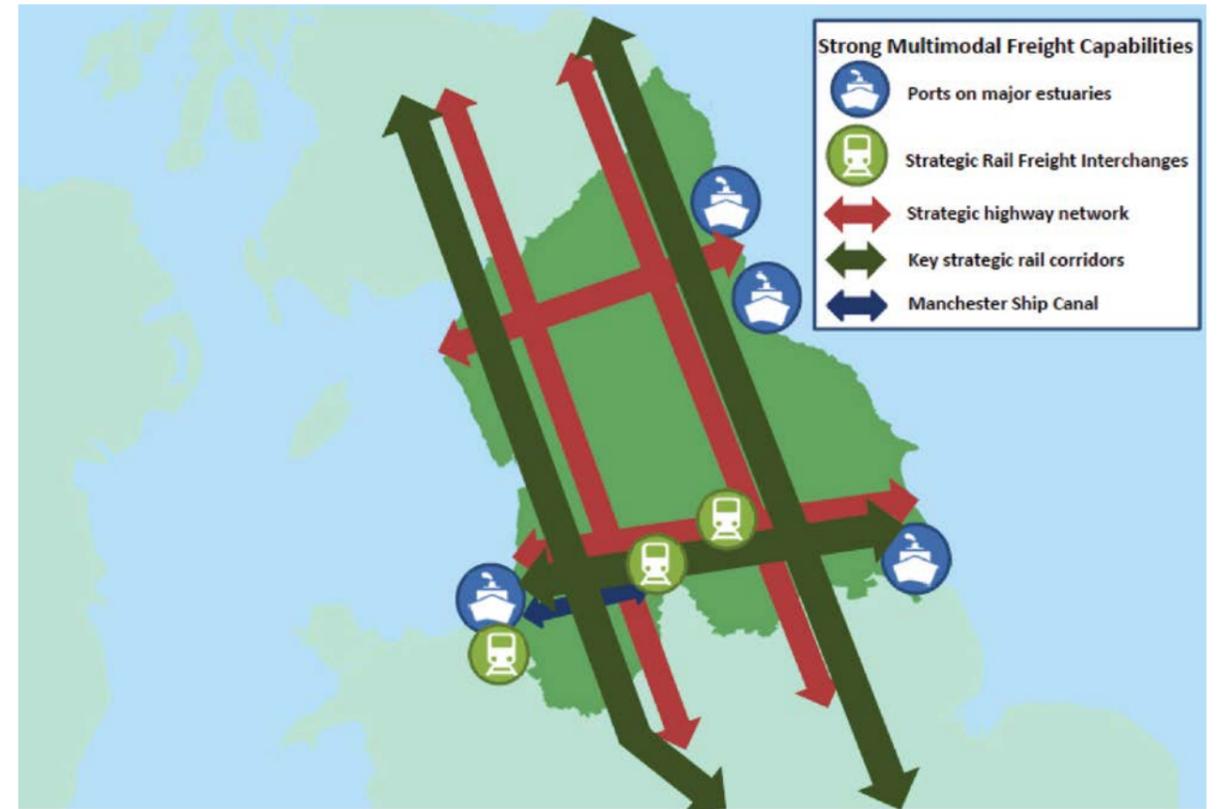


The population of the North of England represents 24% of the total population in Great Britain; yet it handles a disproportionate volume of freight traffic – around a third of UK road, rail, distribution centre and port activity, but only a small proportion of air freight where opportunities to carry more are restricted by the dominance of Heathrow’s long haul belly hold capacity.

Figure 4.2 illustrates the wealth of freight assets located in the North, which underpin a strong multimodal freight capability. These include:

- Three Strategic Rail Freight Interchanges (SRFIs - distribution centres with intermodal terminals¹⁰) at Ditton, Wakefield and Selby with more emerging;
- Five further Intermodal Terminals at Trafford Park / Barton Dock Road, Leeds, Garston, Doncaster and Wilton;
- Four key port areas on major estuaries (Humber, Tees, Mersey, Tyne) with generally excellent rail connections, and several rail connected sub-regional ports that can play a complementary role and reduce pressure on the major centres;
- A Strategic Road Network focused on the M62/M60/M56 and A66/69 East-West corridors and the M6 and M1/A1 North-South corridors;
- A strategic rail network principally comprising of the West Coast Main Line, East Coast Main Line and Midland Main Lines that connect the North of England to the South;
- A network of inland waterways (including the Manchester Ship Canal); and
- A significant amount of Distribution Centre capacity.

Figure 4.2: Strong Multimodal Freight Capabilities in the North of England



It is clear that the North already handles a large proportion of freight traffic in Great Britain and that its ports and distribution parks support both the Northern economy and the wider UK economy. It is this activity and these assets that this report seeks to enhance in the pursuit of a re-balanced economy.

¹⁰ An SRFI is a large facility “in excess of 60ha in size and capable of handling at least 4 goods trains per day.”
Source: SRFI Policy Guidance, Department for Transport, November 2011, Section 4.1.

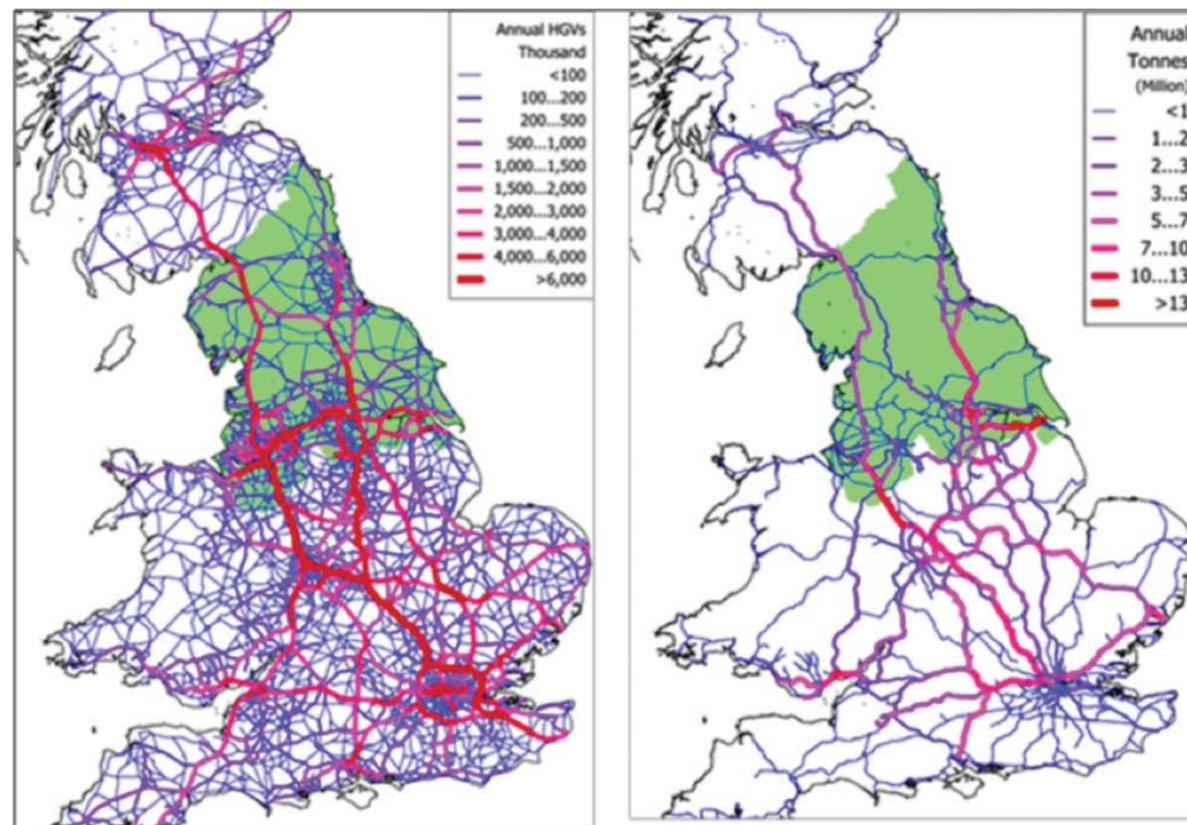
4.2 Transport Network Constraints

However, the Northern transport networks in their current state pose capacity problems and gaps in connectivity prevail that urgently require investment. A comprehensive review of the present day freight and logistics industry in the North of England, including freight demand, traffic flows in the North of England and an assessment of the existing infrastructure that supports this activity highlights three key issues for existing freight movements:

- **80% of road freight tonnage in the North is domestic traffic**, most of which is relatively short haul and therefore difficult for rail to compete for, which places a heavy burden on the strategic road network.
- **Longer distance flows of freight are dominated by North-South movements**. Most currently moves by road, including to remote ports, which may not reflect optimal locational, modal and mileage outcomes. Switching these flows to rail or shipping through Northern ports will require investment in the currently constrained East-West axis in the North to reach ports or rail corridors for southwards movements.
- **There is heavy concentration of freight activity on a relative small proportion of the North's road and rail network** which are shared with high volumes of car and passenger train demand. The levels of utilisation and congestion that emerge present significant barriers to capacity and the efficiency of movement from/to and between North of England freight and logistics sites as well as sometimes competing demands for capacity.

Figure 4.3 illustrates these issues in more detail for 2014/15. HGV movements were heavily concentrated on a handful of roads on both the North-South and East-West axes, particularly on the M6 and M1/A1 and M60/M62. Rail freight movements were concentrated on North-South axes; the West Coast Main Line, East Coast Main Line and Midland Main Line.

Figure 4.3: Left: HGV Movements on the GB Road Network in 2014; Right: Rail Network Freight Tonnes Lifted in 2014/15



Forthcoming step changes in Northern port capacity (which include the in progress Liverpool2 scheme plus prospects for a redeveloped and expanded Lift-on/Lift-off (LoLo) terminal on the Tees and broader expansion plans for short-sea LoLo and Roll-on/Roll-off (ro-ro) on the Humber) present an opportunity for the North of England to capture a substantial increase in the share of the ferry and container traffic coming to the UK. However, without implementations of the recommendations in this report the North's ability to capture this significant opportunity will be constrained by existing transport networks:

- **Currently programmed road and rail transport network upgrades will at best, keep pace with demand**, and do not include drivers to positively change the investment and locational patterns of Northern freight and logistics. Rail freight is forecast to decline under the counterfactual 'Do Minimum'¹¹ assumptions while road freight (tonnes lifted) is forecast to grow by ~25% by 2043¹².
- **Road transport network congestion** is forecast to potentially cost the freight and logistics sector in the region of £500m per year by 2043. This has been estimated by using the DfT's own estimates of delay increases by road corridor.

4.3 Wider Constraints and Influences

Demand for freight and logistics services is driven by complex global economic and technological factors and cannot be forecast from simple aggregate assumptions around population, employment and GDP growth. The assumptions that underpin our modelling work are built around standard Treasury, WebTAG and industry trend based assumptions. As a result the impact on freight and logistics of major economic change in the North of England is not explicitly included in our central scenario and to do so would require an appreciation of what economic sectors would drive transformative change, the volumes of freight they will generate and the locational advantages they will require to be competitive.

Outputs from TfN's Independent Economic Review have been used to provide a sensitivity test in this regard. Final sensitivity testing of the implications of wider transformational growth is presented in the Technical Appendices to this report, but does not significantly change the incremental value of the recommended measures. Care is required in this regard to separate out the causal relationships between exogenous 'transformational assumptions' and the interventions and impacts of this report.

4.4 Building on Our Strengths and Harnessing Opportunities

Figure 4.4 provides a SWOT analysis of the freight and logistics industry in the North of England as it stands currently. This has been developed from stakeholder consultation, a comprehensive policy and best practice review, and use of the GB Freight Model to establish the anticipated future year market and network position (Do Minimum scenario) of the Northern freight and logistics sector. The recommendations of this report must seek to build on the North's strengths, address its weaknesses, take advantage of available opportunities and respond to threats.

¹¹ See appendix A4.4 on page 22 of the Northern Freight and Logistics Report Technical Appendices.
¹² Unconstrained forecasts produced by Network Rail in 2013 (Market study).

Figure 4.4

Strengths

Multimodal Infrastructure & Interconnectivity:

- Relatively high quality North-South road and rail infrastructure
- East and West coast ports with available capacity and international connections
- Inland waterways linking some major inland urban areas
- International airports with long haul freight capabilities (belly-hold capacity), particularly Manchester
- Good intermodal connectivity between rail and ports

Competitive Advantages for the North:

- Comparatively low land / labour costs
- Proximity of Northern ports and other infrastructure to centres of population
- Northern concentration of the UK's manufacturing base
- Less land pressure / competition between land uses (e.g. housing)
- More favourable approach to planning for logistics activity
- Concentration of world class research institutes

Enthusiasm for Public-Private Collaboration:

- Political will to develop this report based on freight's contribution to growth
- Strong private sector engagement and cooperation throughout the development of this report
- Increasing appreciation of the value of freight and logistics to society
- Public sector appetite to support private sector inward investment and development
- Positive public support as a result of manufacturing heritage

Weaknesses

Road & Rail Capacity Issues and Congestion:

- High volumes of freight on North-South corridors, sometimes representing a reliance on land based movements of goods which may be better directed to maritime routes for optimal locational, modal and mileage outcomes.
- Heavy concentration of freight activity on a relative small proportion of the North's road and rail network which are shared with high volumes of car and passenger train demand, within and beyond the North.
- Capacity issues and congestion on a handful of corridors, particularly on the East-West corridor (M62/M60)
- High reliance on the Strategic Road Network with minimal appropriate alternative routes
- Existing programmes of road and rail network upgrades will at best keep pace with passenger and freight demand
- Last mile congestion and delays at ports, particularly in Liverpool and Hull
- Lack of sufficient high gauge capacity for rail freight

Gaps in Connectivity:

- Relatively few intermodal facilities are currently proposed
- A lack of rail / air connectivity
- Limited competitive inland waterway network

A Lack of Strategic Investment and Political Impetus:

- Prioritisation of passenger rail services over rail freight services
- Difficulties in the ability to consider freight strategically, with a previous lack of pan-regional collaboration
- Lack of opportunities for the sector's voice to be heard in terms of influencing policy and impacting on the political process

Skills Shortages and Poor Services:

- A lack of skilled / qualified HGV drivers
- Poor provision of services / facilities for HGV drivers (e.g. parking)

Figure 4.4

Opportunities

Geography and Potential for Efficient Distribution:

- The location of the North of England offers it a competitive advantage through proximity to population centres and to coasts and therefore access to ports. Its location therefore offers potential for efficient distribution of goods.
- The distribution centre life cycle is typically 30 years; therefore a substantial proportion can be 'recycled' each year – potential to relocate within the North to rail/water linked sites.
- Lower cost land and labour provide competitive advantage for Northern versus Midland locations which cannot offer direct access to ports.

Capacity Development:

- Amount of available land
- Maximise use of the existing rail network, and future plans for a modern / high-speed network
- Improvements to passenger rail that release capacity for freight services e.g. HS2/Northern Powerhouse Rail (NPR) (originally termed HS3 by some)
- Port development potential (particularly the development of deep-sea container services into Northern Ports e.g. Liverpool2 and Teesport's Northern Gateway Terminal) will relieve pressure on links to the South
- Re-opening of key rail connections
- Relatively untapped potential of inland waterways
- Additional airport freight capacity

Capitalising on High Growth Markets:

- A world-leading chemical industry
- Concentration of aerospace and technology SMEs
- Waste, offshore energy, nuclear and biomass industries offer a good fit with the ports sector
- Increasing trade with the US is likely to help development of traffic through the Port of Liverpool

Enhanced Efficiency in Operations:

- Use of innovation and technology offers the opportunity for the North of England to remain competitive in the freight and logistics markets
- Working with the freight industry to raise standards and improve economic efficiency
- Freight trains are being lengthened to reduce unit costs
- Improved rail signalling technologies
- Combining rail freight with local electric vehicle distribution in the major urban areas
- Longer road trailers and intermodal units are being introduced on an experimental basis which can cut distribution costs
- Releasing existing urban warehousing space for residential development through the development of more competitive rail and water sites on the edge of conurbations
- Rail can reduce greenhouse emissions as well as providing a faster, more cost effective freight service

Policy / Legislative Change

- Key EU transport priorities and changing air quality regulations are increasing the mobility and environmental efficiency of freight transport and logistics e.g. through the promotion of Liquid Natural Gas (LNG) as a bunker fuel.
- The EU's North Sea-Mediterranean Rail Freight Corridor could extend beyond London to the North and the North-South Mediterranean Core Network Corridor could be extended to include routes between London and Scotland via the M1/A1/ECML corridor and East-West across the M62 to increase the opportunities for EU funding for infrastructure in the North.
- Government support for improved road connectivity as noted in the 2016 Budget announcement for "developing the future transformation of east-west road connections, including a new Trans-Pennine tunnel under the Peak District between Sheffield and Manchester, as well as options to enhance the A66, A69 and the north-west quadrant of the M60". The government will allocate £75m for these schemes by the end of the year, which includes funding for business case development.

Harnessing Infrastructure Resilience:

- The Dover Straits disruptions in 2015 mean some companies are reviewing their reliance on what remains the dominant route for unit load freight from the Continent to the UK
- An outward as well as an inward focus that recognises interdependencies with other UK regions and identifies 'win-win' solutions

Figure 4.4

Threats

Lack of Efficient Distribution Sites

- Rail and waterborne transport offer cost advantages over road over longer distances, and would therefore helping to reduce the North's peripherality. However, the planning system currently fails to provide sufficiently large distribution sites in the North that can support the necessary infrastructure to connect the site by rail and water. Reliance on HGVs reduces the North's competitiveness and ability to take market share.
- The opportunity to capture (or lose) distribution employment, and the multiplier impact that can have, is highly sensitive to the transport costs faced.

Network & Infrastructure Development

- Rail freight is forecast to decline in the counterfactual 'Do Minimum'¹³ scenario which will increase pressure on the Strategic Road Network.
- An increasing shortage of long distance HGV drivers increases pressure on the rail network for freight traffic
- Our forecasts are based upon the private sector having access to the requisite capacity in road, rail and water sectors; infrastructure needs to be available ahead of demand

Competing Priorities:

- An efficient freight network depends on commitment to continued and high quality investment;
- Prioritisation of passenger rail over freight rail
- Funding availability for rail investment, in particular Network Rail's forward budget

Policy / Legislative Change

- Planning timescales and delays caused by real or perceived bureaucracy
- High costs associated with planning consents
- Lengthy timescales to agree new rail paths
- Consolidation in the deep-sea container industry driven by EU legislative change in 2008 led to investment in larger ships that are deployed differently to when container terminals were designed
- A move away from carbon-intensive fuels is leading to the closure of coal fired power stations that until 2015 accounted for 10% of UK port traffic and a third of rail freight by tonne km
- Emissions regulations increasingly inform urban freight strategies – a failure to act accordingly could reduce competitiveness and the ability to expand activity in City Regions
- Whilst the push towards Liquid Natural Gas (LNG) will reduce emissions and costs of water-borne freight transportation, the upfront set-up costs of storage / bunkering are high

¹³ See appendix A4.4 on page 22 of the Northern Freight and Logistics Report Technical Appendices.

Uncontrollable External Factors:

- Ongoing concerns over the size and stability of the manufacturing sector as a market for the freight sector
- Changes in consumption, demographic and market patterns
- Unpredictable, complex global economic and technological factors that drive the demand for freight and logistics services

Changes in Commodity Production & Supply

- Global over-supply in the steel industry is driving out the less efficient older plants, fuelling an anticipation of further closures
- Crude oil is increasingly being refined near points of extraction, leading to the closure of some European refineries and a further fall in UK port throughput
- The shift in manufacturing to South East Asia, Africa and low cost 'local producers' such as in Turkey and a blurring of short and deep sea maritime networks

4.5 Implications for the Emerging Report Recommendations

The SWOT analysis above, built from our wide-ranging evidence review and consultation, presents a number of emerging considerations that have underpinned the development of the report:

- To realise their potential for the Northern and UK economy, public and private sector partners must develop a strategic, integrated, long-term commitment to investment and development of the freight industry. The stakeholder consultation has demonstrated a desire for ongoing engagement between public and private sectors to achieve a shared vision.
- The freight and logistics industry is generally highly competitive – it continually adapts and responds to changing policy and regulatory contexts and other external factors, including but not limited to trade agreements, logistics safety, freight standardisation, environmental efficiency and planning restrictions to find a suitable balance between economic efficiency and environmental sustainability.
- The freight industry lies almost entirely within the private sector and depends upon the capital invested and management skills of a large number of companies, ranging from global shipping lines, major port and distribution companies down to sole trader hauliers. These companies both compete and cooperate with each other, sub-contracting to create supply chains for manufacturers, retailers and other service providers. They react to market pressures and stimuli, investing in new capital assets to retain competitive by innovating in new network solutions.
- The opportunity to capture (or lose) distribution employment, and the multiplier impact that can have, is highly sensitive to the transport costs faced. Understanding the transport costs to freight, and how they might be reduced, is critical to the development of an effective freight strategy for the North of England.
- In order to transport goods efficiently, the freight industry is reliant on publicly provided road and rail networks, and on ports, waterways and airports that are privately provided within statutory undertakings.
- The location of the North of England offers it a competitive advantage for proximity to population and its coastal accessibility as an island, where the ports can offer gateways to low cost transportation of goods. Given the high proportion of freight moving to / from distribution centres (at least 50% of all freight tonnes) the efficient location of distribution centres at rail and water connected sites significantly reduces transport costs. Rail and waterborne transport offer cost advantages over road over longer distances, and would therefore helping to reduce the North's peripherality. These modes are also more environmentally sustainable.
- Distribution Centre 'life cycle' is typically 30 years so that a substantial proportion can be 'recycled' each year, so there is an immediate opportunity to attract these sites to the North. Lower cost land and labour provide competitive advantage for northern versus other locations. Sites otherwise left vacant as distribution centres migrate to rail and water connected sites (termed Multimodal Distribution Parks or MDPs in this report) could accommodate other uses such as residential development.
- A range of factors, including the current planning system, contribute towards continued difficulties in identifying sufficiently large distribution sites in the North that can support the necessary infrastructure to ensure connections by rail and water for these MDPs. Such connectivity may require public sector funding to ensure that MDPs can be developed in the North to offer low cost long distance transport. Proximity to air freight services further adds to their competitiveness. Reliance on the use of HGVs to transport goods to the North contributes to a reduction in its competitiveness and ability to take a greater market share, and integrate domestic and international distribution.

- The need for better-informed planning and policy practices that will remove barriers to investment and development – particularly to address the untapped demand in rail / water connected distribution sites in the North of England, and reduce the cost of moving freight by using the most economical modes and routes available.
- The existing transport networks in the North of England are not sufficient and need investment. Rail freight is forecast to decline in the counterfactual 'Do Minimum¹⁴' scenario which will increase pressure on the Strategic Road Network, and forecasts show that the requisite capacity is unlikely to be available over the period to 2033. An efficient freight network depends on commitment to continued and high quality investment. Historically, investment in transport has favoured passenger rail over freight rail. In order to cater for future requirements, rail freight paths will need to be demonstrably available ahead of demand, and improvements such as modified infrastructure / gauge upgrades on existing trans-Pennine corridors, investment in the Crewe-Warrington route prior to HS2 works and securing capacity beyond the region for example to south east ports and to Scotland are necessary. There is also a need to address pinch points on crucial links of the road network. Inland waterways can also play an important role in carrying goods to and from the ports to inland centres, cutting costs and relieving roads.
- The development of deep-sea container services into Northern Ports offers an opportunity to relieve pressure on infrastructure through the Midlands. This opportunity is strengthened by the drive by some major UK importers to diversify supply chains away from the Dover Straits to provide additional resilience. This will further strengthen the competitiveness of Northern distribution centres. It is also likely to encourage North Sea ferry operators to expand current operations and employ larger and more modern vessels, eventually LNG fuelled to reduce emissions and costs. This would significantly reduce traffic volumes on north-south motorways.
- Investment is also required to ensure that the future freight and logistics industry is sufficiently resourced and supported by a skilled and fulfilled workforce.

Section 5 sets out how the evidence and analysis presented in this Section has been used to shape the emerging recommendations of the report.

¹⁴ See appendix A4.4 on page 22 of the Northern Freight and Logistics Report Technical Appendices.



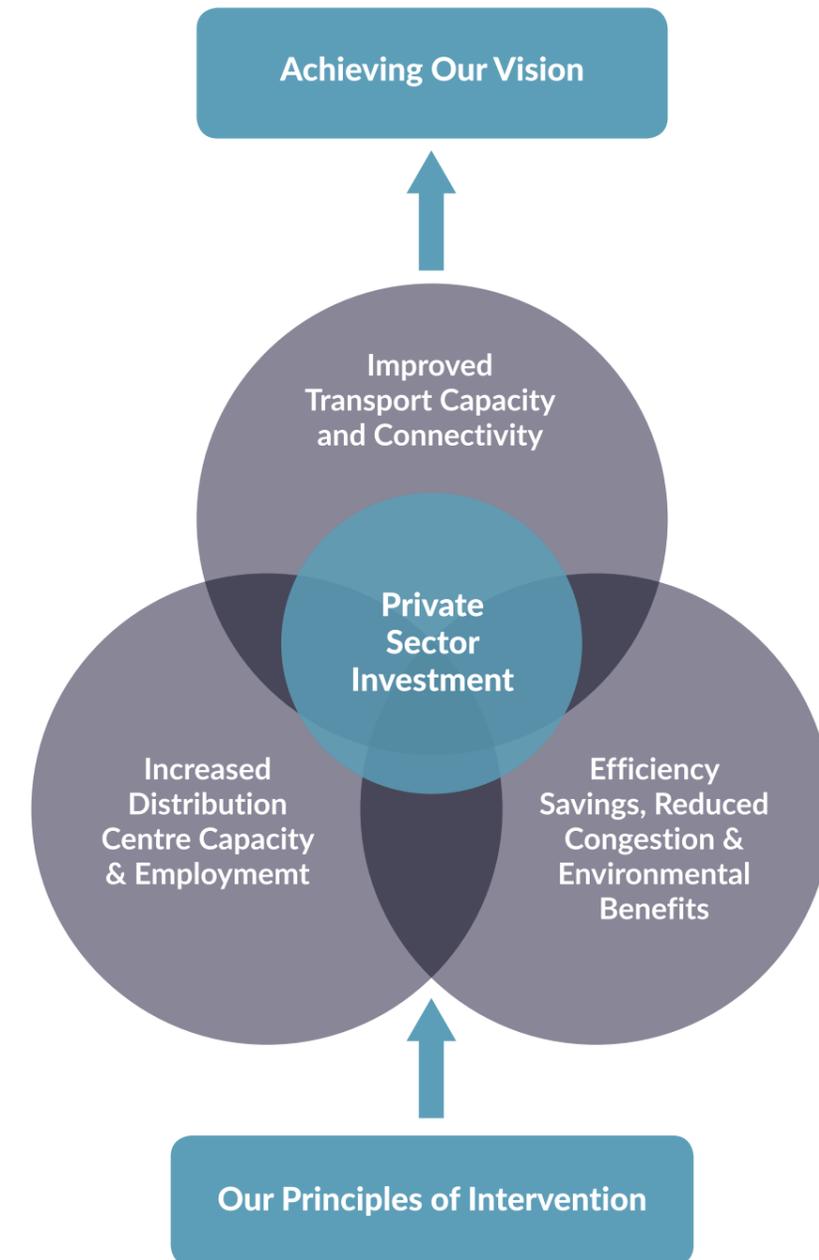


5 Shaping the Emerging Recommendations

5.1 Principles for Intervention

Figure 5.1 reiterates the three objectives that will enable us to achieve the vision as set out in Section 1.2.

Figure 5.1: Realising Our Vision

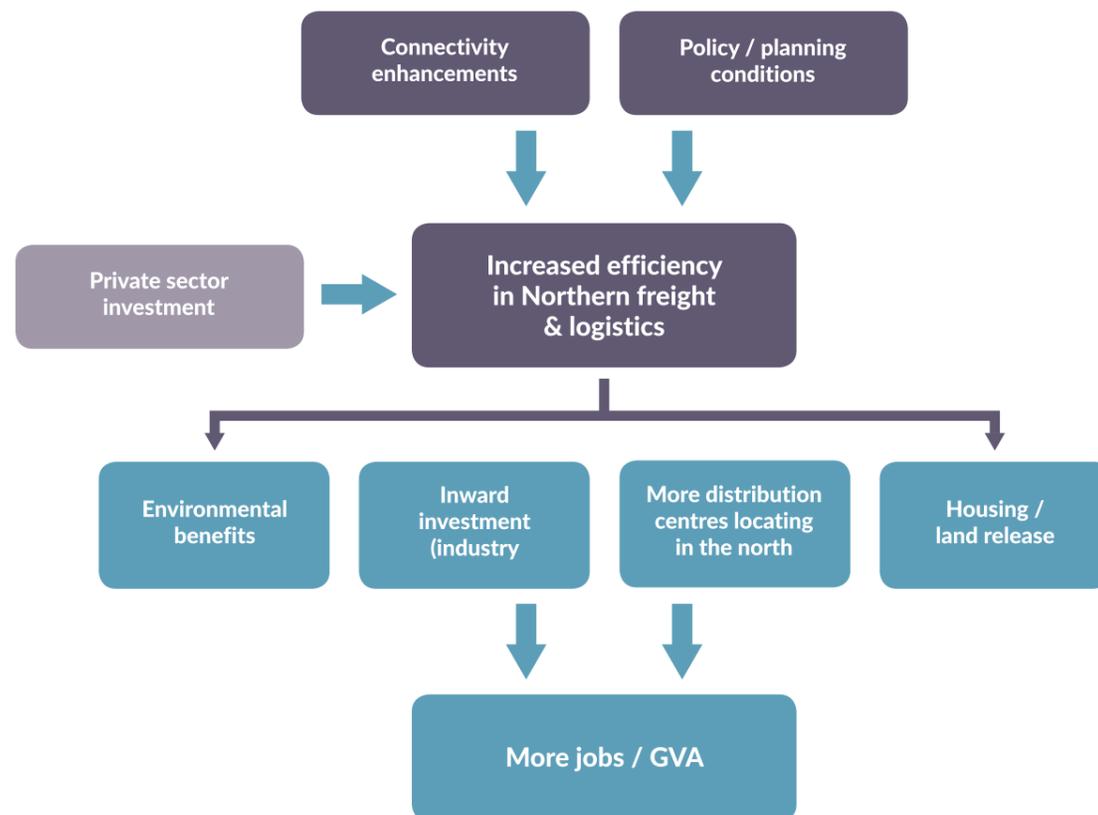


Based on the evidence and analysis presented in Section 4, a series of 'principles for action' have been developed to articulate investment priorities and define the context in which the preferred recommendations presented in this report have been developed, tested and appraised.

As set out in Section 1.3, the key interventions are:

- Increasing network capacity and resilience for freight to, from and within the North, with particular emphasis on rail and water but also addressing road pinch points, including the critical role of the M62;
- Delivering growth in strategically located rail and water connected freight interchanges / distribution parks (referred to as Multimodal Distribution Parks or MDPs in this report) in the North of England;
- Delivering growth in traffic through Northern ports by improving their connectivity and enabling shipping lines to offer more cost-effective services;
- Having effective powers in place to simplify and streamline public policy, planning and decision making processes, to improve and fast-track the implementation of public sector measures and private sector investment and innovation required to achieve a step change in the economic efficiency of moving freight in the North of England;
- Creating a long-term, consistent business environment to stimulate private sector investment in sustainable, low emission technology and distribution practices across the North;
- Creating a more efficient economy that helps secure inward investment to the Northern Powerhouse;
- Ensuring there is an effective role for the freight and logistics industry and its customers in collaborating to develop TfN's ongoing freight and logistics work and its delivery; and
- Planning for training and upskilling the next generation of the freight and logistics industry's workforce, to address the current and forecast skills and resource gaps, whilst increasing employment opportunities for people in the North.

Figure 5.3 illustrates how targeted investment based on these principles for action will generate increased efficiency in the freight and logistics industry, which will in turn lead to a series of transformative benefits.



By adopting the recommendations of this report, the public sector would be sharing a commitment to identifying investment that stimulates complementary action by the private sector in pursuit of a shared vision. Both sectors have a fundamental role to play in driving growth.

These actions would improve the efficiency in the freight industry and allow it to invest in the North, encouraging an expansion in, for example, the distribution centre market and reducing the environmental impact of the freight industry.

5.2 Approach to Recommendations Development

The aim of this report is to identify a series of short, medium and long term measures that will create the business environment and associated conditions needed to enable the private sector to respond appropriately with its own investment, building on its already strong recent track record of investment in Northern freight and logistics infrastructure. Together, this collaborative action will deliver the results needed to support the transformation of the northern economy that will lead to a rebalanced UK economy.

The following sections provide an overview of the approach taken to the development of the preferred recommendations.

In developing the measures set out within the report, we focused on those actions that can deliver efficiency savings in the freight and logistics market in the North of England. The industry is private sector driven, and as such it will only grow if a competitive business environment exists. Therefore we focused on the measures needed to deliver capacity and connectivity improvements to the transport network, supported by better planning regimes that together unlock the transformative potential of the Northern economy through enhanced inward investment. Private sector stakeholder feedback was crucial to this process and guided the development of the measures presented in this report.

The delivery of the package of measures presented in the remainder of this section could deliver transformative outcomes for the Northern economy. A package of 'hard' infrastructure measures is complemented by 'softer' policy and planning measures that aim to remove existing barriers to growth and development. The implementation of these softer measures will require TfN to explore the most appropriate delivery mechanisms with local and national government going forward.

The successful delivery of this package of measures will deliver outcomes greater than the sum of the component parts by creating a virtuous circle of investment and growth.

5.3 Consideration of Air Freight

Public sector measures to improve the North's ability to handle air freight have been considered, in light of the existing composition and distribution of the UK air freight market. However, no such measures have been included in the recommendations of this report, for the reasons presented below.

Air freight into and out of the UK is limited to around 2.5 million tonnes per annum as compared with some 500 million tonnes of goods through seaports. It is, of course, generally of high value but as a consequence, tends to be insensitive to transport costs overall.

However, within the context of the air freight transport market itself, the high cost of air freight does itself lead to a pressure to be cost effective and for 'dealing' between airlines and therefore airports to form an important driver in the way airports are selected.

Air freight can be broken down into three main sectors:

- Bellyhold, where cargo is carried in wide-body long-haul passenger jets, providing a wide variety of destinations from hub airports. Heathrow dominates the UK market.
- Freight only non-network services, which are viable on only a handful of routes.
- 'Parcel' services that operate on a hub and spoke network basis by 'integrators' (typically DHL, TNT and UPS). East Midlands and Stansted dominate the UK market.

The majority of tonnage moves by bellyhold, which is why the market is dominated by Heathrow because of the range of passenger services available.

A handful of freight-only services complement these bellyhold services where there is sufficient cargo to justify dedicated planes.

Traffic for both the above options tends to be assembled by forwarders and then passed on to the airlines based on price. The charges levied per tonne of cargo for the inter-continental leg are high relative to inland haulage costs so that a relative small difference in air freight rates between lines operating from 'nearby' airports will easily pay for extra inland haulage. In this respect, 'nearby' airports would include all those long-haul airports in the UK as well as those on the Near Continent (Paris, Brussels, Amsterdam etc). This air freight market tends to cater for shippers who need faster services than ships can offer but can tolerate transit times of 4 or 5 days. Given road freight transit times from (say) the Manchester area to Heathrow, Paris, Brussels or Schiphol is less than 24 hours, it is clear that most of this market can tolerate a few extra hours of inland haulage to secure a better price.

In this market, it follows that if airports in the North are to secure a greater market share then they will need to win more wide body long haul passenger services. This explains why only Manchester secures significant volumes as it has the majority of wide body jet services from Northern England to markets such as North America, China and the Middle East, particularly Dubai. The promotion of long haul passenger services is therefore the means by which more air freight can be secured.

The integrator sector carries more urgent parcel traffic based upon hub and spoke networks offering (typically) two day intercontinental transits. Spoke services from the UK from East Midlands and Stansted serve NW European hubs at airports such as Brussels and Frankfurt. The need for frequency tends to mean that typically only one 'spoke' can be justified per company per country. In practice, the level of accessibility that major northern cities (e.g. Leeds, Sheffield and Manchester) share with East Midlands airport is similar to that of London.

Table 5.1 describes data from the CAA on UK airfreight by airport. While tonnages remained very stable between 2004 and 2014, the share through Northern airports fell during this period. 90% of tonnage through Northern airports in 2014 was through Manchester.

Table 5.1: UK Air Freight Volumes by Airport Group 2004-14 (thousand tonnes)

Area	04	05	06	07	08	09	10	11	12	13	14	%
North of England	161	157	156	173	150	107	121	112	101	101	99	-62%
London area	1,795	1,789	1,717	1,724	1,743	1,564	1,808	1,803	1,806	1,761	1,820	+1%
Other South of England & Midlands	300	300	322	326	307	302	324	310	319	322	300	0%
Scotland, Wales & N Ireland	124	126	129	111	91	83	77	78	82	84	91	-37%
Total UK	2,380	2,372	2,324	2,334	2,291	2,055	2,331	2,303	2,307	2,268	2,310	-3%

Source: Civil Aviation Authority

We have also used road haulage data to estimate the proportion of air freight cargo to and from the North that uses Northern airports. It has to be recognised that some of this tonnage will reflect retail goods sold at the respective airports but we believe the data does broadly reflect performance. Our conclusion from this analysis is that Northern England accounts for around 14% of total UK airfreight and that its airports (principally Manchester) secure around 30% of that available market.

It is difficult to identify any specifically freight oriented interventions that could assist Northern Airports to secure air freight. The most positive action would be to promote long haul passenger markets. However, it is the case that the logistics industry (and its customers) around a relevant airport does benefit because it has nearby access to airfreight services. This provides benefits to the logistics sector in the Greater Manchester area in particular, as it provides local access to air freight capacity to a range of long-haul destinations around the world.



5.4 Identification of the Recommendations

The package of measures set out in the recommendations was identified as part of an iterative process, where the GB Freight Model (which forms part of the DfT’s National Transport Model) was used to quantify the reaction of the freight industry to a range of public policy changes and network upgrades. Qualitative appraisal was undertaken for ‘softer’ measures that can promote efficiency but which cannot easily be quantified, particularly in the context of urban freight distribution where broader objectives are sought. The addition and subtraction of different measures was considered in order to arrive at a solution that we believe produces a sustainable way forward that will attract positive support from the private sector.

To support the development of the recommendations a number of sensitivity tests were undertaken that explored alternative and enhanced interventions. The additional roads investment focused sensitivity ‘bundle’ was one such option and included testing of the proposed trans-Pennine tunnel between East Manchester and Sheffield. This test identified significant benefits of the tunnel concept for freight, and would therefore be a welcome development that would further support the recommendations of this report. However the tunnel concept was not included in the report, given that, if approved, it is likely to be constructed outside of the report’s timeframe of 2033.

Given the inevitability of unforeseen change, TfN should also put mechanisms in place to monitor change and adapt the recommendations accordingly in order that it remains flexible and relevant to prevailing market conditions over the long term.



6 The Recommendations

6.1 A Package of Public Sector Investment

As stated in Section 1.2, this report seeks to:

“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”

This transformative outcome will be delivered through a coordinated package of public sector measures that build on the existing strengths of the freight and logistics industry in the North and which help to deliver an environment that promotes confidence amongst the private sector that enable it to deliver its own investment.

The measures come together as a package of public sector interventions that will reduce costs for industry, lower barriers to investment, growth and development and facilitate growth in logistics activity in the North. The measures are sub-divided into four thematic categories: three modal categories (rail; waterborne freight and road) and an overarching planning and policy category as set out in Figure 6.1.

Figure 6.1: Report Focus

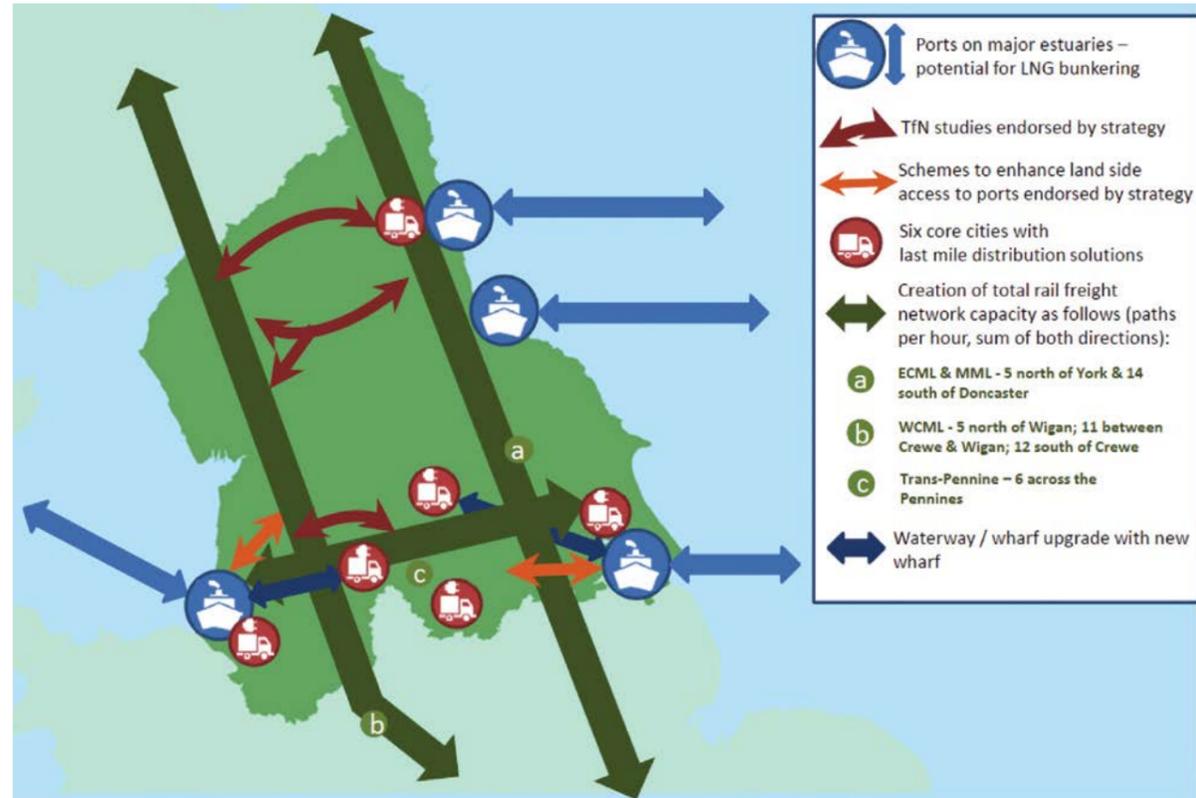
Recommendations centred on rail/port-centric multimodal distribution that will reduce barriers to investment, growth and development and facilitate growth in the Northern economy			
Rail Additional capacity on East-West & North-South axes Chained Multimodal Distribution Parks	Waterborne Freight Enhanced port/hinterland connections New infrastructure at ports e.g. LNG bunkering	Road Capacity & connectivity improvements Supporting infrastructure e.g. HGV parking Improved signage	Policy & Planning Delivery of Multimodal Distribution Parks Harmonised regulations for HGV access to urban areas

The remainder of this section sets out the key recommended measures in more detail. It is important to note that the successful delivery of the recommendations in terms of achieving the results presented in this report requires a complete and cohesive implementation of the principles of all the public sector measures over the next 20 years. The list of measures is not exhaustive; and other existing and future measures implemented in response to changing market conditions can also support the North in achieving its vision.

6.2 Recommended Interventions

The overall package of public sector measures to stimulate a complementary private sector response is illustrated in Figure 6.2. Further detail is provided in Sections 6.2.1 to 6.2.5.

Figure 6.2: Public Sector Package of Measures



6.2.1 Rail

One of the threats to the growth and development of the freight and logistics industry in the North is the lack of capacity on the existing rail network to accommodate growth in rail freight traffic. As the report focuses on rail/port-centric distribution, with a transfer of North-South road haulage to rail based on efficiency gains, additional rail capacity along both North-South and East-West axes is needed, supported by improved road access to ports.

Table 6.1 outlines the key proposed public sector recommended measures with respect to rail. The measures that aim to achieve additional rail freight capacity have been identified based on an examination of how many rail paths are needed per hour on key axes. The report is not however prescriptive on how this additional capacity will be made available. It is premised on the commitment that capacity will be made available in advance of forecast demand (to secure private sector investment); and that active negotiation will be required from TfN to reserve this additional capacity for freight. Incremental expansion in capacity will be required more or less immediately to provide the private sector with the confidence to invest in additional equipment and terminals so that forecast growth can be reached in a progressive and sustainable manner.

Table 6.1: Proposed Rail Interventions

Aim	Key Recommended Measures	Delivery of Transformative Outcomes
Additional trans-Pennine rail freight capacity	Development of and securing for the freight industry 3 freight paths per hour in each direction crossing the Pennines	Step change in capacity to secure modal shift with economic and environmental benefits. Reduction in travel time and consequent decrease in costs to further support market growth. Bringing all areas of the north closer together through investment to reduce travel time and support sustainable freight movement
Additional north-south rail freight capacity to support enhanced access between markets in the north and south of England	Development of a new North-South rail passenger route (HS2) – diverting passenger services from the WCML. Securing 2.5 freight paths per hour north of Wigan in each direction; 5.5 between Crewe and Wigan in each direction and 6 southwards of Crewe in each direction	Step change in capacity to secure modal shift with economic and environmental benefits. Enhanced access to markets will enable business in the north of England to enjoy improved connectivity with customers and suppliers through both northern ports and southern gateways to mainland Europe
	Creation of additional network capacity in advance of forecast demand on the East Coast Main Line and Midland Main Line e.g. passing loops, in-cab signalling, electrification and potential line re-openings to achieve and secure 7 freight paths per hour south of Doncaster in each direction and 2.5 per hour north of York in each direction	Step change in capacity to secure modal shift with economic and environmental benefits
UK Ports southern rail capacity	Securing paths for Key Northern corridors is not enough. Complementary measures to provide additional paths to Southern Ports are also key with a recommended requirement of 4 paths per hour to Felixstowe to/from the North in each direction.	Step change in capacity to secure modal shift with economic and environmental benefits It is important for Northern England to enjoy several potential gateways to the deep-sea market to ensure low cost and resilient access.
Additional pan-network capacity to support continued growth in the freight and logistics sector through enhanced access to markets. Proportionate and timely investment in advance of the development of HS2/NPR in order that the freight industry is able to benefit immediately from the work and support of TfN	A package of infrastructure solutions in line with Network Rail's declared aspiration to allow the use of 750 metre trains on intermodal routes, and also the use of 20% more operational hours per week through continued changes to maintenance regimes. Cohesive W10/12 loading gauge access to ports and MDPs on intermodal routes (including trans-Pennine).	Sufficient private sector confidence to invest in new terminals and railway equipment to capitalise on the growing opportunities available
Opportunities for rail-based access to new and existing markets not previously accessible by rail	Well located MDPs that allow good access to the rail network. Also, enhanced connections for market or efficiencies opportunities e.g. aggregates.	A broadened ability of the freight and logistics industry to access a wider range of markets and customers

NB the rail freight paths referred to in Table 6.1 refer to off-peak paths per hour in each direction, to the nearest 0.5 paths. These have been calculated on the basis of 18 off-peak hours per day and path utilization of 85% for intermodal trains.

External factors such as the construction and operation of HS2, the redevelopment or relocation of Crewe station and adding to the number of trains sharing conventional tracks with freight north of Crewe could have a serious impact on rail freight capacity and it is important that a substantial proportion of off-peak network capacity released on the conventional network after HS2 is completed is made available for freight to reach destinations in the South. TfN should play an active role alongside other stakeholders to ensure this is achieved.

Infrastructure solutions will be complex north of Wigan, involving potential adjustments to existing and/or future passenger timetables. Significant interventions will be needed to expand North trans-Pennine capacity; for example the re-opening of lines such as Matlock-Buxton or significant investment in alternative capacity solutions, and a trans-Pennine route with W10/12 gauge clearance. Action is also necessary to address capacity constraints on the two-track section of the ECML north of York, possibly by the re-opening of the Leamside Line.

In the long term TfN will seek for Northern Powerhouse Rail to be planned to provide similar freight benefits to those aspired to from HS2; the release of capacity on the network to provide the volume of paths noted in Table 6.1. However in advance of this longer term proposal it is essential that incremental enhancements through the short and medium term (through Control Periods CP6 & CP7) are identified and delivered. As TfN seeks to absorb and formalise Rail North's franchising role within its remit there is a clear opportunity for TfN to provide strategic guidance around freight network capacity in the North and make a strong case to secure access to the North-South paths identified in Table 6.1. Strategic and economic consideration of the right balance between passenger and freight service frequencies, and their relative speed in both the short and long term, will need to be carefully considered to optimise the benefits of the proposals. The relative roles of the current main North trans-Pennine (Diggle) route, the Calder Valley, Hope Valley and a potential new East-West Northern Powerhouse Rail alignment will need to be quickly defined to optimise provision and meet the stated freight requirements and passenger demands. Where proposals are currently being developed for electrification and route enhancements there is arguably a short, once in a generation, window of opportunity to ensure the right strategic trans-Pennine capabilities are provided for both passenger and freight services. The Cumbrian Coast line will require significant infrastructure improvement to support delivery of new nuclear electricity production and transmission.

A degree of expansion in capacity will be required relatively soon to provide the private sector with the confidence to invest in additional equipment and terminals (and other components of the wider recommendations) so that the forecasts set out in this report can be reached in a progressive and sustainable manner.

This report also proposes a package of infrastructure solutions to follow Network Rail's declared aspiration to allow the use of 750 metre trains on intermodal routes, the use of 20% more operational hours per week through continued changes to maintenance regimes and W10/12 loading gauge access to ports and MDPs on intermodal routes. Additional measures including passing loops, in-cab signalling and electrification are also supported where required, as well as enhanced network management including the relinquishment of unused paths. This represents a significant, but we believe deliverable proposition and TfN will work closely with Network Rail, DfT and other stakeholders to help achieve these strategic operational and infrastructure capabilities.

In addition, this report proposes the chaining of Multimodal Distribution Parks; that is finding the most appropriate East-West route to link most or all of the terminals developed to the East Coast Main Line, West Coast Main Line and the ports in the most cost effective way in terms of the level of upgrades required. The development of a coherent corridor of MDPs will maximise transport efficiencies across rail road and water networks. It will be most important that TfN steers a process whereby the network provider delivers capacity ahead of demand to ensure that the private sector has sufficient confidence to invest in new terminals and railway equipment to capitalise on the opportunities available.

6.2.2 Waterborne Freight

Waterborne freight offers the North a key opportunity to reduce freight costs and assist with market competitiveness. The diversion of short and deep-sea freight towards Northern ports will reduce user costs and therefore improve the overall efficiency of the UK economy in general and the North in particular.

It is recognised that the private sector is the driving force behind the waterborne freight industry and that the potential for public sector intervention is currently limited by national policy. There is already a significant amount of work taking place in the private sector; in particular evidenced by the level of investment being made in Liverpool2 and at Teesport. The measures suggested in this report in terms of what the public sector can deliver, as set out in Table 6.2, are comparatively small. The more important factor to support the waterborne freight industry is investment in improving land-side connectivity, for which recommended proposals are made under the road and rail thematic categories.

Table 6.2: Key Public Sector Measures: Waterborne Freight

Aim	Key Recommended Measures	Delivery of Transformative Outcomes
Enhanced connectivity to Northern ports to support the development of sustainable shipping services and enhanced connectivity to their hinterlands	Financing for port / hinterland connections and infrastructure to support Motorways of the Sea services	Further development of pan-European trade networks and freight movement to reduce the cost of freight transport and increase the competitive market position of the North
Enhanced connectivity for Multimodal Distribution Parks (MDPs)	Public sector funding where required to link Multimodal Distribution Parks (MDPs) to the rail and waterborne freight networks.	Improved cost efficiency through reduced user costs and reduced environmental impacts from greater use of waterborne freight services.
An ability to improve the competitiveness of Northern Ports and thus support growth in traffic using these ports through a reduction in freight costs	Public sector support for Liquid Natural Gas (LNG) bunkering and cold ironing infrastructure at ports	LNG bunkering infrastructure offers a cheaper and more environmentally friendly alternative to the use of the main maritime bunker fuels. This will help to make long distance ferry services through Northern ports more competitive and will support carbon reduction aspirations and efforts to tackle climate change as well as assist economic efficiencies to drive growth, lower costs and secure inward investment. There are also potential longer term options for the use of LNG for road haulage. Cold ironing should be considered for all UK ports to improve air quality for all port cities and to ensure that individual ports are not discriminated against. In future, there is a further opportunity to make use of a sustainable power supply for cold ironing e.g. solar/wind power.
Cost effective waterborne access to markets in West Yorkshire and across the North	Upgrade the Aire & Calder to Class II waterway as far as Leeds (as per South Yorkshire waterway) to reach new quay at Stourton	Reducing the cost of transport and providing a market competitive transport offer and reduced environmental impacts from greater use of waterborne freight services.

Inland waterway locations provide further opportunities to establish logistics and processing developments that enjoy low cost freight transport access. In the North the most obvious opportunities are from the Mersey along the Manchester Ship Canal at sites such as Port Warrington, Port Salford and Runcorn, all accessible to ships of more than 5,000 tonnes deadweight capacity. From the Humber there is a much more extensive waterway network accessible to barges of around 600 tonnes capacity that could be brought up to Euro Class II standard (approximately 700 tonnes capacity). These waterways provide access to sites in Leeds, Wakefield, Rotherham and along the Trent. In both cases, the respective waterway authorities (Peel Ports and the Canal & River Trust) are currently developing waterside opportunities.



6.2.3 Road

Although this report is predominantly rail and port centric, improvements are needed to the road network to improve capacity and connectivity to ports and freight interchanges to ensure that forecast future traffic growth does not adversely impact the efficiency of the sector. Table 6.3 sets out the key road measures proposed in the report. In particular the report endorses ongoing studies carried out by TfN and the DfT to examine the potential delivery of additional capacity on the M60 (which is forecast to carry an additional 2.3 million HGVs per annum by 2033; equivalent to an extra 0.5 motorway lanes), on the A66/A69 trans-Pennine route, which would provide resilience for freight access to the Tyne and Tees in particular, and the provision of improved road infrastructure between Manchester and Sheffield. This is currently the subject of a study to deliver a new trans-Pennine tunnel under the Peak District. Business cases for these schemes are to be developed by the end of 2016, using the £75m funding allocation from the Transport Development Fund.

Table 6.3: Public Sector Measures: Road

Aim	Key Recommended Measures	Delivery of Transformative Outcomes
An increase in capacity and resilience on key parts of the highway network	Endorsement of existing studies being carried out by TfN into Manchester North West Quadrant (M60), Northern trans-Pennine (A66/A69) potential capacity improvements and improvements between Manchester and Sheffield.	Additional capacity and resilience will increase the efficiency of the road freight industry in the North, making it a more competitive location for all types of economic activity.
Safe and secure parking for HGVs as they use the highway network; for example at Multimodal Distribution Parks	Development of a network of secure HGV parking facilities, e.g. at rail connected warehousing sites	Ensuring the safety of HGV drivers and greater security for their vehicle and loads at cost-effective locations in the North
Improved local road access to ports in the North to address congestion and capacity issues	Delivery of substantial improvements to land side access to ports e.g. Liverpool and Hull	Removal of local capacity and congestion issues will allow the North's ports to operate more efficiently and attract additional traffic
Support for HGV companies and drivers to ensure that the network is used efficiently and appropriately	Implementation of appropriate vehicle signage and routing plans	Efficient and appropriate use of the road network
Increased capacity and resilience across the highway network both at a local and pan-regional level	Existing proposals for local road network upgrades – including existing A road capacity upgrades, existing A road interchange / junction improvement schemes, existing link road / relief road / orbital road / bypass schemes, existing motorway interchange / junction improvement schemes and existing smart motorway schemes	Pan-Northern investment in strategic and local road network improvements to ensure that all parts of the North benefit from increases in the efficiency of the road freight industry in the North, making it a more competitive location for all types of freight traffic and securing wider economic benefits and inward investment

A series of other strategic and local road upgrades being taken forward by Highways England, Local Enterprise Partnerships and Local Authorities, including new link roads, junction capacity improvements and upgrading works are endorsed by this report and a full list of these is provided in the Technical Appendix of the Report.



6.2.4 Policy and Planning

Underpinning the mode-based measures is a package of policy and planning measures that will simplify and streamline processes to stimulate and support a greater level of investment. Table 6.4 sets out the key policy and planning measures proposed by this report.

Key to successful delivery of the report recommendations is the ability to provide at least 50 hectares of sufficiently large sites per annum for development as MDPs, where connections to the rail and/or water network can be achieved to offer improved efficiency in onward distribution. At present, sufficiently large sites with the appropriate connections are not being brought forward, largely as a result of the uplift in land value needed as a result of planning permission being granted to develop the required connections, and the fact that many suitable sites are Greenfield sites protected by planning policy. Road connected sites are therefore typically much less costly and quicker to bring forward.

In future, connections could be supported by the public sector where the uplift in the land value as a result of planning permission is not sufficient to facilitate this by the developer. The precise mechanism for TfN to achieve this level of MDP provision is not defined in this report but we will explore with national and local government the best way to achieve these land use outcomes.

The report also proposes the development of a consistent, harmonised approach to the regulation of access by freight vehicles in urban areas. The consistent development of regulations across the major Northern cities will encourage investment in sustainable 'last mile' distribution solutions and environmental impact mitigation. This will be rendered more practical by locating future MDPs at the edge of urban centres, within the range of electric vehicles rather than in more remote rural settings between conurbations. This will also encourage sustainable access to work by employees.

Underpinning the future growth of the freight and logistics industry is investment in future generations of freight and logistics employees that encourages and supports them in gaining the training, qualifications and experience needed to serve the growing industry in the North. We will therefore also consider how we can help encourage the supply of suitably qualified and skilled labour over the longer term, based on a comprehensive assessment of supply and demand for training and education and in support of existing and future programmes that will support the economic transformation of the North.



Table 6.4: Key Public Sector Measures: Policy and Planning

Aim	Key Measures	Delivery of Transformative Outcomes
<p>The provision of at least 50 hectares per annum of sufficiently large distribution sites that have the potential for rail and/or water connections and which are located on sites that 'futureproof' for longer term sustainable last mile solutions</p>	<p>TfN to explore with local and national government the most appropriate mechanisms to secure an accelerated build out of well-sited MDPs and to identify the best ways in which public sector support for transport infrastructure such as rail connections can be provided</p>	<p>The North secures additional MDPs in the required locations to allow the freight and logistics industry to both increase its competitiveness and, over the longer term, reduce its environmental impact through the introduction of sustainable low/zero carbon last mile delivery solutions</p>
<p>Simplified and streamlined planning and policy processes to stimulate and support a greater level of investment through a more competitive environment</p>	<p>TfN to engage with similar sub-national transport authorities to develop strategies of mutual benefit TfN to work with the National Infrastructure Commission (NIC) TfN to work with 'Business North'</p>	<p>A greater level of investment in freight and logistics in the North, driven by improved private sector confidence</p>
<p>Definition of the provision and performance of the transport network in the North</p>	<p>TfN to specify the required outputs such as capacity and performance of road and rail networks</p>	<p>The North drives the development of all aspects of the transport network to support enhanced economic growth, based on a firm understanding of the local area</p>
<p>A framework within which the North can work as one to address significant air quality issues which currently impose a serious cost on the Northern economy</p>	<p>Development of a consistent, harmonised approach to the regulation of access by freight vehicles in urban areas</p>	<p>The North is able to address concerns about air quality and expand economic activity in its cities, as well as make its cities more attractive places to live and work</p>
<p>A long-term supply of suitably skilled and qualified labour that supports a growing freight and logistics industry in the North of England.</p>	<p>TfN support for and promotion of existing programmes commissioned and funded by bodies such as BIS/ SKA and to lobby for further funding and wider programmes. TfN to carry out an assessment of supply and demand for training and education in relevant freight and logistics skills in the North. TfN to then develop a plan to ensure the supply of skilled labour over the long-term.</p>	<p>A growing freight and logistics industry that offers positive, achievable employment opportunities to local people in the North of England.</p>

6.2.5 Complementary National Policy

Although not explicitly included as measures in this report for TfN to take forward, there are also complementary policy initiatives and measures being developed at national and local levels that will have a positive impact on the Northern freight and logistics industry:

- **National Permissions for Longer Semi-Trailers (LSTs)** – in 2012 the Department for Transport began a trial of LSTs for articulated goods vehicles to assess the level of associated environmental and economic benefits. Over ten years, the trial is expected to save over 3,000 tonnes of CO2 with an overall economic benefit of £33 million over 10 years. The 2014 Annual Report (published in July 2015) reported that 4.2 to 5.2 million vehicle kilometres were saved as a result of using longer semi-trailers up to December 2014.
- **Freight Quality Partnerships (FQPs)** – FQPs are where groups of transport operators and local authorities come together to coordinate freight access and deliveries in a particular location; and may be developed for small geographical areas such as a business estate or larger City Region areas such as the North East. It is not proposed that TfN takes an active role in the development of FQPs; however FQPs developed at a more local level will complement the wider aims of the report in terms of efficiency gains and associated cost savings and air quality benefits, and could form part of the delivery mechanism for last mile distribution solutions. The Action Plan presented in Table 8.1 proposes ongoing dialogue between the public and private sectors as part of a dedicated forum, which may take the form of a freight and logistics sub-panel of Business North. This could also support the development of FQPs.

6.3 Anticipated Private Sector Response

The report's recommendations are premised on an anticipated response from the private sector to public sector investment, in seeking efficiency gains. We anticipate private sector action in three key areas: the development of MDPs that offer road, rail and / or water connectivity, changes to the short sea and deep sea shipping industry services that increase traffic through Northern ports and greater investment in equipment (locomotives and wagons etc). Each of these anticipated responses is explained in further detail in the following three sections.

In so far as the responsiveness of the private sector to infrastructure intervention is concerned, it is important to recognise that few container shipping lines or shippers engage in long term contracts with each other, ports or rail service suppliers. In order to remain cost competitive, operators are obliged to seek lowest cost solutions. It follows that if providing extra rail network capacity expands the proportion of maritime containers that can access rail then, if using those services reduces costs below those of using road, take up will be relatively rapid. Similar principles apply in the logistics market; shifting cost profiles that reduce the relative cost of a northern location can be expected to encourage more warehousing to be demanded in the North. Warehousing stock is replaced every 25 – 30 years and this infers that the property market has scope to readily and continually adjust.

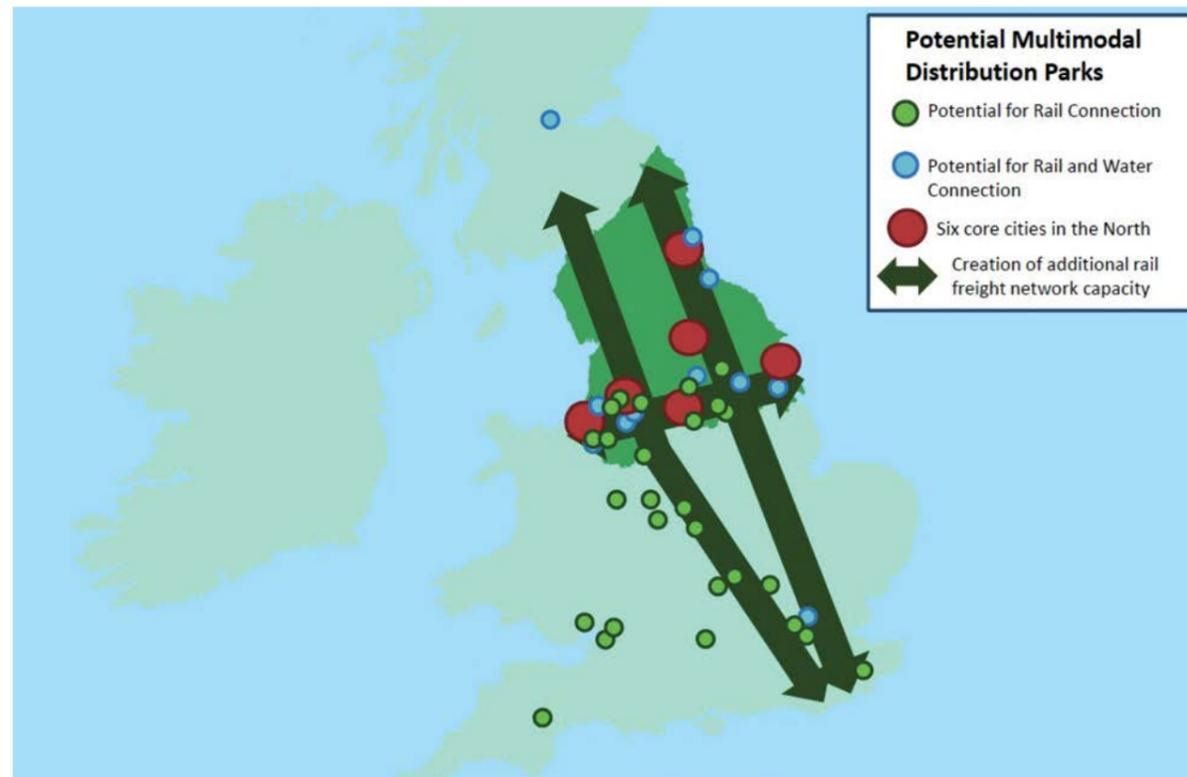
6.3.1 Development of Multimodal Distribution Parks (MDPs)

Although there are already a number of MDPs in the UK, there is scope for significant further development. The recommendations will have the effect of reducing the cost of distribution to and from distribution centres in the North relative to other regions and, we estimate, on its own will lead to the private sector choosing to build an additional two million square metres of B8 space in the North by 2033. This has the potential to generate up to 38,000 jobs in the same time frame. We have assumed that a planning and policy environment that is more favourable to locational decisions in line with this report (and in some instances potential public funding of suitable connections) will lead to 50 hectares of rail or water connected distribution parks being developed annually. The resulting reduction in onward road delivery costs will render rail and water modes more competitive and thereby further improve efficiency levels in the freight industry. MDPs will also form ideal locations for manufacturing plants that involve large volumes of freight because access to rail or water transport services supported by freight from logistics buildings will minimise freight costs. It will be important that planning applications reflect this potential synergy.

Figure 6.3 illustrates the location of potential MDPs. As described in Section 6.2.4, there is currently a lack of sufficiently large sites with the ability to provide the required rail and water connections being brought forward, due to difficulties in bringing suitable sites forward through the planning system and achieving the uplift in the land value needed to install the required connections. This is further exacerbated by the fact that land values in the North are on average lower than those in the Midlands and in the South.

However, without a sufficient number of sites that are rail and/or water connected, the North cannot secure a greater market share of logistics activity as it is often more expensive to transport goods over longer distances by road. Larger sites are needed to generate sufficient revenue to justify the investment needed to build a rail terminal and a connection to the network; and the planning system must be more favourable and better inform developers of where suitable land parcels exist in order to enable these sites to be brought forward.

Figure 6.3: Potential Multimodal Distribution Parks



There are a number of assumptions that assist the development of port-centric distribution (i.e. MDPs located in ports) specifically, including more traffic coming through the major ferry and container ports in the North, enhanced rail freight services (for container traffic) and improved 'last mile' road schemes. As demonstrated in this report, this is mainly achieved through relatively modest public sector investment in infrastructure to provide a suitable investment environment for the developers of warehousing in ports.

6.3.2 Shipping Industry

A number of the public sector measures presented in this report are aimed at encouraging and facilitating a rebalancing of existing shipping lines. The following two sections look at potential responses from the short and deep sea shipping industries.

Figure 6.4 shows the existing and potential future short sea shipping practices that could occur as a result of implementing the recommendations of this report. At present, a substantial proportion of freight travelling between Continental Europe and the North travels as driver-accompanied trucks on crossings and via long distance road haulage, making use of the ferry crossings or Channel Tunnel shuttle across the Dover Straits. Freight arriving in the North is then delivered to distribution centres or to factories for processing.

An alternative future scenario is for a higher proportion of ro-ro freight to travel as unaccompanied freight on board ships directly between Continental Europe and Northern ports via expanded shipping services. The North-East ports already dominate UK trade with Scandinavia and the Baltic. This is reliant on improved road and rail connectivity to Northern ports and enabling ferries on those shipping routes to use LNG as a bunker fuel in the medium term. Once bunkering facilities are in place, LNG will generally offer a lower unit cost than existing maritime bunker fuels; therefore the unit cost per nautical mile is lower for the same amount of cargo moved, helping longer distance services to be competitive. Our approach was to assume the same ratio between diesel and LNG prices in 2033 as in the base year and to base our assumption on energy prices in 2033 on WebTAG guidance.

It then becomes cheaper for ferry operators to attract traffic to their services via Northern ports. Shipping economies of scale through the deployment of large ferries further reduce unit costs and these cumulative cost savings are then passed on through reduced freight rates within the context of the competitive nature of the freight industry. A switch of a significant proportion of freight traffic from southern to northern ports will also improve the resilience of northern supply chains, allowing cargo owners to operate along alternative routes and thereby avoid the knock on impacts of disruption such as was experienced on the Dover Straits in 2015.

The public sector interventions presented in this report, including enhanced road and rail connectivity to ports and funding for LNG bunkering facilities (through TEN-T and CEF funding) and the expansion of distribution centre activity in the North would together be responsible for achieving this change in shipping practices.

Figure 6.4: Short Sea Shipping

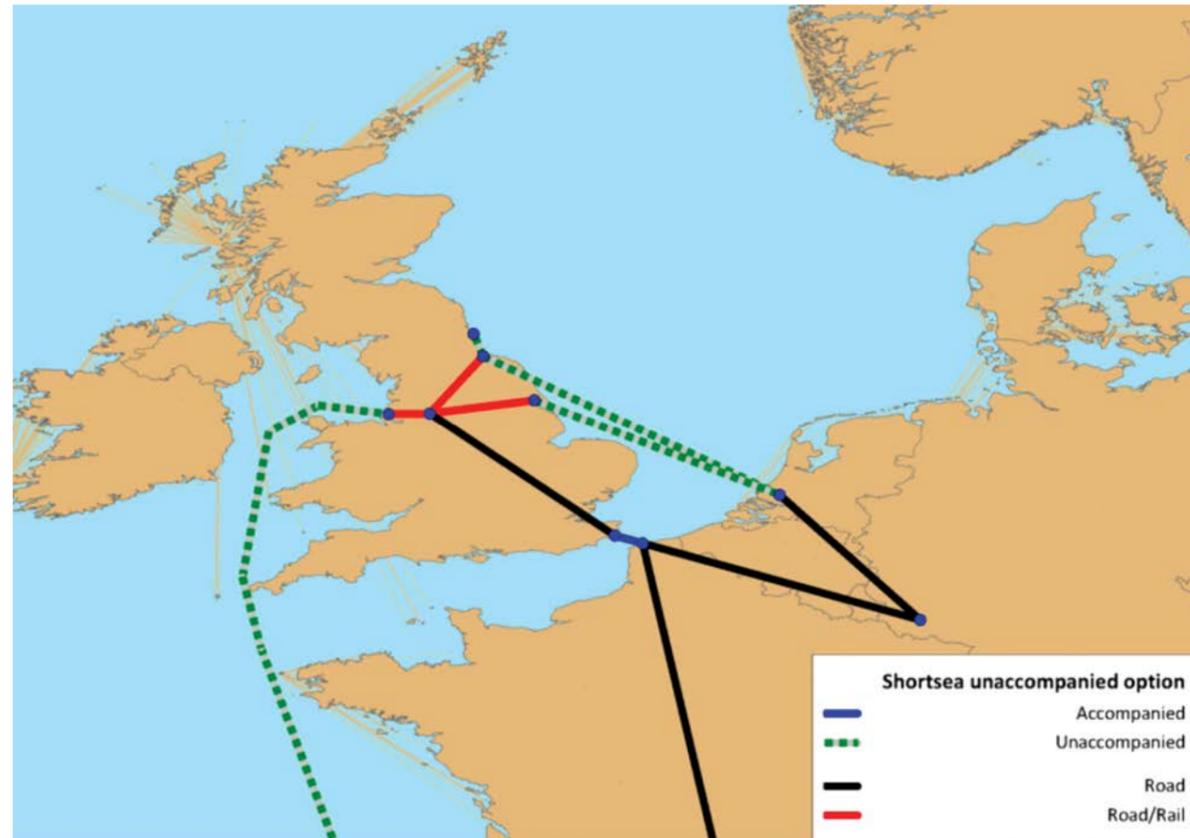
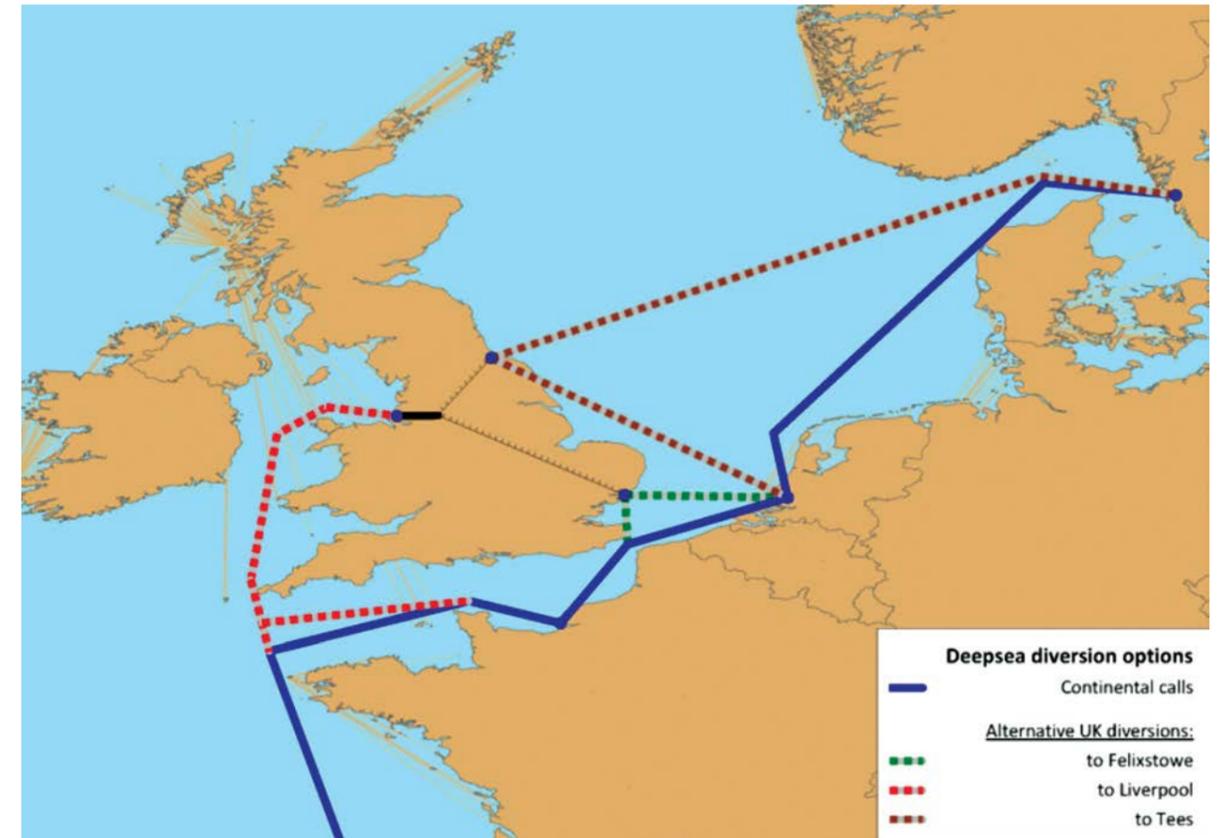


Figure 6.5 shows the existing and potential future practices in the deep sea shipping industry. At present, large LoLo ships serving deep-sea cargo markets (such as China) call at major ports in North West Europe such as Rotterdam, Hamburg and Antwerp, where cargo is loaded and unloaded. The ships serve the UK by calls at Southern ports such as Felixstowe or Southampton, as these are closest to the main shipping route to and from ports such as Rotterdam. Containers destined for the North travel predominantly from the Southern ports by rail or by feeder ship from Rotterdam and Antwerp, some calling at Felixstowe, with some road distribution for collections and deliveries.

In the future, deep water container terminals at Liverpool2 and potentially Teesport's Northern Gateway Terminal will have the capability needed to directly accommodate such global deep sea shipping services. However, shipping companies will only be attracted to use these ports if they can achieve an overall door-to-door cost reduction per container. For example, as Liverpool is closer to the centre of the UK than southern ports, inland costs can be reduced, providing the incentive for ships to divert from the main route along the English Channel. Shipping lines could adopt different strategies to provide lower cost alternatives while serving Liverpool and Teesport's Northern Gateway Terminal. Such new strategies will be assisted by improved road access to ports and the development of additional MDPs sited at or close to ports; for example around the Tees and Liverpool.

Figure 6.5: Deep Sea Shipping



6.3.3 Equipment

Implicit in the private sector response to the measures set out in this report is investment in new equipment. Additional freight traffic on rail and a growth in shipping traffic will require investment by freight operators, including new locomotives, wagons and (LNG powered) ferries. There will also be a requirement for additional equipment at ports and terminals.

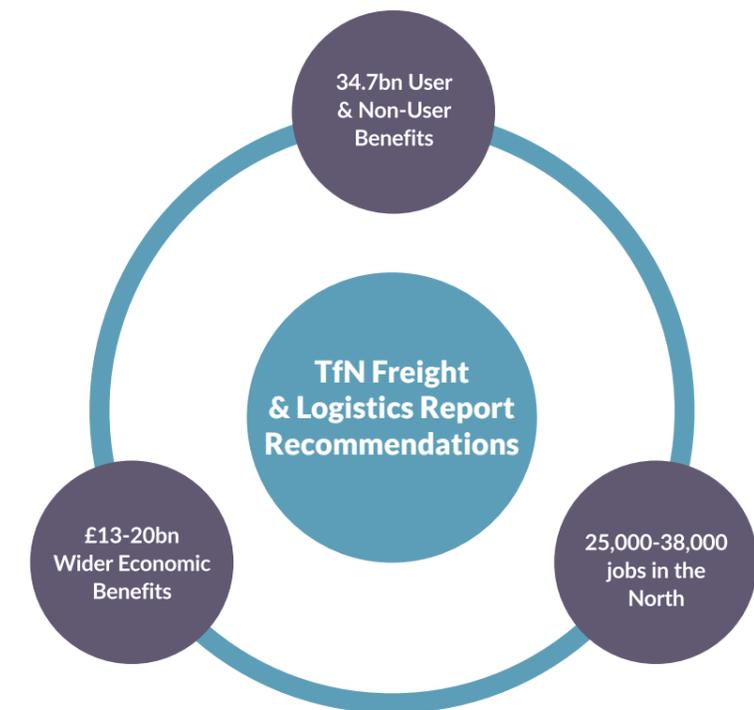


7 What Can Be Achieved

7.1 Impacts and Implications

- The headline of the report's recommendations impacts are illustrated in Figure 7.1. The implementation of recommendations is forecast to deliver in the order of **£34.7 billion of User and Non-User Benefits**¹⁵ to the UK economy and **£13-£20 billion of Wider Economic Benefits** (Gross Value Added benefits)¹⁶ to the Northern economy, as well as **25,000-38,000 jobs** in the North of England by 2033 (the User and Non-User benefits are UK wide whilst the GVA benefits are net additional to the North only).

Figure 7.1: Headline Impacts



It is important to note that the above benefits do not include any quantification of the potentially large additional benefits that could be secured by inward investment to the North of England, attracted by the reduced cost base of a more efficient transport network and freight and logistics offer. Any attempt to quantify the potential impact of this will need to work closely with the outcomes of the TfN Independent Economic Review taking care to separate out the causal relationships between their assumptions and the impact of this report's recommendations. Similarly it should also be noted that the recommendations presented in this document has assumed a 'business as usual' set of trend and forecast relationships in the exogenous growth factors pertaining to the Northern economy. Sensitivity testing of the implications of exogenous transformational growth is presented in the Technical Appendices to this report, but does not significantly change the incremental value of the recommended measures. Again, care is required in this regard to separate out the causal relationships between exogenous 'transformational assumptions' and the interventions and impact of this report.

¹⁵ Based on a 60 year appraisal period; discounted to 2010 and 2010 prices

¹⁶ Based on a 30 year appraisal period; discounted at 3.5% to 2016 values

The report therefore offers the potential for considerable **transformational benefit** through a package of measures that will create the environment needed to attract substantial private sector action and investment. This will enable public and private sector partners to achieve the shared vision for the freight and logistics industry in the North which has been developed through this project:

“In 2033 the North of England will have world-class infrastructure to facilitate the efficient movement of freight to, from and across the region. It will offer high quality and cost-effective accessibility and connectivity to global and national markets via its ports, airports and its network of Multimodal Distribution Parks. These changes, plus a re-focused planning and policy framework in the North, will have led to a step-change in private sector investment in infrastructure, services and equipment to create new employment opportunities in the logistics sector and the widespread adoption of low or zero emission solutions for both long-distance and ‘last mile’ solutions. The freight and logistics industry in the North will have fulfilled its role as one of the critical enablers to allow all industry sectors, including advanced manufacturing and low carbon energy generation, to flourish and grow in the region, while making the North an attractive place to live, work and invest.”

7.1.1 A Greater Market Share for the Northern Freight Industry

The forecast level of benefits set out in Figure 7.1 will be driven by a shift in the performance and efficiency of the Northern freight and logistics industries, as a result of public sector investment

The North of England will receive an increased proportion of goods by rail and direct shipping through its ports and thereby achieve significant efficiency gains, also securing a transfer of international cargo that will expand its port market shares. By 2033, we anticipate a shift in service capacity in both short and deep-sea shipping services from south-eastern ports to northern ports leading to:

- **A 5% increase in the North’s proportion of the UK container shipping market share; and**
- **A 13% increase in the North’s proportion of the UK freight ferry market share.**

This growth in the Northern ports’ market share will be achieved by:

- A switch in the medium term to Liquid Natural Gas (LNG) for some ship power;
- A 4% increase in the proportion of large distribution buildings located in the North of England, equating to 2 million square metres of new distribution centre capacity on multimodal sites; and
- Having ports with sufficient and quality connections to the rail, water and road networks to reduce the cost of using them relative to their competitors.

With respect to airfreight, 5% of all UK airfreight passes through Northern airports, principally through Manchester. Most airfreight travels as bellyhold cargo using large wide bodied jets such as 747s and A380s. This explains the dominance of Heathrow. The second main market sector is that carried by parcel carriers on a hub and spoke basis (hubs being at the Continental level on the Continental mainland). The modest tonnages carried and the need for at least a daily frequency means that spokes to the UK are at East Midlands and Stansted, from which trucks can reach most of the English market within 4-5 hours. Both are therefore able to serve a national market. There are, therefore, opportunities for continued growth for air freight at Northern airports as a consequence of growth in the long haul passenger market based on wide body jets. The greatest opportunity exists at Manchester Airport as it seeks to secure an increasing network of long distance routes with aircraft capable of carrying significant air freight volumes. These benefits are not explored in this report but will flow from TfN’s separate work on International Connectivity.

7.1.2 A More Reliable and Efficient Transport System

By ensuring that Northern ports have quality connections and capacity to the rail, water and road networks ahead of demand, it will become more efficient and attractive to move goods to the North of England via rail and water connected Northern ports. Based on calculated user cost savings of £16.8 billion over the 60 year appraisal period, the **report’s recommendations are forecast to deliver efficiency gains to the industry of an average of £0.3 billion per annum**¹⁷.

The resulting increase in Northern ports’ market share of the UK container shipping and freight ferry markets will have the following impacts on the UK’s rail and road networks by 2033:

- There will be a **large increase of 32.7 million rail freight kilometres nationally by 2033 (+42%)**;
- The **tonnage of goods carried by rail freight to, from or within the North will rise** more than for the wider UK rail network (an increase of 34.2 million tonnes, compared to an increase of 22 million tonnes) by 2033. The efficiency gains from a system supporting more rail and waterborne freight will reduce the cost of transporting goods to and from more peripheral areas of the North, such as Cumbria and Northumbria – therefore supporting inward investment in these areas.
- By 2033, there will be a **reduction in the volume of goods moved by road from Southern ports to the North of England, by around 40 million tonnes** (-4% compared to the Do Minimum scenario). The benefit of this will be felt particularly through the traditional North-South transit axis, leading to substantial environmental benefits in regions such as the Midlands.
- The **volume of goods carried by road will however increase in the North** (particularly across the Pennines) **by 32 million tonnes in 2033** (+5% compared to the Do Minimum” scenario). This is largely due to the additional freight movements between Northern ports and new distribution centres – whilst many of these will be rail and water connected, this boost in Northern distribution activity will also create additional HGV movements. Therefore, partners delivering the recommendations of this report must exploit all opportunities to ensure that new Northern distribution centres are located to maximise their potential for rail and waterborne connectivity. To mitigate the marginal increase of road traffic in the North of England, this report also strongly recommends the future development of sustainable last mile distribution solutions in urban areas such as the use of low/zero carbon vehicles.

7.2 Appraisal Summary

Table 7.1 summarises the quantified monetised benefits that the Northern Freight and Logistics Report recommendations will deliver. These benefits have been determined using a range of standard DfT modelling approaches for benefits quantification and determination of Value for Money for public sector investment in transport interventions, as well as bespoke tools for quantifying wider economic benefits. Further detail on the approaches and methodologies used can be found in the Technical Appendix to this report and further detail on the preferred recommendations results provided in Appendix C.

Table 7.1: Appraisal Summary

Benefit	Present Value £Billion ¹⁴	Commentary
Reduced user cost (efficiency gains)	£16.8	Benefit will be distributed nationally, as a result of lower cost connectivity between the North of England and the rest of the country and beyond
Reduced environmental costs	£3.8	Benefit will be distributed nationally, but felt particularly in the South of England and the Midlands due to a reduction in long distance road haulage to the North from Southern ports.
Reduced congestion / accidents / other externalities	£17.3	Benefit will be distributed nationally, but felt particularly in the South of England and the Midlands due to a reduction in long distance road haulage to the North from Southern ports.
Net taxation less road infrastructure savings	-£3.3	The reduction in road haulage will mean less fuel duty revenue generated for the UK account.
£34.7		Total benefit to UK economy
Expansion of employment (30 year appraisal period)	£13.0 - £20.0	The increase in multi-modal distribution parks will create between 25,000-38,000 jobs in the North of England, as a result of a reduction in freight transport costs and the resultant increase in competitiveness as a location for advanced manufacturing activity and inward investment.
£13.0 - £20.0		Total benefit to UK economy

7.3 Implications for Action Planning

The level of impact presented is predicated on a package of public sector measures which generate a complementary private sector response. Therefore, the importance of initiatives that enable positive ongoing engagement between the public and private sectors must not be underestimated. This is reflected in the Action Plan set out in Section 8.



¹⁸ 2010 Prices; 60 year appraisal period unless stated otherwise in the table
¹⁹ Discounted by 3.5% to 2016 values



8 Delivery of Recommendations

8.1 Our Action Plan

Table 8.1 provides the proposed Action Plan for delivery of the report's recommendations. The Action Plan contains the measures to be implemented over short, medium and long terms. It illustrates which measures are 'quick wins' and which will require a much longer gestation, development and implementation process. The Action Plan also sets out the key public and private sector delivery partners that will be fundamental to successful delivery of the report's recommendations.

The Action Plan will be subject to ongoing refinement and development to substantiate the steps that need to be taken in terms of infrastructure provision, policy and planning measures and institutional capacity development to turn the recommendations into reality.

8.1.1 Implementation Timescales

The timescales for implementation of the report's recommendations have been split into short (2016-2021); medium (2022-2027) and long (2028-2033) term. Each measure has been phased in alignment with the appropriate delivery timescale, taking into account the level of development work required; external influencing factors; available funding and alignment with national public sector agency processes for rail (Control Periods) and road (Roads Investment Strategy periods).

A number of 'quick wins' are identified for delivery in the short term (2016-2021). These include the implementation of enhanced rail network management measures and a number of crucial road capacity schemes under delivery through local investment programmes. In addition it will be critical for TfN to start to explore with local and national government the mechanisms through which sufficient sites can be delivered for the development of MDPs. The successful implementation of these short term measures is critical in building momentum and giving confidence to project stakeholders and the wider freight and logistics industry that progress is being made and that the forecast level of benefits can be achieved over the longer term.

8.1.2 Scheme Prioritisation and Funding

TfN has developed a scheme prioritisation and funding classification system as follows:

TfN Sponsored Intervention

- TfN pro-actively takes forward
- TfN chairs the Project Board and provides the Senior Responsible Officer (SRO)
- TfN either commissions the work directly or via Highways England or Network Rail

TfN Supported Intervention

- TfN is a member of the Project Board, but the intervention is taken forward by a Local Transport Authority (LTA)
- TfN has involvement in programming, assessment and assumptions

TfN Endorsed Intervention

- Local impact, but supports the overall TfN vision
- Taken forward by an LTA; TfN has a 'watching brief'

Local Intervention

- Local impact
- Taken forward by an LTA

TfN will use this classification system to prioritise the recommendations set out in this report.

8.1.3 Effective Communication between Public and Private Sectors

The Action Plan presented in Table 8.1 sets out how a package of public sector investment provides efficiency gains that lead to the creation of a more competitive environment in the North of England that then gives the private sector sufficient confidence to invest in new services and infrastructure.

Key to the success of this joint approach will be effective communication between the public and private sectors. Mechanisms need to be put in place that give the freight and logistics industry and productive industries clear and robust opportunities to shape the action taken and ultimately ensure that it complements the needs of their customers. One early pan-Northern engagement forum that is under development is 'Business North', a mechanism through which TfN can engage with the private sector via a dedicated freight and logistics panel.



Table 8.1: Proposed Package of Intervention

Public Sector Measures	Short (2016-2021)	Timescale Medium (2022-2027)	Long (2028-2033)	Potential Funding Source(s)	Delivery Partners	Anticipated Private Sector Response
Rail						
Package of works to allow: 750m long trains on intermodal routes (longer loops), 20% more operational hours per week (through continued change in maintenance regimes); and W10/12 loading gauge access to SRFIs on intermodal routes	TfN leads on rail regulation and policy consultation/change administered by the Office of Rail and Road; potential investment in CP6 (2019-24)			Department for Transport funding	Network Rail Office of Rail and Road	
Public sector funding where necessary to link Multimodal Distribution Parks (MDPs) to the rail and waterborne freight networks.	TfN to explore appropriate mechanisms to deliver 50 hectares of MDPs per annum and to enable the delivery of connections to the rail/water network where required - with all sites as far as possible being rail and water connected. Unconstrained freight forecasts produced to 2023 and 2033 confirm the "need for an expanded network of large MDPs across the regions to accommodate the long-term growth in rail freight"			TfN / Local Authority funding	Network Rail	Expansion in rail freight services
'Chaining' of Multimodal Distribution Parks (MDPs) – ensuring that they are well-connected to a single freight route				TfN / Local Authority funding	MDP developers	Expansion in rail freight services
Development of and securing for the freight industry additional trans-Pennine rail freight capacity to achieve 3 freight paths per hour in each direction	In the short term, upgrade to W10/12 loading gauge between Manchester and Leeds, and to Tees, Hull and Immingham to complete the upgraded network, alongside shorter term enhancements to infrastructure and signalling / train management to enable greater freight train capacity. In the longer term, investigate options such as ERTMS. Network Rail to establish outputs and funding for CP6 (2019-2024) in Autumn 2016; Development options for new trans-Pennine and improved rail links across the North planned for this period (proposals by TfN)			Department for Transport funding	Network Rail First Group (operators of trans-Pennine rail services) Department for Transport	Additional bulk freight services (quarries etc.) and intermodal services from the ports
Securing additional rail freight capacity on the West Coast Main Line to achieve the following paths per hour: 2.5 north of Wigan in each direction; 5.5 between Crewe and Wigan in each direction and 6 south of Crewe in each direction, utilising the capacity released through HS2 construction	Development of extra capacity pre HS2 by infrastructure work/ passenger service retiming north of Crewe	HS2 Phase 2a (Crewe-Birmingham) scheduled to open in 2027, 6 years earlier than originally planned: paths to be secured on WCML as demand switches to HS2		Department for Transport funding	Network Rail Department for Transport HS2 Ltd	Additional intermodal services
Creation of additional network capacity in advance of forecast demand on the East Coast Main Line and Midland Main Line e.g. passing loops, in-cab signalling, and electrification to achieve and secure 7 freight paths per hour south of Doncaster in each direction and 2.5 paths per hour north of York in each direction	Retiming of passenger services and dynamic loops along ECML. 4 tracking of MML and Werrington flyover	Implementation of in-cab signalling		Direct DfT grants	Network Rail	Additional intermodal and bulk stone trains

Public Sector Measures	Short (2016-2021)	Timescale Medium (2022-2027)	Long (2028-2033)	Potential Funding Source(s)	Delivery Partners	Anticipated Private Sector Response
Rail						
Enhanced rail network management e.g. relinquishment of unused paths	TfN to secure paths needed to increase capacity for rail freight Ongoing strategic planning to enhance conventional rail network			DfT/TfN process ownership	Network Rail Office of Rail and Road	More efficient use of the network
Re-opening/upgrading rail links to address capacity shortfalls: e.g. Matlock – Buxton and Leamside	Convene private sector groups to support case for specific upgrades/ track relaying	Upgrade of key pinch points (Diggle route, WCML north of Crewe prior to HS2)		Upgraded rail links to be funded via Network Rail (CPs funded by DfT)	Department for Transport Network Rail	Additional rail services

Public Sector Measures	Short (2016-2021)	Timescale Medium (2022-2027)	Long (2028-2033)	Potential Funding Source(s)	Delivery Partners	Anticipated Private Sector Response
Waterborne Freight						
Public sector financing for LNG bunkering infrastructure and cold ironing infrastructure at ports	TfN to establish working relationships with port operators, highway authorities and LEAs to develop a list of schemes to take forward over the medium to long term, including the use of sustainable power sources where appropriate.			Subject to Connecting Europe Facility (CEF) funding which has a budget of €24.05bn for the period 2014-2020 (much of this allocated to cohesion countries)	European Union Port operators National Grid LNG industry	Building of new short-sea vessels to raise capacity to Northern ports
Financing for port / hinterland connections and infrastructure to support Motorways of the Sea services					European Union Port operators (e.g. i.e. Peel Ports, PD, Port of Tyne or ABP)	Expansion of service capacity mainly on existing services (larger vessels)
Public sector funding where necessary to link Multimodal Distribution Parks (MDPs) to the rail and waterborne freight network	TfN to explore mechanisms through which MDPs can be delivered and connections to the rail and waterborne freight networks provided. TfN to ensure ongoing availability of inland rail and water connected sites (with an annual distribution centre allocation of 50ha). TfN to explore funding mechanisms to provide rail and/or water connectivity to sites where the private sector cannot. Schemes to be further determined but likely to tie into MDP development. MDPs are key to government freight forecasts up to 2033.			Rail sites likely to tie into MDP development (funded locally)	Specialist developers or freight transport companies	Expansion of rail and water connected distribution centres
Upgrade Aire & Calder to Class II waterway as far as Leeds (as per South Yorkshire waterway) to reach new quay at Stourton	TfN to provide proactive support to CRT to bring forward this scheme.			To be determined by working in conjunction with the Canal & River Trust	Canal & River Trust Humber/Leeds City Region Local Enterprise Partnerships	Development of new barge services, mainly for bulks and investment in new barges

Public Sector Measures	Short (2016-2021)	Timescale Medium (2022-2027)	Long (2028-2033)	Potential Funding Source(s)	Delivery Partners	Anticipated Private Sector Response
Road						
TfN Northern trans-Pennine improvement Study (A66/A69)	Ongoing study by TfN into potential capacity improvements	Resulting scheme could be taken forward as part of the next Road Period (RIS 2) post 2020		DfT; other potential funding sources to be confirmed	Department for Transport Highways England Local Enterprise Partnerships	Expansion of port traffic through Tees and Tyne
TfN Manchester North West Quadrant improvement Study (M60)	Ongoing study by TfN into potential capacity improvements	Resulting scheme could be taken forward as part of the next Road Period (RIS 2) post 2020		DfT; other potential funding sources to be confirmed	Department for Transport Highways England TfGM/Greater Manchester Local Enterprise Partnership	Expansion of port traffic through all east coast ports as road delivery performance improves
Existing A road capacity upgrades	Schemes being developed for the end of the current Road Period (e.g. A61 Dualling) and the start of the next Road Period (e.g. A1 Redhouse to Darrington)			DfT (Road Investment Strategy 1/2)	Department for Transport Highways England Local Authorities	Market response captures efficiency gains
Existing A road interchange / junction improvement schemes	Schemes (e.g. A19 Testos Junction Improvements) being developed in RIS 1 (by 2020)			DfT (Road Investment Strategy 1)	Department for Transport Highways England Local Authorities	Market response captures efficiency gains
Existing link road / relief road / orbital road / bypass schemes	Schemes being developed for RIS 1/2 e.g. Wigan Gateway M58 Link (RIS 1) and A1 (M) Doncaster Bypass (RIS 2)			DfT (Road Investment Strategy 1/2 Funding); Local Growth Fund i.e. £50m LGF secured by Greater Manchester LEP, £11.8m required for Wigan Gateway M58 Link	Department for Transport Highways England Local Enterprise Partnerships	Market response captures efficiency gains
Existing motorway interchange / junction improvement schemes		Schemes e.g. M60 Simister Island Interchange and M1/M62 Lofthouse Interchange being developed for the next Road Period (post 2020)		DfT (Road Investment Strategy 2); Possible Local Authority/LEP funding	Department for Transport Highways England Local Enterprise Partnerships	Market response captures efficiency gains

Public Sector Measures	Short (2016-2021)	Timescale Medium (2022-2027)	Long (2028-2033)	Potential Funding Source(s)	Delivery Partners	Anticipated Private Sector Response
Road						
Development of a network of secure HGV parking facilities, e.g. at rail connected warehousing sites	Locations for HGV parking facilities the subject of ongoing investigation as part of local Transport Strategies			Likely to require local and national input to determine suitable site locations; funding required from Local Authorities (as in the case of MDPs)	Department for Transport Highways England Local Authorities	Market response captures efficiency gains
Investigation of last mile distribution solutions and impact mitigation	DfT contribution to Local Growth Fund confirmed to 2020/21 - Investment likely to be through LSTF (part of Local Growth Funding). In the longer term, exploration of potential low/zero carbon opportunities for last mile distribution solutions.			Possible investment from DfT, working with Local Authorities	Department for Transport Port Operators Local Authorities	Market response captures efficiency gains
Delivery of improvements to land side access to ports (e.g. Liverpool and Hull port access)	A5036 Princess Way (Port of Liverpool) and A63 Castle Street (Port of Hull) accessibility programmes to be completed as part of RIS 1			DfT (Road Investment Strategy 1); Combined Authority funding i.e. LCR Port Access Steering Group has developed funding package for port access improvements	Department for Transport Combined Authorities Local Enterprise Partnerships	Market response captures efficiency gains
Implementation of appropriate vehicle signage and routing plans	Ongoing work by local authorities to ensure that appropriate signage and maps are available for HGV drivers			Local Authority funding	Department for Transport Highways England	Efficiency gains

Public Sector Measures	Short (2016-2021)	Timescale Medium (2022-2027)	Long (2028-2033)	Potential Funding Source(s)	Delivery Partners	Anticipated Private Sector Response
Policy & Planning						
TfN to explore the mechanisms through which sufficient sites can be brought forward for the development of MDPs, and the ways in which public sector funding can be used to support key transport infrastructure such as rail connections	TfN to work with local and national government to explore the ways in which sufficiently large sites with the appropriate connections can be brought forward	Ongoing delivery through the planning system of at least 50 hectares of sufficiently large sites with the potential for appropriate connections for MDP development		May require funding at local, pan-regional and national levels	TfN National Infrastructure Commission Local Authorities Department for Transport	Development of MDPs that offer efficiencies in distribution and which futureproof for longer term sustainable last mile solutions
TfN to maintain an evidence base and leadership role that enables continual monitoring of the degree to which the road, rail and waterway network and the supply of land for freight and logistics meet industry requirements in terms of capacity and location	Ongoing work by TfN on developing and maintaining an evidence base in relation to supply and demand for road, rail and waterborne freight network capacity			TfN internal funding	TfN in liaison with infrastructure network providers and Local Authorities and in consultation with the private sector	On-going investment in new MDPs, port infrastructure, freight services and equipment
TfN to engage with similar sub-national transport authorities to develop strategies of mutual benefit e.g. co-ordinated interventions to improve cross-boundary connections	Bi-lateral discussions with neighbouring areas to achieve outcomes of mutual benefit.			TfN internal funding	TfN Neighbouring authorities such as Midlands Connect, the Welsh Government and the Scottish Government	Ongoing investment in new MDPs, port infrastructure, freight services and equipment
TfN to specify the required outputs such as capacity and performance of road and rail networks to ensure that their capacity and capability is optimised with respect to both passenger and freight users (e.g. through rail timetabling).	TfN to specify infrastructure capacity and performance required to ensure that network capacity for freight is available ahead of demand.			TfN internal funding	TfN Department for Transport Highways England Network Rail	Ongoing investment in new MDPs, port infrastructure, freight services and equipment
TfN to safeguard access to the rail network for freight to ensure that capacity is available ahead of demand by securing access options (guaranteed freight paths) throughout the country as required to protect its own investments in network upgrade.	TfN seeking to safeguard access to rail capacity through access options, working with the Office of Rail and Road			TfN internal funding	TfN Office of Rail and Road Network Rail	Ongoing investment in new MDPs and rail freight services
TfN to work with the National Infrastructure Commission (NIC) to ensure that infrastructure of strategic importance to the North is taken forward as Endorsed Recommendations by the NIC and through liaison with the NIC.	TfN works with the NIC to ensure that strategic road, rail and waterborne freight infrastructure projects are put forward as Endorsed Recommendations from the NIC in its National Infrastructure Assessment.			TfN internal funding	TfN National Infrastructure Commission	Ongoing investment in new MDPs, port infrastructure, freight services and equipment
TfN to set up an appropriate forum for ongoing discussion and progression of recommendations with private sector buy-in	TfN continues to engage with the private sector via a dedicated forum - potentially a freight and logistics sub-panel of Business North to progress implementation of recommendations.			TfN internal funding	TfN Business North Private sector stakeholders	Ongoing investment in new MDPs, port infrastructure, freight services and equipment

Public Sector Measures	Short (2016-2021)	Timescale Medium (2022-2027)	Long (2028-2033)	Potential Funding Source(s)	Delivery Partners	Anticipated Private Sector Response
Policy & Planning						
Consideration of potential benefits of freight operator's recognition schemes such as ECO Stars and implementation of a pan-Northern scheme if appropriate	TfN carries out an assessment of the costs and benefits of developing a pan-Northern scheme that builds on work already being carried out to implement ECO Stars across the region to encourage road hauliers to adopt measures that have the aim of increasing safety and operational efficiency and reducing environmental emissions.	Pan-Northern scheme rolled out if considered appropriate		TfN internal funding	TfN Passenger Transport Executives / Integrated Transport Authorities Local Authorities Business North	To be determined
Contribution to pan-Northern inward investment marketing initiatives	TfN carries out an assessment of the costs and benefits of developing a pan-northern marketing initiative to demonstrate how freight and logistics can encourage inward investment in the North.	Pan-Northern marketing initiative rolled out if considered appropriate		TfN internal funding	TfN Business North	Engagement with marketing process in an effort to secure greater volumes of future business.
Develop a consistent, harmonised approach to the regulation of access by freight vehicles in urban areas.	TfN facilitates a consistent, harmonised approach to the regulation of freight access in urban areas in order to encourage the use of ultra-low emission vehicles for 'last mile' distribution in the main northern cities.			TfN internal funding	TfN Passenger Transport Executives / Integrated Transport Authorities Local Authorities	Industry adapts to new regulatory environment by investing in ultra-low emission vehicles for 'last mile' collections and deliveries and in operational concepts such as consolidation on the edge of the main cities.
Investment and support for freight and logistics industry focused training/ apprenticeship programmes and qualifications at all levels	TfN support for and promotion of existing programmes commissioned and funded by bodies such as BIS and the SKA and to lobby for further funding and wider programmes. TfN to carry out an assessment of supply and demand for training and education in relevant freight and logistics skills in the North. TfN to then develop a plan to ensure the supply of skilled labour over the long-term.	Ongoing roll-out and implementation of recommendations and support/ lobbying for skills and training programmes over the medium to long term		TfN internal funding	TfN Department for Business, Innovation & Skills (BIS) Skills Funding Agency (SFA) Universities, colleges and other education and training organisations	Private sector able to invest knowing that a supply of skilled labour will be available

8.2 Successful Delivery of Recommendations

Together, TfN and other public sector organisations (at local and national levels) will explore the interventions in Table 8.1, to create an environment that will encourage substantial private sector investment in the North of England. In performing its role effectively, TfN will seek to articulate a clear vision for the freight and logistics industry in the North, and where appropriate influence decision making at a national level; for example working with the National Infrastructure Commission to ensure that measures of strategic importance to the performance of the Northern economy are delivered effectively.

In order to support this, it is proposed that TfN develop and maintain an evidence base in relation to supply and demand for road, rail and waterborne freight network capacity, and engage with similar sub-national transport authorities / delivery partners to identify and prioritise pan-Northern network improvements. Furthermore, TfN will continue to develop working relationships with key partners, including Local Authorities, Local Enterprise Partnerships, Highways England, Network Rail and private sector freight and logistics industry operators to develop and prioritise a list of schemes into a pipeline for delivery over the medium to long term, based on the measures set out in the Action Plan.

Key to successful delivery of the report's recommendations is the provision through the planning system of 50 hectares per annum of sufficiently large sites for MDP development where connections to the rail and/or water network can be achieved, in order to offer improved efficiency in onward distribution. The precise mechanism to achieve this is not defined by this report but TfN will explore with national and local government the best way to achieve better pan-Northern land use outcomes. TfN will look to support and add value to the planning powers held by Local Authorities, rather than drawing any powers from the local level up to the pan-Northern level. MDPs will generally be above 60 hectares and therefore classified as an SRFI. In this instance the planning application will effectively be made directly to the Secretary of State for planning consent through the Planning Inspectorate, and TfN will seek to develop a position of influence with respect to such decisions.

TfN also has the opportunity to exert an influence which can provide positive land-use and transport outcomes for personal travel; for example through opportunities to identify new housing sites as logistics sites are moved and consolidated to new locations.

TfN will also seek to provide pan-Northern guidance and co-ordination to harmonise regulations for HGV access to urban areas. Whilst there is unlikely to be a one-size fits all solution it is important that consideration is given to consistency of restrictions – for example on vehicle specification. This will help secure faster and more consistent improvements to the urban environment, and can also lay a much better platform for the potential future roll-out of 'last mile' consolidation solutions.

8.3 Understanding Success

The successful delivery of the measures set out in the Action Plan will enable TfN to realise the report objectives in terms of enabling the efficient and cost-effective movement of goods to, from and within the North and delivering better planning that together provide the private sector with sufficient confidence to invest in new infrastructure, equipment and services that drive the continued growth of the freight industry and ultimately contribute to wider transformational economic growth in the North.

TfN will play a lead role in this transformation, and it is suggested that ongoing consideration is given as to how the impacts of the recommendations can be monitored and evaluated over the longer term to understand its level of success.

8.4 Next Steps

TfN will take forward the measures set out in this report in line with other workstreams and in continued dialogue with the private sector. The key next steps are:

- To establish an evidence base for transport in the North that can be used to support the case for investment going forward;
- To establish a consultative panel from the freight industry that provides ongoing dialogue and input on the further development and delivery of the report;
- To further develop the case for each of the measures set out in this report, and to phase the delivery of measures in such a way that aligns with funding opportunities and heeds the complex interdependencies between the measures set out in this report and in other TfN workstreams, maximising the benefits from each;
- To start to explore with local and national government the most appropriate mechanism through which MDPs can be delivered through the planning system;
- To identify funding opportunities for the measures set out in this report through the complementary work on funding and financing currently under development by TfN;
- To develop a clear, detailed delivery plan that builds on the Action Plan set out in this report;
- To start to progress delivery of the quick win initiatives set out in the Action Plan; and
- In recognition of the dynamic nature of the freight and logistics industry and indeed the global economy, put in place measures to ensure that this report is reviewed and updated on a regular basis, to ensure that it remains flexible and responsive to changing conditions, technological innovation, regulatory reform and other external influences

