One North

A Proposition for an Interconnected North

July 2014





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Preface

One North is a strategic proposition for transport in the North.

Led by the city regions of Leeds, Liverpool, Manchester, Newcastle and Sheffield, One North reflects the critical importance of transport for vibrant, sustainable economic growth across the North. It is our initial response to the challenge set out by Sir David Higgins in his report HS2 Plus: to come together to develop a coherent strategic transport plan integrating HS2 with the existing rail network, transforming connectivity across the North. Already the Chancellor has identified the need for a new strategic approach to connect cities to drive growth, including the principle of a northern eastwest high speed rail link.

The 15m population of the North is larger than London and almost as big as the Netherlands but our economy is not doing as well. Our ambition is for the North to be a dynamic counterweight and complement to the London and South-East economy, a destination of choice for investors, helping rebalance and grow the national economy in the decades ahead.

Transport – for freight and people- is central to our ambition. Just as the transport networks in London and the Netherlands – internally, with surrounding areas and beyond – are fundamental for their economic success, transport is fundamental for the North. But journey times across the North are much slower, service frequencies are lower and the interconnectivity of our transport networks is much weaker.

Transport connectivity across the North needs to change.

The dominant method of travel in the North today is by road. Our motorways need to be kept moving through extended managed motorways east-west on the M62/M60 and north-south on the M1 and M6 and through tackling network gaps on the A1 and links to ports. But our already congested highways cannot be expected to meet all the burden of growth.

Rail is the travel sector that is growing strongest. Alongside fast frequent links to Birmingham and London provided by HS2, the North requires a new trans Pennine route and a faster route to Newcastle. City region rail networks need more capacity, electrification and new rolling stock to meet growing demand. They need to be closely interconnected with the new intercity network of services and with metro/tram services, bus and cycle. With this the North will be better placed to take advantage of the lower barriers to trade with the South that HS2 will bring, multiplying the benefits of investment in high-speed rail to the benefit of the country as a whole.

One North sets out our proposition for transport in the North and the principles we have adopted in developing it. It provides a platform for consideration by the LEPs and both private and public sector organisations across the North. Our next steps will be to work with these organisations to develop a prioritised set of economically driven investments to deliver our ambition. The prize is considerable. A transport network that supports a strong and vibrant and more productive North of England economy for the 21st century.

Councillor Keith Wakefield, Leader of Leeds City Council
Joe Anderson, Mayor of Liverpool
Councillor Sir Richard Leese, Leader of Manchester City Council
Councillor Nick Forbes, Leader of Newcastle City Council
Councillor Julie Dore, Leader of Sheffield City Council

Executive Summary

Introduction

In the recent report HS2 Plus, the benefits of HS2 in terms of better links between northern cities and the Midlands/London were highlighted. Sir David Higgins posed the question of whether this alone would be sufficient to achieve a full transformation of northern connectivity and the North's economy. The challenge he set essentially concerns connectivity between northern cities and their connections to the international 'gateways': airports and ports.

We agree this is the key outstanding issue to address and it provides the basis of this proposition for One North. It has been prepared, mindful of the needs of the whole of the North of England, by the city regions of Leeds, Liverpool, Manchester, Newcastle and Sheffield. It follows on from the speech by the Chancellor of the Exchequer in June, where he observed that "the cities of the North together can be greater than the sum of their parts". He identified the need for a new strategic approach to connecting cities to drive growth and outlined the idea of a new east-west high-speed rail link for the North.

Why Transport and Logistics are a Top Priority for the North

Our proposition places a transformation of connectivity at the heart of an aim to maximise economic growth in the North.

The strategic economic plans of all five city regions, prepared by the respective LEPs earlier this year, each recognised the importance of improving transport links to achieve economic growth.

Our proposition builds on this common perspective and aims to create a North of England that is a powerful and integrated series of economic geographies. This will be a highly interconnected region of thriving cities and towns, providing a valuable counterweight and complement to London and helping to re-balance and deliver growth for the national economy in the decades ahead.



"...a highly interconnected region of thriving cities and towns, providing a valuable counterweight to London"



Guiding Principles

We have used the following six guiding principles in setting out our vision.

- Our aim is to grow the national economy by invigorating the North's
 economy as a whole, delivering higher levels of productivity and greater
 competitiveness through designing a programme of transformed connectivity
 for the North.
- 2. The vision is 'multi-modal' both for logistics and for personal travel. It recognises that the dominant means of travel today is by road. Steps are needed to improve the reliability and resilience of the road network across the North for all user groups. But the highway network cannot meet the burden of expected growth. Extra capacity needs to be added elsewhere. The rail network is extensive across the North yet it fails to offer a sense of a joined up network (in the way that London Underground does, for example). This is where additional capacity and transformational connectivity can be best provided. Water and air transport is relevant too, especially because of the scope for greater activity through the North's ports and airports.
- 3. Rail is the means of travel that is growing strongest and the network will have to play a much increased role in the decades to come. This means investment. Better rail service provision offers improved connectivity, but the use of out-dated rolling stock and infrastructure together with loosely integrated patterns of operation restrict the potential for improved quality of service. Our proposition has therefore been cast in terms of service requirements at a strategic level and an outline investment programme. Following investment, growing demand and lower operating costs may result in services becoming more commercially viable. The target is greater capacity, transformed connectivity and a means to drive down the level of public subsidy required for rail services.
- 4. Our proposition anticipates growth. It is based on national and regional projections of population increases. Our expectation is that the North's economy will become more productive, more competitive and more efficient as it competes in global markets, playing to its strengths, helped by the economies of scale that come from a balanced, transformed interconnected network.
- 5. The proposition seeks to maximise value by prioritising the investment that delivers the best overall return to the taxpayer in terms of net national growth.
- 6. The proposition is transformational in intent and that means that major capital expenditure is required, to be justified by the economic benefits. HS2 and the North's interconnected city regions will together make the North a new destination of choice for mobile international businesses: One North.

Economic Benefits

Better connectivity means improved journey time reliability, better travel quality and shorter journeys that will widen and strengthen the North's labour markets and improve business efficiency by:

- ▶ Stimulating business investment and innovation by supporting economies of scale and new ways of working.
- Achieving agglomeration economies by bringing firms and their employees closer to business rivals and partners.
- ▶ Enabling firms to access a larger labour supply and providing wider employment opportunities for workers and those seeking work.
- ▶ Increasing competitiveness through access to new and larger markets with the benefits of increased labour market specialisation.
- ▶ Reducing trading costs and using more efficient logistics networks.
- ▶ Strengthening the existing comparative advantages of the North as a place to do business.

All these things mean a more productive northern economy, which means higher wages, profits and tax receipts for the Exchequer.

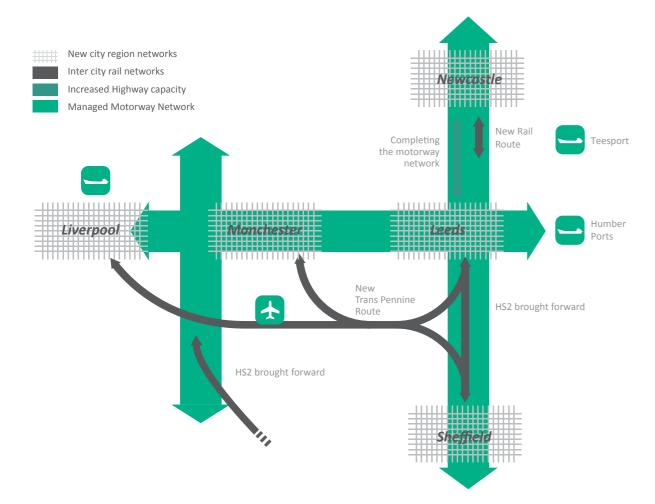
The Proposition

Connectivity and capacity between the northern cities needs to undergo transformational change. To become an economic powerhouse the North requires:

- Optimisation of strategic highway capacity for both freight and personal travel through extended managed motorways and addressing strategic gaps in the road network (including links to ports), with a particular emphasis on improving reliability for freight and business.
- ▶ A very high quality (fast and frequent) intercity rail network joining the centres of the city regions. This will require a new trans Pennine route and a faster route to Newcastle to provide the additional capacity and better connectivity we are seeking for the North's economy. It will deliver direct, fast and frequent access to Manchester Airport for all the North's city regions to help northern businesses access global markets.
- ▶ City region rail networks that provide the additional capacity needed to sustain city centre growth. These will be interconnected with HS2 services, new intercity services, metro/tram services and with much expanded park and ride facilities. They will combine the need to connect into city region hubs with new direct cross-city services. This



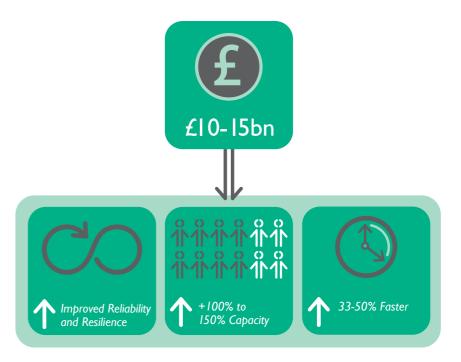
- requires electrification, new rolling stock (a matter of urgency for the North in terms of quality and sufficiency), higher service frequencies, new services and the removal of network pinch points.
- ▶ A 'digital' infrastructure that offers consumers and businesses full realtime information systems, improved ticketing options, provides greater network resilience and reliability, more capacity for growth and much faster connections between key centres.
- Good access that enables the efficient and timely movement of large quantities of freight by rail, road and water covering not only ports, rail links and large distribution centres but also light commercial vehicles and airports for premium logistics.
- ▶ Building HS2 early extending Phase 1 of HS2 to Crewe as envisaged in 'HS2 Plus' and bringing forward delivery of HS2 between Leeds and Sheffield. HS2 services start in the North in 2026 and the work of the Lord Deighton Growth Task Force illustrated the scope for early



- development and regeneration around stations with HS2 services. HS2 is a key catalyst for northern city regeneration, and not simply a means to shorten journey times. All of the city regions have plans to be ready for HS2 and are committed to its success.
- ▶ The new trans Pennine route could also deliver a new integrated eastwest rail freight capability linking the major port estuaries and northsouth rail routes, connected to a number of major rail linked distribution centres that can reduce industry's trading cost base.

The outcomes from this proposition are:

- ▶ The North becomes a destination of choice for investors and a dynamic counterweight and complement to the London and South East economy.
- ▶ Higher levels of productivity and greater competitiveness of northernbased businesses, delivered in a highly inter-connected, multi-centred regional economy able to function as achieved in Germany's Rhein-Ruhr region, the Netherlands' Randstad and elsewhere.
- Modern infrastructure for our growing logistics industry, supporting trade and industry, offering the efficiencies that stem from high levels of reliability and resilience.
- ▶ A broadening and deepening of the economic benefits that HS2 brings to the North.



A new trans Pennine route, connected to the HS2 lines and the existing rail network, tunnelled as needed, linking the five city regions together with Manchester Airport and the ports.

A facility that will need to be planned for intensive use as a high-reliability all-weather central component in the North's transport system.

Next Steps and Consultation

The development of this vision by the five city regions provides a platform for consideration by all of the major towns and cities and Local Enterprise Partnerships of the North. The prize, once developed into a clearly prioritised strategy, will be considerable. It will provide a strong strategic context for city region transport investments. It will enable the North of England to compete more effectively for future resources and strengthen the national economy.

We will use a transparent appraisal framework to develop a clearly prioritised list of economically driven investment programmes and interventions to deliver our ambition. This strategic investment plan will cover all modes of travel and can inform national and local decision-making over multiple Comprehensive Spending Review periods.

Alongside active government leadership, we will work with the key national transport agencies – Network Rail, the Highways Agency and HS2 Ltd – to ensure that across the North and in each city region the best way is found to maximise the value of each investment.

"...The cities of the north are individually strong, but collectively not strong enough. The whole is less than the sum of its parts....We need a Northern PowerhouseNot one city, but a collection of northern cities - sufficiently close to each other that combined they can take on the world."

The Rt Hon George Osborne MP

Museum of Science and Industry, Manchester. 23 June 2014

1. The Challenge

Why Transport and Logistics are a Top Priority for the North

The national economy is unbalanced. A large capital and world city in London attracts and consumes high levels of investment, including in transport. In contrast with most other developed economies, the next tier cities are much smaller. Compared with our equivalents in Europe, our GDP/capita in the North is weak against the national average, and investment in connectivity has been neglected. This reduces national prosperity as well as that of the North. This proposition seeks to redress these imbalances focussing transport investment for maximum economic gains.

Poor transport links could be sapping the competitiveness of the North.¹ East—west rail journeys in the North take about twice as long as equivalent journeys in the South.² GDP per capita performance of the northern city regions is slipping compared to London and smaller southern towns and cities. Experience with Scotland and London- where there are significant spending powers- is that devolved authorities invest more substantially in transport.³

While the individual cities of the North may be relatively small, experience in the most prosperous European nations shows that clusters of highly interconnected cities can perform very well in economic terms. The North of England population is similar to the Netherlands and bigger than London, Tokyo and New York. The challenge and opportunity is to achieve the benefits of a larger market that greater connectivity across the North can bring. Faster growing regions are characterised by better infrastructure and connectivity to global markets.⁴

There is a continuum of evidence that enhancing connectivity between the North's city regions, within the North's city regions and to international gateways and London needs to be an integral part of any strategy to accelerate the North's economic growth. The Northern Way, Eddington and the House of Commons Transport Committee have all come to this general policy prescription.⁵

The 2014 Strategic Economic Plans for the largest city regions in the North each identify connectivity as a key aim – both across the North (see Leeds City Region) and internationally (see the North East, Manchester, Liverpool and Sheffield Strategic Economic Plans).



"...The opportunity is to achieve the benefits of a larger market that greater connectivity across the North can bring"

^{1 &#}x27;Never Walk Alone' The Economist April 19th 2014

² Manchester to Hull (95 miles) is 1hr 53m by train versus London to Chippenham (95 miles) is 69mins

³ Liverpool John Moores University (Parkinson et al 2014)

⁴ IPPR North and the Northern Economic Futures Commission (2012)

^{5 &#}x27;The Economic Case for Transport Investment in the North' The Northern Way (March 2011). The Eddington Transport Study (Dec 2006). Transport and the Economy, House of Commons Transport Select Committee 2011

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What the Strategic Economic Plans say about Connectivity

Leeds City Region

Better connectivity is the lynchpin of our plan. Gaps in connectivity are the missing links to developing a second UK economic powerhouse to compete for the country globally, alongside London and the South East. We have a formidable set of economic assets: what we need is a high performing transport network to connect people, places and jobs seamlessly and attract new investment.

Greater Manchester City Region

Greater Manchester has consistently placed connectivity and transport investment at the heart of our economic strategy. We will continue to focus investment on the city region's strategic transport network to further enhance local, national and international connectivity.

Liverpool City Region

To build on international connectivity and brand recognition. Our investment will be targeted at establishing a globally connected City Region, driving the attainment of the SuperPORT concept and enhancing our internationally recognised visitor economy assets. The Liverpool City Region will exploit these opportunities to establish itself as a centre for trade and export led growth, as well as a leading location for inward investment.

Sheffield City Region

Our Ambition — To improve SCR's external connectivity, nationally and internationally, by air, road and rail, including maximising the benefits of high-speed rail.

North East

In order to achieve the vision set out in our strategic economic plan, it will be necessary for people to travel and for goods to be transported within, into and out of the area. Without this, the economy cannot function effectively and commercial competitiveness and social inclusion both suffer. The presence and effectiveness of road, rail, air and sea connections can place a limitation on how aspirational the North East Local Enterprise Partnership area can be.



What Transformed Connectivity can bring in Practice

The Department for Transport's trans Pennine study of 2011 confirmed that enhancing the Leeds-Manchester-Sheffield triangle of corridors would support the economic growth of these large city region economies. Given the extensive use of these three corridors by longer distance trips between the North's city regions (including Tees Valley, Hull/the Humber and Lancashire), the study found that connectivity enhancements across this triangle would lead to balanced economic growth of the wider North.

Currently, city region economies function largely in isolation from one another. Commuting between Manchester and Leeds City Regions, for example, is 40% lower than expected given the physical proximity of the two cities. A 20 minute reduction in train journey times between Manchester and Leeds would be worth £6.7 billion across the whole of the North of England (with only £2.7 billion captured within the two city regions and £4bn spread across the wider North). Bringing the North's city regions closer together will improve labour market efficiency and enable firms to access a wider labour force. Improved transport links will widen employment opportunities across the North for those seeking work. Direct cross city connectivity and improved links from remoter areas to centres with education and training facilities (such as Carlisle and Middlesbrough) are needed to reduce the number of people not in employment, education or training.

Widening and strengthening labour markets and improved business efficiency by improving journey time reliability, travel quality and travel times will:

- ▶ Stimulate business investment and innovation by supporting economies of scale and new ways of working.
- Achieve agglomeration economies by bringing firms closer (in space or time) to other firms or workers in the same sector.
- ▶ Improve labour market efficiency, enabling firms to access a larger labour supply, and providing wider employment opportunities for workers and those seeking work.
- ▶ Increase competitiveness by opening access to new markets, principally by increased labour market specialisation.



^{6 &#}x27;Strengthening economic linkages between Leeds and Manchester' Overman et al, SERC The Northern Way 2009. This study showed a broadly similar level of benefit from high-speed rail links between these cities and London – as now being created by the HS2 plans



"...East-West connectivity and HS2 would be growth multipliers for the North and nationally, with each increasing the impact of the other"

- Increase domestic and international trade by reducing trading costs.
- Attract globally mobile activity to the UK, by providing an attractive business environment and good quality of life.

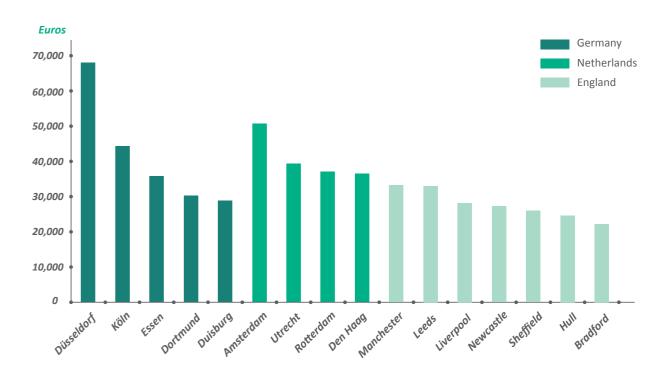
In practice East-West connectivity and HS2 would be growth multipliers for the North and nationally, with each increasing the impact of the other. HS2 lowers barriers to trade between the North and the South; East-West connectivity makes the North a more productive and thus better trading partner, which increases the returns to the additional trade that HS2 unlocks.

European Comparisons

The ability of a very large city such as London to sustain economic growth has been demonstrated through recessionary times. Less well understood is the resilience of regional economies based on several competing/collaborating cities. We identified two European benchmarks, Randstad in the Netherlands and Rhein-Ruhr in Germany, to illustrate what can be achieved. The GDP per inhabitant is higher in both of these European city regions and, unlike the North, the Rhein-Ruhr region's GDP per capita is growing faster than its capital city, Berlin.

The striking feature of the transport systems in these two comparator regions is the complex and interconnected nature of the public transport and highway networks combining hub and spokes with cross city routes. On major city to city rail flows, journey times tend to be shorter, frequencies higher and services are timed to interconnect at key interchanges. But there are also through direct services between most places and there is no single spine route that dominates, given the spatial pattern of the city 'cluster'. All cities are connected directly to the key airports. Both regions rely upon port, waterway and rail freight infrastructure to support their economies.

GDP per Capita



Source: Eurostat - most recent data (for 2011)

The distances between city centres is greater in the North of England compared to the European examples and the geography of the Pennines has proved to be a barrier to east-west highway and rail development especially between Manchester and Sheffield. This means we need to work harder on connectivity to develop the advantages of a unified regional economy.

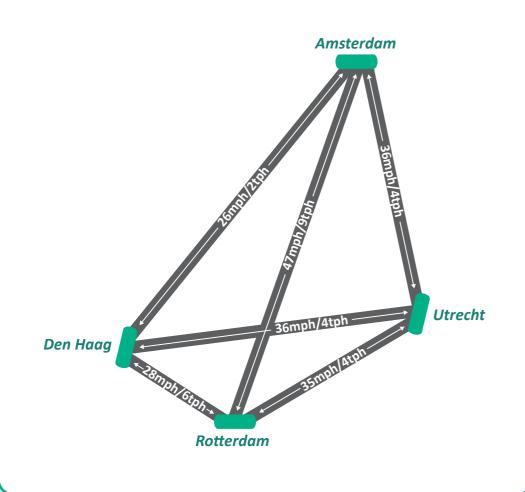
The evidence from the study by SERC for the Northern Way in 2009 ⁷ is that improving east-west connectivity in effect brings to the North about the same benefit as does HS2. Addressing the connectivity challenge can be expected to double the benefits HS2 brings the North. The European examples show there is no fundamental reason why the North's economic performance cannot be uplifted dramatically.

⁷ Ibid

Randstad, Netherlands

The Randstad is bounded by the four cities of Amsterdam, Rotterdam, Den Haag and Utrecht. With a population of 7 million, the Randstad benefits from excellent airport (Schiphol) and port (Rotterdam) links. City to city distances are about 30 - 50 miles and the Randstad benefits from an intensive road network. The Dutch cities are interconnected with fast rail services each 15 minutes, supplemented by local services, interconnected with city region light rail and bus networks and they also have an all-night fast hourly service. The Port of Rotterdam is linked by a waterway freight corridor and a dedicated freight railway.

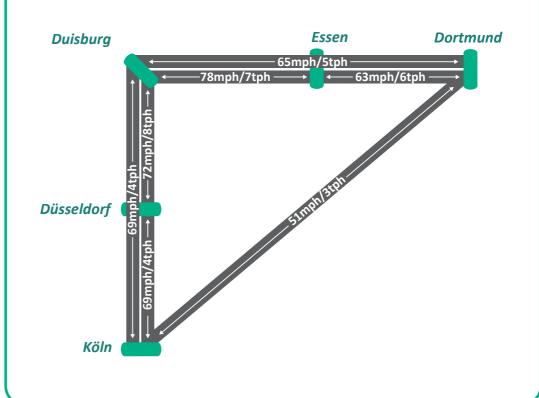
The Randstad has higher frequency rail connections



Rhein-Ruhr, Germany

The 10 million population of the Rhein-Ruhr region in Germany is shared over five large cities (Köln, Düsseldorf, Duisburg, Essen and Dortmund) and 10 smaller cities. The economy accounts for about 15% of Germany's GDP. It has one major airport (Düsseldorf) which carries a similar level of passengers as Manchester – and a high-speed rail link to Frankfurt (equivalent to Heathrow in size and function) taking just 50-55 minutes (from Köln). The region has the most intensive Autobahn network in Germany and there is a rail network of fast intercity, interurban and metro style services. These both rely on interchange at key hub stations and provide for direct through services across the region. Rail speeds between centres are typically 60-70mph with a frequency in excess of 4 trains per hour. A regional transport alliance (VRR) coordinates regional public transport. Duisburg is the largest inland port in Europe, supporting heavy industry and distribution parks.

The Rhein-Ruhr has higher speed and higher frequency rail connections



2. Current Plans and Developments

On connectivity, exciting progress is being made at last, but more needs to be done.

Starting in 2006, the Northern Way Transport Compact forged a strong pannorthern strategic direction for transport, driven by economic objectives. Focussed on links between city regions and with international gateways the strategy identified strategic delivery gaps and priorities for investment at a pan-northern level.

Many of the short and medium term priorities (for start by 2016) identified by the Northern Way are now complete, under construction, in programme or in a project pipeline. These include the Northern Hub, rail electrification in the North West and the North Trans Pennine corridor and highway schemes covering network gaps and the most congested sections of our motorways. This is a good indication of the North's ability (with partners and the support of Government) to make rapid progress. However, more needs to be done. Beyond 2016 the Northern Way highlighted the need for trans Pennine as well as north-south rail strategies involving new high-speed lines and an ongoing priority to complete gaps in the strategic highway network and to address congestion. These issues remain highly pertinent in 2014 and the years ahead.

"...we cannot expect the existing highway network to bear the brunt of expected demand growth"



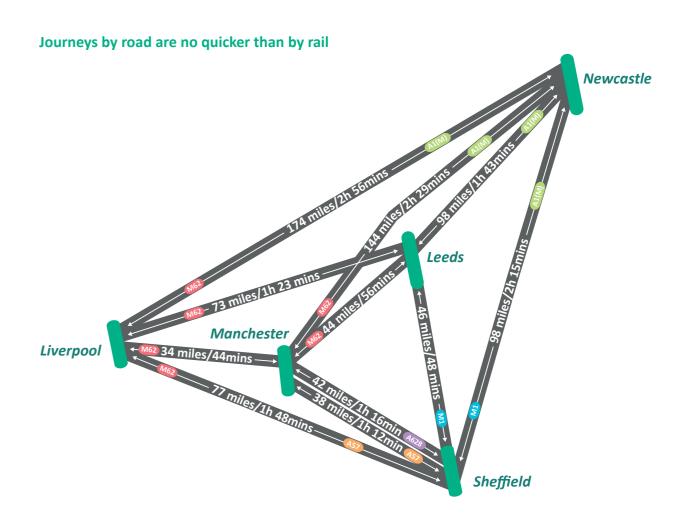
Highways

A section of managed motorway has been completed on the M62 between Leeds and Bradford and another is under construction on the M1 around Wakefield as is the A1 upgrade to motorway in North Yorkshire. Work on managed motorways is due to start in the next year on the M1 around Sheffield and on sections of the M60 and M62 around Manchester, along with work to upgrade part of the Newcastle Gateshead bypass, the A556 (M56 to M6) and access to the Port of Immingham.

Continued increases in congestion are leading to extended journey times and less reliable journeys which have an economic cost. The head of the Highways Agency recently suggested that with traffic expected to grow, we may need to get used to speeds declining, with 40mph becoming the 'new normal'.⁸ Further improvements to the strategic highway network in the North will be needed to address the emerging air quality problems around specific sections and to complement HS2 plans in specific locations.

Northern interconnectivity at present is very dependent on the M62 in particular across the Pennines. There is inevitably a limit to its capacity and the resilience of all trans Pennine routes at times of severe adverse weather is an issue.

Our proposition demands not only the use of managed motorways and technology to achieve the very best possible network performance but also completion of long standing gaps in strategic links. There is a Highways Agency study underway looking at the Sheffield – Manchester corridor but it is unlikely to conclude in favour of a new road link given the environmental constraints. We believe this corridor needs to be considered on a multi-modal basis.



There is a project pipeline that the Government should commit to urgently. Looking ahead, the managed motorways concept can be applied further to congested sections of the strategic network in the North, and new approaches to non-motorway strategic links can be found. But, we cannot expect the existing highway network to bear the brunt of expected demand growth.

⁸ Interview: Graham Dalton, Highways Agency Civil Service World May 2014

Logistics

The efficient movement of freight is central to the economic growth ambitions of the North. Whilst the highway and rail network is publicly funded, the ports and distribution centres are mostly private sector owned and operated and subject to competitive forces. Freight services are provided in a competitive market-place. The North of England has 14m m² of large warehouses. This stock is concentrated along the M62 corridor on both sides of the Pennines, in South Yorkshire, where the M18 provides important connectivity to the expanding logistics sector in Doncaster, and in the major ports. In some cases, these warehouses play a national distribution role, one that could be expanded, given improved network capability.

Within the North of England, the M62 plays a particularly important role. Freight accounts for about 40% of traffic on this key trans Pennine route. It is crucial to the North's economy – and any vulnerability (for instance at times of adverse weather) can be damaging. The M18 and M1 also perform a significant role and, together with the M62, provide important links to the Humber Ports.

Rail freight in Britain has grown, driven by the need to move containers from ports to central distribution points while retailers are beginning to use intermodal services for domestic distribution. Northern ports account for 30% of all port unit load traffic, with particular strengths in serving Ireland, Scandinavia and the Benelux ports.

Teesport has led in the development of port-centric distribution (e.g. for Tesco and Asda) which has the potential to attract logistics activity to sites with efficient low cost transport networks. Liverpool is the North's leading container port, and the Liverpool 2 and superPORT plans envisage major expansion building on the opportunities provided by the changing patterns of international shipping. The Humber is the largest trading estuary in the UK (by tonnage) and second nationally in handling roll-on roll-off freight. It is experiencing strong year-on-year growth. All these developments need complementary transport access capacity measures.

There is already some joint working underway in promoting the opportunity of increased connectivity and the benefits that might accrue. The Atlantic Gateway initiative, spanning the LEP areas of Greater Manchester, the Liverpool City Region and Cheshire and Warrington, is a collection of assets including transport infrastructures that, via their cross-boundary combination, already represents an opportunity for growth. This includes the strategic road and rail network as well as canal infrastructures, access to the Port of Liverpool as a priority, and logistics assets in each of the three sub-regional LEP areas on sites at which jobs can be created.

Inland distribution centres that are rail linked can offer occupiers competitive advantage, as can rail linked ports. But to take advantage of this, the North needs a rail network that allows longer haul trains to both reach and use the principal north-south rail corridors. By expanding rail terminals in the Mersey and East Coast ports to serve (respectively) Irish and Continental ferry and container services and expanding trans Pennine rail capacity and capability, a realistic alternative for some freight traffic on the M62 could also be created.

Rail

Northern Hub, due for completion in 2018, addresses the capacity and network constraints in and around Manchester. With the roll out of electrification in the North West, Midland Main Line and northern trans Pennine, studies are in hand to consider where to prioritise further electrification of the North's rail network. But the fundamental limitations on much of the rest of the network remain, constraining service options and with much of the route capacity fully used especially on the approaches and at city centres. Not all the Northern Hub outputs are committed and even when Northern Hub is complete and the main trans Pennine route electrified, the network will be operating close to capacity.

With very strong growth on commuter lines, the existing rail services across each city region are under pressure. They link a growing catchment to growing labour markets in the key urban centres across the North.

For freight, electrification of the Northern Hub routes will deliver the required W10 clearance for container traffic between Liverpool and Doncaster. The extension of gauge clearance to the Humber Ports (recently approved through the Humber LEP Strategic Economic Plan) and Teesport provides the opportunity to develop competitive intermodal services from both banks of the Humber, Teesport and the Mersey ports across the Pennines. But rail network capacity and the provision of rail-linked distribution parks are critical, and there is competition for paths between rail freight and passenger services on the rail network, especially in the Manchester/Liverpool area and in Yorkshire.

Looking ahead, the core problem facing the North's railways is that Victorian infrastructure, including at the key junctions in the network, requires major investment to offer the higher frequencies and interconnected services that are a feature of rival regions in Europe. Demand growth has exposed significant overcrowding problems in the North's rail network on approaches to and at city centres. There is a shortage of rolling stock to be put right and an urgent need to improve its quality.



"...Victorian infrastructure... requires major investment to offer the higher frequencies and interconnected services that are a feature of rival regions in Europe"

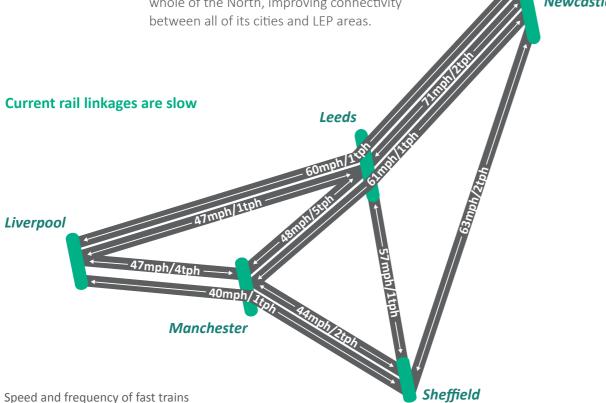


Trans Pennine

Each of the core trans Pennine rail routes is under examination for electrification. With growth in commuting from intermediate locations – such as in the Calder and Hope Valleys – electrification can help fit in a mix of stopping services needed to serve such locations and faster longer distance trains. A concentrated investment in a single corridor may achieve better journey times (for instance between Leeds and Manchester) but would leave other cities no better off (Sheffield and Bradford, for example). None of the trans Pennine routes offers direct access to the North's international gateway airport; and because of the need to operate through congested city centres none of them offers a resilient route for rail freight.

While electrification of the rail routes and deployment of good quality and sufficient rolling stock is an urgent and primary aim for the next 5-10 years, it is clear that in the longer term, for capacity as well as connectivity reasons, it would be right to examine a new rail-based route across the Pennines for the longer term.

While recognising that the Manchester – Leeds corridor is one of the most important linkages between the North's city regions, what is needed is an approach that brings benefits across the whole of the North, improving connectivity between all of its cities and LEP areas.



Maximising the Economic Benefits of HS2

HS2 is a central part of this proposition for the North. It provides the capacity and transformational connectivity needed southwards (to London, Birmingham and connections to Heathrow Airport). It offers – as the Growth Task Force has identified – substantial regeneration opportunities around HS2 stations – both where new stations are built and where existing stations are adapted to accommodate HS2 services. Northern cities are committed to being 'HS2 ready'.

Early delivery of HS2 would help accelerate the economic stimulus it will bring to the North. There would be advantages, for instance, in building the section of route linking Leeds and Sheffield early and connecting it into the existing network (and stations) rather than awaiting delivery of the full 'Y' package. This would have the great benefit of freeing up the local network in Yorkshire which has some of the slowest services — as well as creating capacity for speeded up long distance services such as those that operate between Newcastle, Leeds, Sheffield and Birmingham.

In general, HS2 as planned provides excellent interconnectivity with city region networks – for instance in Liverpool, Manchester and Newcastle. In some places, the design of the second phase of HS2 can be refined to ensure that further integrated city centre hubs are created, maximising its value to the wider city regions it serves. Planning the best overall arrangement involves examining all of the rail service requirements together. In some locations, existing capacity constraints might be overcome by developing new arrangements to reduce the number of local trains terminating in central stations – a potentially expensive use of crucial platform capacity that could be freed up for HS2 trains.

HS2 will release capacity for new services, and this creates the opportunity to provide places such as Bradford with a much better, hourly fast connection with London for example, as identified in the Yorkshire Rail Study. In other locations – north of Crewe, for example – the phased HS2 plans create a need to upgrade existing lines to add capacity for freight and shorten journey times for the onward extension of HS2 services. The North also awaits with interest the current studies of extending HS2 further north, as linkages with Scotland are another important part of the connectivity challenge.

In order to maximise the economic benefits, HS2 must be considered as an integral part of this proposition for northern connectivity.



"...HS2 is a central part of this proposition for the North"

⁹ Yorkshire Rail Network Study, March 2012- Metro, SYPTE and Leeds City Region



Airports

The North is well provided with growing regional airports with Newcastle, Liverpool and Leeds Bradford each handling over 3 million passengers per year. Growing airports in the North and expanding the number of routes they are able to offer is a key consideration. Newcastle is connected by the Tyne & Wear Metro and Liverpool via Liverpool South Parkway rail station, but a suitable rail/light rail connection to Leeds Bradford airport remains as an ambition that, under this proposition, needs to be turned into a fully realised project.

The international gateway of Manchester Airport handles over 20 million passengers per year. Here, the Airport Master Plan to 2030 recognises that surface access plays a crucial role in spreading the economic benefits across the wider North West. This needs to be broadened to address the whole of the North. The reason for doing so is to help create the demand for more direct flights and drive Manchester Airport up the international league table so that it increasingly meets the needs of northern businesses without the need to interchange at another European hub airport.

With the majority of people arriving by car, road access to Manchester Airport is a major strategic issue with the M56 forecast to be close to capacity by 2015. Journey times and frequencies by rail to Manchester Airport are poor: nearly 3 hours for Newcastle and 2h 30 minutes for Hull (both with an interchange en route), 1h 20 minutes for Sheffield and 1h 05 minutes for Liverpool. The scope to grow airport use will increasingly become constrained by road network capacity and so there is a need for enhanced rail connectivity (especially in an east-west direction), light rail connectivity and direct cross city services to the North's principal international gateway airport.

Robin Hood Airport Doncaster Sheffield is the international gateway to Sheffield City Region for passengers and is part of the Sheffield City Region logistics hub. Over £113m is currently being invested via RGF and the Sheffield City Region Growth Deal to improve its surface connectivity which will increase passenger numbers, and hence heighten its strategic significance and GVA benefit to the north. As part of the airport strategic growth plan, further investments are planned over the coming years.

In Summary

There are important changes taking place across the North's transport networks, and they will bring much-needed and welcome benefits. But they will still leave identifiable gaps in the strategic networks and elsewhere. More of the same, as the North grows, will not achieve the transformational change in connectivity and capacity needed to re-boot the North's economy.

3. The Proposition: A

New Strategic Approach

The Key Argument

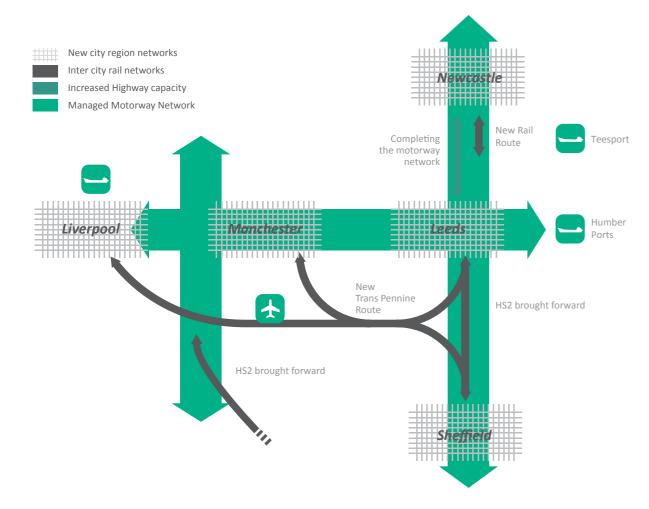
- ▶ There is an opportunity for the North to become a stronger economic zone. There are prime examples of similar multi-city regions succeeding in Germany and the Netherlands.
- This is principally about productivity and building on our existing competitive advantage, which means the North delivering more national output and tax receipts for the Exchequer. Measures that deliver the best growth return on investment need to be prioritised.
- ▶ HS2 will bring a huge connectivity benefit for the North and its connections with the Midlands and London.
- ▶ The evidence points to poor interconnectivity between the cities of the North. The gains that HS2 can bring would be doubled if this weakness is put right.
- When looking at the type of connectivity improvements needed, improvements are needed on both the highway and rail networks, but it is the rail network where demand is growing strongest and where there is greatest scope for transformational change.
- We need to develop a new strategic investment plan across all modes of transport to guide national and local investment decisions over the next twenty years, developed through a prioritisation process that maximises connectivity, productivity and GVA outputs.

One North: A Proposition for an Interconnected North

The key elements in the proposition are:

- ▶ A set of highway improvements continuing the Highways Agency programme of prioritised investment in addressing pinch points and best practice operational management, to which this proposition adds some investment in key missing strategic links, including for enhanced port access.
- ▶ A new 125 mph trans Pennine route, connected to the HS2 lines and the existing rail network, tunnelled as needed, linking the five city regions together with Manchester Airport and the ports. It will be a facility that will need to be planned for intensive use as a high-reliability all-weather central component in the North's transport system.
- ▶ Good access that enables the efficient and timely movement of large quantities of freight by rail, road and water covering not only ports, rail links and large distribution centres but also light commercial vehicles and airports for premium logistics.





- ▶ A programme of investment for railfreight, concentrated on port connections and rail-linked distribution centres, and taking advantage of the new trans Pennine route which will link with the major ports estuaries and north-south rail routes; connected to a number of major rail linked distribution centres. This can help reduce industry's trading cost base.
- ▶ Ensuring that South and West Yorkshire connectivity is enhanced to address key gaps in the strategic networks, better linking the adjoining city regions.
- ▶ A new railway between Newcastle and the Darlington area, designed to save 10 minutes journey time (using the 140mph capability of the new IEP train fleet) a journey time saving that will be of value to East Coast services in the medium term as well as HS2 services later; this is a scheme that will also free up capacity to enhance commuter rail provision between Tees Valley, Wearside and Tyneside.
- ▶ For each city region, a programme of city region rail service development, helping to broaden the benefits of HS2, characterised by new rolling stock operating European style cross city region networks, centred on hub stations but also allowing for direct connections to maximise connectivity gains.

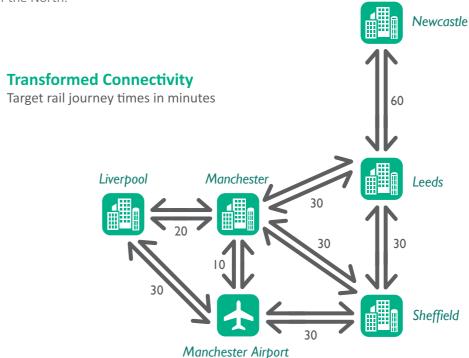
- The intention is that this proposition should complement individual Local Transport Plans at the city region and local level.
- ▶ Early adoption of key elements of HS2 as a key catalyst for northern city regeneration, in part to be built from the north (as well as the south) and to be integrated with the new trans Pennine link.

Outputs from this proposition are:

- ▶ An increase in commuting capacity for each city region to meet the levels of growth forecast for an expanding economy, which means increasing peak capacity by:
 - ▶ 120-150% for Leeds and Manchester.
 - ▶ 100-130% for Liverpool, Sheffield and Newcastle.
- ► Transformed journey times between the five city regions and therefore for the wider North.
- ▶ A new east-west route serving Manchester Airport supporting its expansion and direct access from every city in the North.
- ▶ A European gauge freight route across the Pennines, suitable for port based logistics and unitised loads. This could also be used for Eurotunnel style lorry shuttles.

This means spending £10-15bn on:

▶ A new trans Pennine route, supporting high quality connections between the cities of the North.



28 one north



"...Higher levels of productivity and greater competitiveness of northern-based businesses, achieved by a dynamic multi-centred regional economy"

- City regions equipped with new European-style cross-city networks.
- A set of new freight and logistics terminals and increased gauge port access routes.
- A set of highways investments to complete the national network in the North.

Together with HS2, this will re-balance capital expenditure/capita to allow the North of England to secure a level of transport investment which is more in keeping with its significance and its economic role.

The outcomes from this proposition are:

- ▶ A rebalancing of the national economy, with locations across the North able to attract and retain new businesses- a strengthened locational magnet for investment.
- ▶ Higher levels of productivity and greater competitiveness of northern-based businesses, achieved by a multi-centred regional economy able to function dynamically (just as is achieved in Germany's Rhein-Ruhr region, the Netherlands' Randstad and elsewhere).
- A modern logistics network, supporting trade and industry, offering the efficiencies that stem from high levels of reliability and resilience.
- ▶ A broadening and deepening of the economic benefits that HS2 brings to the North.

Elements of the Proposition Explained

Strategic Highways

The proposition for highways combines innovative approaches to achieving greater capacity from the network and removing strategic pinch points with more transformational approaches to the use of the highway network for freight and passengers. As a minimum the proposition would secure all programme and pipeline projects for delivery by 2019 and thereafter:

- ▶ Manage congestion by filling in the gaps in managed motorways across the M62/M60/M56 network and on the M1 and the M6/M61 north-south corridors.
- ▶ Remove network gaps from the North East to South Yorkshire and northwards towards Scotland.
- ▶ Improve highway connectivity between Sheffield and Manchester.

The proposition needs to address strategic gaps in the network with a particular emphasis on improving reliability for freight and business and other traffic.

Logistics

In order to support a strong and growing knowledge based economy the northern city regions need to have good transport access, enabling the efficient and timely movement of large quantities of freight by rail, road and water. The access must cover not only ports, rail links and large distribution centres but must also include light commercial vehicles and airports required for premium logistics.

National distribution centres that are rail linked (and so allowing users to save the cost of long distance road delivery) can offer occupiers competitive advantage, as can rail linked ports. In that way, the lower land and labour costs in the North can grow market share in the price sensitive warehousing and container port market. A number of the northern ports offer the prospect of significant growth (for example the new deep sea facility – the Liverpool 2 project – is planning to double the container handling capacity at the Port of Liverpool). Hull and Humber Ports similarly have significant opportunities for growth with the UK's largest Enterprise Zone (484 ha of land for port and renewable uses).

To realise the potential there needs to be additional network capacity for freight, generally on routes that can offer adequate loading gauge for 2.9m High Cube containers (W10 loading gauge). In practice this means establishing a limited network of routes that can connect northern ports and new or existing large rail linked sites (east-west) with the principal north — south routes. The new trans Pennine route offers this capability as well as the potential for a drive-on facility for road freight, in the style of Eurotunnel. This could offer an all-weather trans Pennine freight capability, and transform the freight functionality of the North.

Transforming connectivity in the North in this way would lead to:

- ▶ A 65% increase in freight train movements between the north and the south.
- ▶ A 60% increase in freight train movements accessing these south-bound corridors from Manchester, Leeds and Sheffield and surrounding areas. ¹0

HS2 Connecting up the North

HS2 creates the opportunity for:

- ▶ Passenger hubs where the HS2 station is fully integrated with the local/ regional rail network and other transport modes.
- ▶ New services on the main lines where capacity is released by HS2 in particular to allow more trains to run from places such as Bradford/ Wakefield to London directly.

"...A modern logistics network offering the efficiencies that stem from high levels of reliability and resilience"



¹⁰ MDS Transmodal analysis



Restructuring of services around HS2 hubs will work best where integrated stations are planned. Passengers from cities not directly served by HS2 services should be able to choose between an interchange offering a faster overall journey and a direct (if slower) service.

There is an important interface between the design of HS2 and measures that need to be taken in the North. There are three locations where this is most evident:

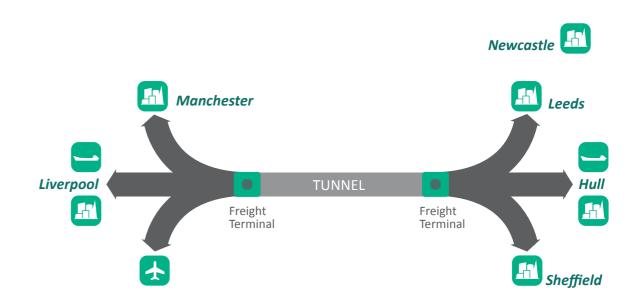
- ▶ In the case of Liverpool, there is an ambition to achieve a fast connection into the city. An upgraded or new line into Liverpool from the east could both speed up trans Pennine services to Manchester and beyond, and create a better connection for HS2.
- ▶ In Yorkshire, there is an opportunity to increase the use of the planned north-south HS2 line, by integration with the proposed new trans Pennine connection. If linked both southwards and northwards into the HS2 line a trans Pennine connection would bring many benefits of synergy. This would increase the value of investment in a trans Pennine link in the process and open it up to a rich set of fast intercity services between the North West and North East and the North West and East Midlands.
- ▶ In the North East, capacity enhancements are required between Newcastle and Northallerton to further enable the provision of fast intercity services across the north, and to ensure that HS2 services can be operated in addition to existing strategic services.

The early building of the Leeds – Sheffield section of HS2 in conjunction with a new trans Pennine connection would itself provide a major increase in speed and capacity across the North.

A New All-mode Trans Pennine Connection for the 21st Century

The M62 and other trans Pennine routes will become more congested in the decades ahead; for some connections, journey times are already very poor; all-weather resilience is not guaranteed; and too much of the North's economy is dependent on a few crucial road links.

Further electrification of trans Pennine rail routes is a crucial first step. It is long overdue and will bring benefits to many parts of the northern economy and the costs of rail franchises. Further incremental improvements in Manchester to Leeds journey times could reduce journey times to 40 minutes by 2020. In this proposition though, better connectivity between the major cities is not the only aim; it cannot be allowed to compromise local connectivity and freight capacity. And journey times need to be tightened further. Hence the need for the new trans Pennine corridor.



This might be developed in phases, but will require tunnelling and take time to build. It should allow for speeds of 125mph and our target of a 30 minute journey time between Manchester, Leeds and Sheffield city centres. The key to success is to ensure that the route is well connected to both the east and west and designed to dovetail with HS2, enhancing its benefits. On the eastern side it should link into the north-south HS2 line with a delta junction arrangement to allow fast services from northern centres such as Newcastle. York and Hull as well as centres in the Midlands and the south, such as Nottingham, to access the route. To the west, the line should serve Manchester Airport directly, and Liverpool/Chester as well as Manchester city centre. But we also need to see connections with the existing rail network for long distance railfreight. We will need to examine the case for purpose-designed terminals so that the corridor can offer a drive-on facility for road freight too, in the style of Eurotunnel. This could offer an all-weather trans Pennine freight capability, and in the longer term help transform the freight functionality of the North. We would anticipate cost levels of £5bn+ and a target delivery date of 2030.

While this is a major investment, it should be realised that investments of this scale are now routinely contemplated for London and the south. The alternative of route improvements will not be capable of delivering the transformational change this proposition calls for, benefitting all parts of the North's geography in a balanced way.

Newcastle and the North East Rail Links

This proposition in addition embraces two ambitions for better services for Newcastle and the North East:

- ► To speed up and make more reliable services to London on the East Coast Main Line well before HS2 Phase 2 is completed.
- ▶ To have HS2 services extend northwards from Newcastle to Edinburgh.

Whilst most of the constraints for the East Coast Mainline are at the southern end of the route there are improvements worth making in the North East that will generate faster journey times and free up capacity from Newcastle to the other four cities, Leeds, Manchester, Liverpool and Sheffield. This is likely to mean some new route construction and a capability of supporting at least 140 mile/h operation; we would set a target of a 10 minute journey time improvement between York and Newcastle. This investment will free up capacity for better commuter rail provision between Tees Valley, Wearside and Tyneside. It should be delivered by 2026 – and fits in well with the plan to accelerate the implementation of HS2 across Yorkshire early too.

Cross City Services

HS2 services and the inter city services using the trans Pennine link serve the large cities at the core of the city regions and will transform inter-city connectivity. The key to ensuring full benefit is obtained from these investments lies in transforming the connectivity within each city region too. Just as the North is 'polycentric' so too are the city regions. As the European examples show, this means high-frequency cross-city links, offering excellent direct connections between services — a seamless network for the user, a tube-style facility that becomes the natural travel choice. Growth in city centre employment simply depends on more peak rail capacity and that cannot be provided efficiently by sets of disjointed, low quality short routes.

New cross city services should be examined for Leeds, Liverpool (east-west), Manchester (getting more from the hub, increasing capacity), Bradford (north—south link such as a tram-train or similar) and Newcastle (including new connections to serve Northumberland). The progressive electrification of the network is a key to unlocking some of these opportunities. In Sheffield the need is to create connectivity between HS2 and the new trans Pennine route. For each city region, there are highways measures to consider and objectives for the rail network related to HS2 services, intercity services including those across the North, city region/commuter services and freight—especially access to/from ports and freight terminals and distribution centres. Cross city services need to include links for all the towns and cities of the north in order to maximise the value of both HS2 and the new trans Pennine link. These cross city services will play a central role in providing wider employment opportunities and enabling firms to access a larger labour supply.



Broad Timescales for Delivering the Proposition

By 2019

- ▶ Northern Hub and electrification between Liverpool-Manchester-Leeds-Hull and Middlesbrough and consequent new rolling stock.
- Midland Main Line electrification.
- ▶ Complete all national pipeline strategic highway schemes.

By 2024

- ▶ Further electrification including to Scarborough, Calder Valley and Hope Valley/south trans Pennine routes, together with new electric fleets, in addition to the well evidenced need for more rolling stock generally across the North.
- ▶ 40 minutes journey time at most between Leeds and Manchester and improvements in services between Manchester and Sheffield.
- ▶ Managed motorways complete across the M62/M56/M60 network and north-south on M1 and M6/M61.
- ▶ Network gaps from the North East to South Yorkshire and northwards towards Scotland closed
- ▶ Rail/light rail connection to Leeds Bradford Airport.

By 2026

- With HS2 delivered earlier as far as Crewe, provide additional capacity and capability for onward links to Manchester, Liverpool, Warrington and to both inland freight terminals and norts
- ▶ Speeded up (140 mph) and more reliable ECML and new route to serve Newcastle.
- Cross city region suburban services for Leeds, Liverpool (east-west), Manchester, Sheffield, Bradford (north-south link such as a tram-train or similar), Newcastle provided by good quality rolling stock.

By 2030

- ▶ New tunnelled trans Pennine route at 125 mph.
 - ▶ To the west, direct connectivity with Manchester Airport, Liverpool and Manchester.
 - ▶ To the east connectivity with Sheffield, Leeds, Newcastle and Hull.
- ▶ Recasting HS2 in Yorkshire bring forward Leeds-Sheffield section in conjunction with new trans Pennine route
 - ▶ In Leeds integrate HS2 into existing Leeds Station.
 - ▶ In Sheffield City Region create connectivity with a HS2 station with east-west capability.

4. Next Steps



"...infrastructure solutions designed around just one mode or one city region will result in unnecessarily expensive and poorly integrated outcomes"

Benefits of Working Together on an All Modes Strategy

Working with partners across the North and the national agencies, we will develop this proposition into a clear phased investment programme – a strategy driven by its economic value and its scope set to deliver the economic 'northern powerhouse' identified in George Osborne's Manchester speech of June 2014. We will use a transparent framework to develop a clearly prioritised list of economically driven investment programmes and interventions to deliver our ambition. This strategic investment plan will cover all modes of travel and can inform national and local decision-making over multiple Comprehensive Spending Review periods.

We will work with the key national transport agencies – Network Rail, the Highways Agency and HS2 Ltd to ensure that across the North and in each city region the best way is found to maximise the value of each investment. There is a risk that infrastructure solutions designed around just one mode or one city region will result in unnecessarily expensive and poorly integrated outcomes. A better approach, and part of this proposition, is that the wider strategy is developed looking across all of the transport modes and across the North to deliver best overall value for money.

We believe that the maximum economic benefit will be generated when the interventions are considered in an integrated and holistic way. New road and rail corridors can be examined together to ensure any adverse local impacts are minimised. Whether it is coordinating HS2 with local city networks or considering hybrid rail and highway trans Pennine schemes for freight, a successful strategy can only be achieved by the national transport agencies and the city regions working together. We will also wish to examine funding options with our partners.

Therefore we believe there is a role for a steering group, not constrained to examine a single mode of transport but with the ability to draw together connectivity gains with positive economic outcomes to guide this work.

Finalising the Proposition

The prioritisation will be driven by an assessment of how cost-effective the different interventions are in delivering growth for the whole of the North and the country as a whole. Conventional approaches to calculating economic benefit underestimate the impact of the proposed transformational proposition since they assume fixed land use and demographic patterns and supply side factors. They also fail to address how productivity improvements drive up net national tax receipts. The most appropriate approach will be one that

allows changes to supply side factors such as labour force but recognises that there will still be constraints and other factors influencing the relative competitiveness of other cities and regions. The framework will need to take a pragmatic approach to ensure a real connection with land use and networks, striking a balance between being too simplistic and overly theoretical. Adopting an appraisal framework that doesn't reflect supply side constraints, whilst at first sight attractive, will probably overstate the realisable benefits from the interventions. This second phase will subject the strategy and its elements to a value for money examination and appraisal of their contribution to economic growth, nationally as well as for the North. For comparison purposes, the appraisal should include a long-term do minimum strategy designed to keep pace with growth.

How the Strategy will be Delivered

This proposition has been led by the five city regions. It provides a platform for consideration by all of the major towns and cities and Local Enterprise Partnerships of the North. The prize, once developed into a clearly prioritised strategy, will be considerable. The work that was undertaken on prioritising the Northern Hub has shown what the North can achieve if it works together. This proposition requires a continuing northern voice and perspective to ensure it comes to fruition. It will enable the North of England to compete more effectively for future resources and strengthen the national and northern economy.

The proposition is intended to be a constructive contribution to a debate which needs to take place over the coming months. We are optimistic that the analysis will command the respect of Government. We look forward to crossparty support and active Government leadership in working with ourselves, Network Rail, HS2 Ltd, the Highways Agency and other key partners to develop a strategic investment plan – One North – over the coming months.

"I welcome the City Regions of Leeds, Liverpool, Manchester, Newcastle and Sheffield working together and providing a platform for all major towns and cities in the North to combine and strategically plan for strengthened connectivity. Not just North-South, but also East-West connectivity, to deliver the growth and jobs that our regions need and get the very best from our investment."

Ed Balls MP, Shadow Chancellor of the Exchequer

