

Central Trans-Pennine Corridor East – West Connectivity

An Economic Study

ON BEHALF OF THE LANCASHIRE ENTERPRISE PARTNERSHIP

IN CONJUNCTION WITH THE WEST YORKSHIRE COMBINED

AUTHORITY AND THE YORK NORTH YORKSHIRE & EAST RIDING LEP

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FINAL REPORT



1.0 Executive Summary

Introduction and overview

1.1 Cushman & Wakefield (C&W) and SYSTRA have been commissioned by the Lancashire Enterprise Partnership, together with the West Yorkshire Combined Authority (WYCA) and the York, North Yorkshire and East Riding LEP to explore the potential economic benefits that might arise across the North of England from enhanced connectivity between Lancashire and North and West Yorkshire. The purpose of this is to develop a strategic economic narrative to support the case for potential investment and intervention in road/rail based connectivity across these three functional and connected economies comprising the Central Trans-Pennine Corridor. The study focus has been on a wider economic impact case to understand the likely impacts of enhanced connectivity on the “real” economy and an evidence based quantitative and qualitative assessment to support the economic case for improved connectivity has been set out.

1.2 In summary, this report identifies that:

- **The “Central Trans-Pennine Corridor” is already a major economic driver of the Northern Powerhouse and UK economies** - the three LEP areas together have a combined annual GVA output of around £100bn, representing around 7% of national GVA output and one third of the Northern Powerhouse economy GVA output¹. They comprise around 8.5% of the national population² and are home to over 210,000 businesses. The defined ‘Corridor’ for the purposes of this study (see paragraph 2.8) is estimated to have an annual GVA output of around £70bn³, representing around 22% of the overall Northern Powerhouse economy GVA output and circa 5% of national GVA output. It is therefore evident that this is already a Corridor of national economic significance and value.
- **The Corridor is home to globally significant businesses, supply chains and economic assets** – it is home to the largest aerospace cluster in the UK (BAE Systems, Rolls Royce etc), with major sector representation and internationally competitive advantages in sectors such as automotive and other advanced manufacturing, digital, health/life sciences and low carbon/energy. These fully align with the Northern Powerhouse’s ‘Prime Capabilities’ as per the Northern Powerhouse Independent Economic Review (IER). It comprises a portfolio of economic assets and drivers that no other region in the UK can offer, including 14 nationally designated Enterprise Zone sites within or adjacent to the Corridor. It is home to world class businesses and industry clusters in key national priority sectors, world leading research-intensive Russell Group/N8 Group universities, growing and dynamic European cities and a quality of life and visitor economy offer that is second to none. There are wholly complementary sectoral strengths and existing economic activities across the Corridor and opportunities to both enhance the resilience of existing businesses and attract new inward investment in key sectors at all spatial scales.
- **There is significant ambition and ‘untapped’ economic growth potential** – this is a unique and diverse economy with major growth potential offered by its globally recognised economic assets, but which is currently constrained by the lack of east-west connectivity. The three LEP

¹ Based on ONS GVA NUTS 3 data (2015 estimates)

²

<https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/bulletins/annualmidyearpopulationestimates/latest>

³ Based on ONS GVA NUTS 3 data (2015 estimates) where applicable although in some instances (Harrogate/Craven/Calderdale) estimates are based on other local sources (such as the Regional Econometric Model) with assumptions applied as necessary as ONS data is not readily available at this spatial scale

areas have ambitions to together deliver over circa 100,000 new jobs and over 100,000 homes within the next ten years. Improving connectivity would accelerate employment and housing delivery, increase the scale of the overall growth opportunity (jobs, homes and GVA) and improve additionality prospects. Economic output and productivity on a per head basis across the LEP areas is reported to be below the national average and there is a need to continue to seek to narrow this gap through productivity and output growth.

- **Investment in East-West physical connectivity could assist to deliver the IER's transformational economic growth scenario** – according to the IER, this is based on substantial improvements in the skills base, in innovation performance, and in transport connectivity, with GVA projected to be some 15% higher than a 'business as usual' projection. There has been an acknowledged lack of investment in strategic transport infrastructure in the Corridor and this is constraining its economic potential. There is no East-West Strategic Road Network link and the recent focus has been on HS2/NPR in the Core Cities and the M62 Corridor to the South. Without intervention, the Corridor will not reach its potential to deliver against TfN's transformational growth scenario as set out within the IER. There is an identified need to invest in both road and rail infrastructure at strategic and local levels.

Improved connectivity could be highly likely to increase the size and quality of the labour market through enhanced accessibility; increase the efficiency of supply chains; increase the size of the customer base; promote increased Research & Development (R&D) activity and the commercialisation of intellectual property; reduce transport and overall costs of production; and increase overall business productivity through increased agglomeration. The travel to work analysis points to geographically proximate but economically detached/self-contained labour markets which is constraining the Corridor's economic potential. Economic benefits will be realised through better connecting economies and businesses/people within them – the evidence base for this is widely acknowledged. There are also distinct mismatches between areas of distinct socio-economic need (e.g. in parts of East Lancashire) and areas of economic opportunity (e.g. Enterprise Zone sites/key urban areas) which enhanced physical connectivity could address.

- **Enhancing the Corridor's economic potential fully aligns with Government policy** - this is an identified Corridor of unique opportunity with significant latent growth and output potential. Enhancing East West connectivity is a recognised key priority for all three LEPs as defined within the existing policy and strategy base and their respective SEPs, the Northern Powerhouse Strategy, TfN strategy and the Government's emerging Industrial Strategy and recent Housing White Paper. Addressing the existing East-West connectivity constraints will enable the Northern Powerhouse economy to achieve its growth ambitions in accordance with national Government agendas. Whilst this analysis has sought to capture *current* economic activity and *real* evidence of East-West inter-relationships where possible, it is imperative that the economic *potential* of the Corridor is acknowledged. It is considered that the current connectivity issues are restricting the realisation of the scale and extent of potential economic opportunities that exist.

1.3 Our analysis has explored both the quantitative and qualitative economic case for enhanced connectivity. Key headline messages are presented below from this analysis.

Qualitative case for enhanced connectivity

1.4 The qualitative case for investment in enhanced east-west connectivity is based around the following seven key potential benefits:

1. Supporting complementary high growth, high value economic sectors and clusters

Across the Central Corridor and the three functional LEP areas more generally, there are a number of key complementary economic sectors which are considered to be either existing or likely future significant drivers of economic output and productivity. Enhancing the potential for the increased agglomeration of business activity within and between these key existing and growth sectors through improved physical connectivity will undoubtedly offer the potential for enhanced overall economic output across the Central Corridor as well as promote increased innovation, supply chain development, knowledge transfer and overall operational efficiencies. The evidence base to support this relationship between improved physical connectivity and business agglomeration is widely accepted. The economic sectors where we consider there to be key current commonalities/complementarities and significant opportunities for growth across the Corridor based on current economic assets and activity and growth opportunities include the following, which include all four of the IER's identified 'Prime' capabilities:

- Advanced/High Value Manufacturing and Engineering (particularly aerospace, automotive and advanced/technical textiles)
- Health/Med-tech/Life Sciences
- Digital
- Low carbon/energy
- Logistics/distribution
- Food and drink

2. Unlocking the skills, R&D and innovation potential of Corridor economy

The Corridor is home to 9 Higher Education Institutions (HEIs) including a number which are ranked globally as leading institutions in particular taught and research areas. The Universities of York and Leeds form part of the 24 research-intensive, world-class universities that make up the Russell Group and the N8 Research Group includes these as well as Lancaster University. Through the recent Science and Innovation Audit (SIA) and the proposals for a Northern Powerhouse Advanced Manufacturing Corridor, there are plans to further enhance collaborations between the Lancashire and the Sheffield City Region economies including the planned new Advanced Manufacturing Research Centre (AMRC) on the Samlesbury Enterprise Zone site, linked to the existing highly successful operation in Rotherham. Improved Corridor connectivity could deliver increased opportunities for collaboration not only between the universities but also increased opportunities for University-business collaboration and for the Universities to work more closely with the FE sector, particularly in areas where there is no physical HEI presence, a key issue for a large part of the area. Enhanced connectivity could therefore also increase the attractiveness and accessibility of higher level skills development to learners which may have otherwise not been willing/able to consider skills development opportunities and also assist to enhance rates of graduate retention through improving access to employment opportunities, again a key issue for many areas. The Corridor's existing FE/HE offer has a strong focus on key IER and identified growth sectors including advanced manufacturing and Science, Technology, Engineering and Mathematics (STEM) based curriculums and this is evidenced through recent

and proposed initiatives for example in Lancashire such as the Blackpool Energy HQ facility on the Blackpool Airport Enterprise Zone.

3. Supporting the growth potential of other key transport hubs

Enhanced road and rail connectivity could deliver significant benefits to other modes of transport and established transport hubs within the Corridor and the wider North of England, including the following:

- Leeds Bradford International Airport (LBA) – a rapidly expanding airport with plans to double passenger numbers to 7m per annum by 2030 and to explore freight opportunities.
- Manchester Airport – a nationally significant airport with the designated Airport City Enterprise Zone seeking to promote a global business destination including a MediPark focused on the life science sector opportunity.
- Leeds, Preston and York Rail Stations – all existing major rail hub stations with proposals for major expansion and connectivity enhancement at Leeds and Preston as proposed HS2 station hubs.
- Port of Heysham and other East/West coast ports outside of the Corridor (e.g. Liverpool, Hull, Immingham, Teesport).

4. Supporting the needs and expansion of existing major employers and their supply chains

The Corridor is home to a number of major, globally important businesses and employers, responsible for significant levels of employment and economic output. These are critical to the Northern economy, not only due to their direct employment and economic output but the wider supply chains that they create and support. It is also home to a number of major supply chains in key sectors which are key to the future economic growth of the Northern economy and increased mobility and connectivity across the North will be a key driver of the success of these supply chains and wider economic growth prospects.

With the uncertainty of what Brexit could mean for these businesses and wider global competition within the industry (particularly from lower cost base locations), there is a need to ensure that the local and regional physical infrastructure that these businesses require to meet their operational needs is adequate, otherwise this could be another push factor in favour of relocations to other locations globally. With increasing globalisation and overseas competition across a number of sectors, businesses are under significant pressure to enhance the efficiency of their supply chain operations. With an increasing focus on 'just in time' manufacturing strategy, ensuring supply chain efficiency is key. Supporting the needs of businesses and their supply chains to safeguard existing activity as well as supporting future investment/expansion activity is therefore critical particularly given the scale of operations in sectors such as aerospace and automotive and others in this Corridor. The Lancashire SEP identifies that the failure to deliver the transport infrastructure needed to support sustained business success, accounts for one-quarter of Lancashire's current economic performance gap with the rest of the UK.

5. Attracting new high value business activity and inward investment to the Corridor and wider Northern Region

There is also a case for investment to enhance east-west connectivity from the perspective of attracting new businesses and inward investment to the Corridor and the wider Northern region to strengthen existing clusters in key sectors. The quality and provision of transport infrastructure is likely to be a key factor accounted for by inward investors when assessing the merits of location

options as this can impact upon both labour supply and supply chain operations as well as the accessibility of the location to other company locations across the UK and internationally.

Place marketing and the promotion of wider quality of life is also an integral component of securing inward investment and transport connectivity is key to ensuring that people can live in attractive areas and commute to their workplaces efficiently and effectively on modern and reliable transport networks. Promoting accessibility to high quality cultural, leisure and visitor economy assets will also be important as part of this. For example, the Corridor links together a number of designated national parks, areas of outstanding natural beauty (e.g. the Forest of Bowland and Nidderdale) and coastlines with a number of highly popular coastal resorts such as Blackpool, Scarborough and Whitby which are key economic drivers in their own right. Ensuring that people can access these assets efficiently via road/rail will enhance the attractiveness of the Corridor and assist to drive levels of visits and associated net additional expenditure from both residents within the Corridor and those further afield.

6. Supporting housing and employment growth proposals and requirements

The Central Trans-Pennine Corridor as a whole is likely to experience significant population growth over the medium term in line with wider UK projections and local authorities are planning for this through allocating land for development in conjunction with key national drivers such as the Government's recent Housing and Planning Act (2016) and Housing White Paper (2017) and proposed Government interventions to drive housing supply. It is not only important that there are sufficient new homes and jobs to meet the needs of a growing population, but also that people can physically access employment opportunities. The delivery of transport infrastructure can also directly unlock housing and employment land for development through serving as critical enabling infrastructure.

It is essential that existing and proposed employment sites are supported with the necessary transport infrastructure to maximise their potential. It has already been identified that a number of businesses in the Corridor rely on east west movements as part of their business operations and with such significant growth planned, the emphasis on east west movement is only likely to increase.

It is also recognised that many of the proposed strategic housing and employment sites are located on the either side of the Corridor (i.e. around Leeds/Bradford/York/Harrogate and Preston/Lancaster). This is particularly evident with the locations of the 14 nationally important Enterprise Zone sites – these are all located on the fringes of the Corridor. This is reflective of the larger urban settlements on the fringes of the Corridor and the stronger North-South links in these areas. It is therefore critical that East-West connectivity is enhanced to enable people to access suitable and available employment opportunities, particularly from identified areas of socio-economic need which are concentrated in the heart of the Corridor (see below).

7. Addressing socio-economic inequalities

Parts of East Lancashire (e.g. Burnley, Pendle, Blackburn) and West Yorkshire (e.g. Bradford) represent some of the most deprived communities nationally, based on the 2015 Index of Multiple Deprivation (IMD). Enhanced East-West connectivity (in terms of journey times, cost and resilience) across the Corridor would assist to address the identified socio-economic inequalities and disparities and to enable people to access economic opportunities across the geography of the Corridor. It would enable increased cross boundary/cross county flows and movements and would provide increased opportunities to better connect people to employment and skills/learning and maximise the potential of the Corridor's economic asset and business base. There is no doubt

that the current physical connectivity issues on an East-West basis are restricting the horizons of people, particularly from a travel to work and business to business perspective. Given the relatively small point to point distances between key locations within the Corridor, the transport connectivity issue should not be as significant as it appears to be and needs to be addressed if the economic potential of the Corridor and wider Northern Powerhouse economy is to be fully realised and the productivity gap with the rest of the UK closed.

Quantitative case for enhanced connectivity

- 1.5 In addition to the above qualitative benefits of enhanced East West connectivity, a quantitative assessment, based on a bespoke wider economic impacts model was developed in accordance with the Department for Transport's (DfT) WebTAG.
- 1.6 The modelling work examines two key areas of potential benefit:
- Firstly "agglomeration" benefits – the benefits of businesses being located closer together and the associated increases in productivity that arise from this; and,
 - Secondly the "employment" effects, which look at the benefits to the labour market of improvements in connectivity where employers and employees can be better matched increasing productivity and better matching skills. In turn this brings additional employees into the system who may not previously have been in work.
- 1.7 To provide an understanding of the potential wider economic impacts of future strategic transport investment across the area, nine "tests" have been conducted covering a range of scenarios reflecting improvements to road and rail, both separately and in combination across the defined study area. The tests also include consideration of the impacts of different scales of intervention. The tests avoid identifying and testing specific schemes. Instead the modelling has focused on what the overall output would be, in terms of generalised cost or journey time reduction. The outcomes of these scenario tests in terms of annual Gross Domestic Product (GDP) benefits are presented below in Figure 1.1:

Figure 1.1. Agglomeration and Employment Model £m GDP per annum

	Description	Agglomeration Model	Employment Model	Total	Rank
Test 1	10% GC Reduction	£30.16	£4.42	£34.58	3
Test 2	20% GC Reduction	£61.52	£9.77	£71.30	1
Test 3	10% GC Reduction (Highways)	£18.77	£3.62	£22.4	5
Test 4	20% GC Reduction (Highways)	£30.32	£8.30	£36.63	2
Test 5	Average to Minimum JT	£15.70	£2.08	£17.79	6
Test 6	Maximum to Average JT	£6.98	£2.09	£9.08	9
Test 7	10 minute Cross Pennine Reduction	£10.92	£0.90	£11.82	8
Test 8	20 minute Cross Pennine reduction	£11.25	£1.01	£12.26	7
Test 9	25% Rail GC Reduction	£30.75	£1.74	£32.49	4

- 1.8 The following key conclusions can be drawn from this:

- There is likely to be a significant level of net additional economic benefit from wider economic impacts attributable to enhanced East-West transport connectivity across the corridor;
- Investment in both road and rail will be beneficial considering the wider economic impacts identified. Indeed, the difference between the modelled outputs from tests 1 & 2 (generalised cost reduction on both road and rail) and tests 3 & 4 (highways only) suggests that the scale of benefit from a reduction of generalised cost on rail is in the same order to that from road. The results of test 9 confirm that potentially significant benefits may accrue from investment in rail. In terms of distribution, investment in highways spreads the benefits across the study area, while rail provides significant benefits at key 'nodes' (those larger town and city centres with a rail service);
- This distribution is intuitive given the nature of the road and rail networks, but the fact that the scale of benefits from rail is similar to that from road is noteworthy, as the rail network is relatively limited in the corridor, suggesting there is 'more bang' in terms of wider economic impacts from a limited number of opportunities to improve rail travel. This is perhaps reflective of the very poor quality of rail services in East Lancashire at present, which presents a large opportunity for transformational change. One caveat on the difference between road and rail is that some benefits may have been lost, potentially significant in scale, as no account of entirely 'external' trips (starting and finishing outside the modelled area, for example, Blackpool to Scarborough) is taken within the modelling work. It is likely that this will affect the road element more than rail, as there are potentially significant numbers of long distance road trips in the corridor;
- There is little additional marginal economic benefit of increasing cross Pennine journey time savings from 10 minutes to 20 minutes. This is a function of the fact that in practical terms, reducing journey times by 20 minutes results in unrealistic average speeds for many road trips (i.e. in excess of legal limits). This also suggests that the main benefits are gained from shorter trips in the immediate cross-boundary area of the corridor.
- The reliability tests (tests 5 & 6) generate a relatively lower level of wider economic benefits than others, suggesting that many of the trips that are affected by poor reliability are relatively short trips. These results suggest that the main reliability benefits may be localised, not from 'end-to-end' or longer journeys. It may therefore be that investments in critical 'pinch point' resilience issues in the network may be the answer to this issue;
- This point regarding local issues is reinforced by the finding that there are diminishing returns on highways improvements - a 20% generalised cost reduction doesn't double the wider economic benefits gained by a 10% generalised cost reduction on highways.

Summary

- 1.9 Overall, there is considered to be a robust and compelling quantitative and qualitative economic case for enhanced East-West Connectivity across the Central Corridor. Improved connectivity would not only address the economic challenges and ambitions of the Corridor itself but it could also enhance the wider economic prosperity of the North as a whole and enable the Corridor to provide a complementary route to the M62 corridor to provide additional resilience to Trans-Pennine connectivity more generally, a key pan-Northern objective in terms of road and rail, passenger and freight movements. A failure to improve East-West connectivity and address current connectivity constraints would be likely to critically restrict the growth potential of the Corridor economy, as a key driver of the wider Northern Powerhouse economy.
- 1.10 The analysis has demonstrated that there will naturally be significant economic benefits of investing

in both road and rail infrastructure and both modes are important to meeting current and future economic needs. An optimum investment strategy would require a comprehensive approach to developing and delivering a phased multi-modal investment programme to address both strategic transport connectivity and critical 'pinch point' resilience issues.

- 1.11 There is a limited rail network across the Corridor, particularly in East Lancashire and the provision of an enhanced rail network would need to be aligned with local demographic and business/economic need and growth opportunities. Rail flows are typically targeted at major settlements where there are more likely to be high value jobs, for example in the producer services and consumer services sectors, and rail networks can also significantly enhance accessibility to urban centres to improve the mobility of labour supply. The case for transport investment within the Corridor needs to relate to the current and future economic drivers of the Corridor and these are varied, although appear to focus significantly on advanced and innovative manufacturing based activity, which is likely to continue to be dependent upon an efficient road transport network, along with other key sectors such as logistics, food and drink and energy. However, other professional service based growth sectors such as digital and health/life sciences may be more reliant upon enhanced rail services to enhance their output and growth prospects, particularly through enhanced agglomeration and access to skilled labour.