

SHAPING REGIONAL INFRASTRUCTURE

PRIORITIES FOR GROWTH

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Introduction

As the UK begins its exit from the EU, there will need to be a renewed focus on delivering growth that is felt in all parts of the country. Improving our infrastructure to better link our cities and regions with each other, as well as with the rest of the world, will play a key role in this. In doing so, we can address regional disparities, and drive productivity and prosperity for all.

According to the CBI's 2016 report, *Unlocking Regional Growth*, the most productive area of the UK is now almost three times more productive than the least, with nine out of ten cities performing below the European average. By unlocking higher productivity, there is the potential to add £175 billion to England's economy over the next decade.¹

When looking at the main drivers of productivity, infrastructure was highlighted as a key priority. Indeed, the analysis showed infrastructure's crucial role in connecting businesses to supply chains and a greater talent pool. This is particularly important for the North of England, where better transport links could provide access to a population of up to 16 million – the same number that is within an hour of London today.²

The need for improvements in our regional infrastructure aligns with business sentiment. The 2016 CBI/AECOM infrastructure survey revealed that just 26% of businesses are satisfied with the infrastructure in their region, with the majority of businesses reporting concerns about the capacity, connectivity and resilience of their local infrastructure.³

With the government widening the focus of the devolution agenda as well as reemphasising the need for a modern industrial strategy, a clearer picture of each part of the UK's infrastructure needs will be critical. Moreover, a better understanding of our regional infrastructure priorities will provide an important evidence-base as the government looks to plan for its road and rail investment into the 2020s and beyond, and the National Infrastructure Commission starts to set out its long-term vision for our future infrastructure. All of this is critical to building on the UK's existing economic strengths, and driving longterm competitiveness.

Within this context, this report brings together both quantitative and qualitative data gathered in each region to present policy-makers, both regionally and nationally, with a clear set of strategic infrastructure priorities. It sets out key cross-cutting priorities which are common to all regions, and six priorities specific to each.

Importantly, the priorities are not exhaustive nor definitive; and in the face of tightening public finances, it is clear that further private sector investment is required to help deliver the pipeline of projects needed in the UK. As such, the intention of this work is to inform a conversation between business, government and broader stakeholders about how all parties can work together to deliver the infrastructure necessary to drive growth and prosperity across the country.

Delivering infrastructure across the country

Each region will of course face unique challenges, and indeed opportunities, when it comes to its local infrastructure needs. However, in considering the data from the CBI's *Unlocking Regional Growth* report, the 2016 CBI/AECOM infrastructure survey and in conversations with CBI members across the country, it is clear that common themes start to emerge. To this end, this report highlights the following cross-cutting priorities for consideration by national policy-makers as well as strategic and sub-national bodies:

Linking regions to harness growth across the country

Businesses across the country cite the need to improve connectivity within and between regions as a priority. Improving links between the UK's largest cities can help drive growth and productivity through agglomeration, whereby businesses have access to a broader labour market pool, a wider range of markets and better connections to supply chains. Indeed, the CBI's analysis found that for every 1 million increase in the population that are within 60 minutes of travel time of a postcode area, this corresponds to an additional £0.50 in Gross Value Added (GVA) per hour. For example, reducing travel times between cities in the North of England, via the best mode of transport, could provide access to a working population of up to 16 million, matching the number within an hour of London today. There are also productivity gains to be made by shortening travel times within local areas. Indeed, increasing the speed of travel within cities by 50% can increase productivity by up to 14% in some instances.⁴

Improving regional connectivity with international markets

Post Brexit, businesses recognise more than ever the need to link the whole of the UK to international markets to increase and encourage export capabilities. This not only boosts the potential for growth, but also raises competition and encourages innovation. To this end, businesses across all regions cite the need for a long-term aviation strategy which works for all parts of the country; making full use of existing capacity whilst enabling regional airports to develop their own unique identity and competitive advantage in addition to fulfilling a wider strategic role for UK plc. Importantly, this strategy must look at the future of aviation within a fully integrated transport system, and ensure the UK's long-term capacity needs are met. In addition, ports are key international gateways for the whole country, handling an estimated 95% of the UK's trade in goods, but are currently hindered by pinch-points across the road and rail network.⁵ Poor surface access to both airports and ports, was a therefore common challenge among businesses in all regions. This will need to improve to ensure that all businesses have access to international supply chains and markets in continental Europe and beyond. This investment is now vital at a time when boosting UK trade and exports is arguably more important than ever.

Finding the governance models that work best for each region

Businesses across the country are seeking greater clarity on where future infrastructure decisions will sit for the region in which they operate. The CBI/AECOM 2016 infrastructure survey revealed that a lack of strategic regional plan and fragmented regional decision-making are seen as the top barriers to improving local infrastructure. In addition, less than half (47%) of businesses currently think that the devolution agenda will improve infrastructure within their region. Confidence is highest in the regions where there has been the greatest clarity on what devolution will look like, for example across the Northern Powerhouse and Midlands Engine, which would suggest a positive view of sub-national bodies, such as Transport for the North and Midlands Connect.⁶ While we should not attempt to roll out a 'one-size-fits-all' approach to sub-national governance, it is essential that each part of the UK has the means and ambition to take forward a shared vision of its own, which complements a long-term national strategy.

Joining up all forms of infrastructure to plan strategically

Businesses in all regions voiced a need for a more joined up and strategic approach to planning and delivery across the different types of infrastructure. In particular, the need to better link up local housing plans with economic infrastructure was seen as a priority, with the government's announcement of a Housing Infrastructure Fund in the 2016 Autumn Statement a welcome step.

Over the longer-term, businesses are keen to highlight the role of technology in improving the UK's infrastructure, with CBI research highlighting that 94% of businesses believe that digital technologies are a crucial driver of increased productivity.⁷ Future populations will dictate the way infrastructure will change, with technology becoming the main interface between people and infrastructure. It can also reduce costs, influence the design, and improve the maintenance and delivery of infrastructure. From delivering smarter infrastructure through project management, to the maintenance and operation of assets, technology will play a decisive role in the future of infrastructure use and delivery, and should therefore be a key consideration for both the government and the National Infrastructure Commission.

North East

Whilst businesses in the North East believe improvements are needed in their region's infrastructure, they are broadly optimistic that devolution would bring these opportunities. The Government and local authorities must prioritise finding governance and delivery models which meet this expectation, providing the regional, national and international connections needed to maximise the North East's potential for growth.

Regional profile

- 60% of businesses in the North East report being dissatisfied with infrastructure in the region, compared with the national average of 46%. Less than half (41%) say UK infrastructure has improved over the last five years, and only 42% believe it will improve in the next five.⁸
- 63% of businesses in the North East believe that greater devolution would improve infrastructure in the region, compared with the national average of 47%.⁹
- Productivity in the North East is in the 41st percentile for the UK, meaning it is less productive than 59% of NUTS3ⁱ areas in the UK.¹⁰
- The maximum working-age population gain by improving infrastructure for a 30 to 45 minute commute zone in the North East is 1.36million.¹¹

Six infrastructure priorities for the region

Improved access to international markets from the North East

If the North East is to capitalise on the benefits of connections with international markets, better links must be established between the region's firms, ports and airports. Transport for the North has recognised Newcastle, which aims to almost double passenger numbers by 2030, as the international gateway airport for the North East.¹² Businesses are also keen to see the airport develop by attracting passengers from a broader catchment area and delivering a wider range of services. Achieving this growth ambition will require improvements to surface access; something 58% of business in the region regard as important, half of which say it is critical.¹³ Newcastle Airport is primarily served by the A696 dual carriageway, which connects to the A1. The A1/A696 junction is becoming congested and those operating in the region are concerned that this will become more challenging as a number of housing developments are delivered in the area. The airport is also linked by the Tyne and Wear Metro to Newcastle and Sunderland, where businesses have identified that the interchange at Newcastle Central Station could be improved, and the Metro rolling stock replaced.

Durham-Tees Valley airport has been proposed by Heathrow as one of its 6 new domestic routes, which could also be a welcome addition to the region's international connections.

¹We have conducted our analysis using NUTS codes, or Nomenclature of Units for Territorial Statistics, a geocode standard created by the EU, given its extensive use in the field of regional growth research. NUTS3 comprise 174 smaller UK regions, which have a maximum population of 800 thousand.

Inter-regional transport plans and links across the Northern Powerhouse

Businesses are keen to understand how a regional, or pan-northern, transport model could develop a better understanding of where best to invest in order to gain maximum efficiency and productivity benefits for the whole area. Transport for the North is making significant progress in developing a strategic, whole-economy view for the region, and the opportunity that will come from being the first sub-national transport body could be significant.

Trans-Pennine connectivity lacks capacity and resilience both in road and rail. The work being undertaken on Northern Trans-Pennine routes in the development of the second Road Investment Strategy is welcome. Businesses in the region are keen to see the dualling and upgrades to the A66 and A69, with concerns about their safety and resilience. This work would substantially improve Trans-Pennine connectivity, cutting journey times between the North East and the North West and providing a real alternative to over reliance on the M62.

Furthermore, 92% of businesses in the North East see the delivery of Northern Powerhouse Rail as important for the region, enhancing connectivity in the North from coast to coast.¹⁴ Upgrades to the East Coast Mainline will also be needed to accommodate additional services and high speed trains, and there must be a better understanding of how to maximise the wider benefits of HS2 for the North East.

"The continuing growth of the region as a major UK export hub is dependent on efficient and effective connectivity, enabling the fast and efficient movement of goods to and from markets."

Maximising the North East's freight capabilities

The North East must make best use of its two major ports as an opportunity for growth, and provide a regional hub for cargo. The continuing growth of the region as a major UK export hub is dependent on efficient and effective connectivity, enabling the fast and efficient movement of goods to and from markets.

Maintaining good access to port facilities is a major attraction for large manufacturing companies in the region, and further improvements are needed in surface access. The A66 is an important artery for Teesport, as is the A69 for the Port of Tyne in transporting goods to and from the West, and both would benefit from expanded capacity. Whilst both ports have rail terminals, further improvement in rail infrastructure and more frequent services to and from the ports, particularly on the East Coast mainline, would enable further growth, in addition to easing congestion on the roads.

With Scotland also a key market for North East businesses, improved connections to the border and beyond will be important, both in order to continue to transport goods from the North East, and allow North East ports to better attract Scottish business.

Increasing capacity and improving resilience on the region's road network

Historic underinvestment in highways has held back regional growth, and whilst progress is being made, businesses are clear that delivery is needed. The main routes connecting the region are the A1 and the A19, with particular congestion on single carriageway

sections of the A1, A69 and A66, with the A1 Western Bypass one of the most congested routes in the UK. The A19 is the main business artery for the region, linking Teesside, East Durham, Wearside and Tyneside. Business priorities therefore include dualling, upgrading and junction improvements of the A1, and junction improvements on the A19. Some firms also express frustration about the difficulties they face crossing the River Tyne, and whilst work to improve access to the Tyne Tunnel is welcome, it is important that this does not just move bottlenecks, as has previously been the case, according to some businesses.

"...the on-going roll-out of infrastructure that enables innovation is needed, ensuring that those firms who are looking to grow and innovate are not held back by the digital divide."

Digital connectivity that encourages innovation and growth

Further continued broadband and mobile roll out is required in order to bring greater productivity to the North East. According to Ofcom data, 91% of premises are able to receive superfast broadband speeds, yet more than a third of those operating in the region report not having a broadband connection that meets their needs. The majority (92%) of businesses in the North East see improvements in digital infrastructure as important to boosting business growth in the region, with 42% viewing this as critical.¹⁵

The North East is showing the fastest growth in productivity in England, and has the second highest turnover attributable to new, improved and novel products of the English regions.^{16 17} If this growth is to continue, the on-going roll-out of infrastructure that enables innovation is needed, ensuring that those firms who are looking to grow and innovate are not held back by the digital divide.

Simplified and updated public transport networks in line with labour market needs

With a large amount of the North East's public transport routes reliant on the Tyne and Wear Metro, additional routes and upgrades to rolling stock are needed, with businesses keen to see plans to extend routes onto disused and underused tracks delivered. Businesses in the region particularly recognise the need for better transport infrastructure outside of the city centres, with a feeling that many of the transport hubs in the region are based on historical and not current need.

The Metro network is seen as too focused on the centres of Newcastle and Sunderland and therefore not meeting the needs of commuters working in other business hubs in the region. Tackling congestion on the region's roads and reducing journey times would allow further growth in bus use in the region, better connecting labour with the employment market. Furthermore, improved ticketing, Wi-Fi and enhanced networks have the potential to push more commuters towards bus use in the region. Businesses want to see a 'multimodal' transport offering for the North East, with simplified changes between rail, Metro and bus services making journeys easier and public transport use more appealing.

North West

With the North West looking to reap the benefits of devolution at the heart of the northern powerhouse, businesses are looking to see historic underinvestment in the region addressed. By improving connections into and between the cities of the north, and in turn to global markets, the North West can maximise its potential for growth.

Regional profile

- 60% of businesses in the North West report being dissatisfied with infrastructure in the region, compared with the national average of 46%. Less than a fifth (19%) say UK infrastructure has improved over the last five years, and only 23% believe it will improve in the next five.¹⁸
- 76% of businesses in the North West believe that greater devolution would improve infrastructure in the region, compared with the national average of 47%.¹⁹
- Productivity in the North West is in the 35th percentile for the UK, meaning it is less productive than 65% of NUTS3ⁱⁱ areas in the UK.²⁰
- The maximum working-age population gain by improving infrastructure for a 30 to 45 minute commute zone in the North West is 6.32million.²¹

Six infrastructure priorities for the region

A governance structure that enables investment

A step change in infrastructure investment in the region is required, building capacity in the transport network overall and addressing historic underinvestment. Transport for the North is making significant progress in developing a strategic, whole-economy view for the region, and the opportunity that will come from being the first sub-national Transport Body could be significant. Governance structures must understand and acknowledge the full value of North West infrastructure investment. In turn, clarity is needed on future funding arrangements in order to meet the ambitious but necessary plans already in development for the region.

Harnessing the potential of existing and emerging technologies

If the North West is to benefit from emerging technologies and modernise working practices, improved broadband and mobile infrastructure will be required. According to Ofcom data, 94% of premises are able to receive superfast broadband speeds, yet 34% of businesses in the region report not having a digital fixed-line connection that meets their needs.²² All businesses identify the need for improved connectivity 'on the go', with the North West in the 47th percentile for quality of mobile connectivity in the UK, meaning it has worse coverage than 53% of the country.²³ High quality and reliable connections are needed in order to allow employers to adopt the flexible working practices that firms are increasingly looking towards.

^{II} We have conducted our analysis using NUTS codes, or Nomenclature of Units for Territorial Statistics, a geocode standard created by the EU, given its extensive use in the field of regional growth research. NUTS3 comprise 174 smaller UK regions, which have a maximum population of 800 thousand.

Strengthening East-West links across modes

Connectivity across the North is needed to share growth throughout its regions. Currently just one percent of workers living in Leeds and Manchester commute in either direction each morning.²⁴ Northern Powerhouse Rail is therefore a priority for 87% of businesses in the North West, in order to bring much needed inter-regional connections.²⁵ The wider benefits of HS2 must also be understood and maximised creating capacity for the rest of the network across the region. Upgrades and electrification of both the Calder Valley line and Transpennine route would also improve connections between the towns and cities of the North West and Yorkshire.

Congestion and capacity on roads must be tackled, and more capacity is needed to enable growth, particularly on the M60/M62, M56/M60 and M6 corridors, as well as work on the A66 and A69 in RIS2. Firms are clear though that in the long term, big ticket investment will be needed to match the potential of returns for the Northern Powerhouse. Further viability and planning work for the Trans-Pennine tunnel is therefore welcome as the Government and Highways England turns its attention to RIS2.

Better connecting ports and airports to the wider network

The transformational growth targets set out by the Northern Powerhouse Independent Economic Review will not be realised without quick and easy access to the world's most important markets. With the propensity to fly differing greatly across the Northern Powerhouse regions in correlation with journey times to airports, businesses want to see infrastructure that links the region's international gateways into the wider network.²⁶

With 26 million passengers a year, including 60% of business travel from the North, Manchester Airport is seen as a particular asset for the region and will play a pivotal role in the Northern Powerhouse.²⁷ It is crucial, therefore that improvements to the surrounding road and rail network are prioritised to maximise the airport's full potential and to spread the benefits of its growth as widely as possible across the north.

Ports and logistics already make a significant contribution to the region's economy but there is still untapped potential through insufficient connectivity and capacity with fluid surface access needed to maximise the potential of ports in the region. Liverpool is the UK's largest transatlantic port, and expansion through the Liverpool 2 investment will expand the port's potential as an international trading gateway alongside Superport, the global multimodal freight and logistics hub. Congestion on the M62 and M60 must be resolved, as too should 'last mile' connections to the region's ports. As growth continues further rail freight options should also be considered, as well as increased connections by water in order to reduce strain on the North West's roads.

"It is important that any housing offer for the North West connects new and expanded residential areas with key economic hubs, providing firms in the area with the larger pooled workforce that will boost the region's productivity."

Supporting growth and investment with housing linked to infrastructure

With demand for housing in the region higher than ever, and further anticipated population and economic growth, there appears to be agreement that a joined up housing and infrastructure strategy must be delivered through comprehensive place-shaping and collaborative working. It is important that any housing offer for the North West connects new and expanded residential areas with key economic hubs, providing firms in the area with the larger pooled workforce that will boost the region's productivity. The North West is seeing growth in both those looking to live within economic centres and those seeking to commute in. A twin approach is therefore needed – maintaining infrastructure to match growth in towns and cities, and developing infrastructure in the wider region. There will be an increased expectation on planners and developers that residents are fully linked into the transport network, no matter where in the region they live and work.

"If the North West, and by extension the Northern Powerhouse area, is to reach its maximum economic potential, the continued growth of its existing economic hubs, particularly Liverpool and Manchester, will be crucial."

Improving connections to key economic hubs of the North West

Businesses in the North West identify issues with the short journeys going to and from key economic areas in the region. If the North West, and by extension the Northern Powerhouse area, is to reach its maximum economic potential, the continued growth of its existing economic hubs, particularly Liverpool and Manchester, will be crucial. Reducing journey times by 50% into Liverpool and Manchester would see an increase in the potential size of the talent pool for local businesses of 6.2 million and 4.4 million people respectively, leading to an increase of productivity of 14% and 10%.²⁸

Transport infrastructure within the North West is lacking in overall capacity and resilience. Currently, complex commuting patterns push many commuters in the region toward car use. Better integration of public transport services, alongside projects like the Great North Rail Project and development of the Ordsall Chord, is needed in order to provide the seamless journeys that will encourage more widespread daily public transport use. Alongside this, improvements to key roads in the region will also be needed, with projects like the Manchester North-West Quadrant as part of RIS2, which will seek to tackle congestion on the busiest stretches of the M60 close to Manchester city centre, removing barriers to economic growth in the region.

Better integrated, designed and expanded bus transport routes also have the potential to alleviate congestion and better connect people with jobs in urban centres. Where this is not economically sustainable, measures to encourage car use for part of rather than whole journeys must be utilised, such as increased station car parking and expanded park and ride facilities.

Yorkshire and the Humber

Businesses in Yorkshire and the Humber have seen improvements in infrastructure over the last five years, and are broadly positive that devolution will enable further progress. To maintain this confidence, the region needs integrated and strategic infrastructure planning and delivery, bringing improved connectivity across Yorkshire and the Humber.

Regional profile

- 55% of businesses in Yorkshire and the Humber report being dissatisfied with infrastructure in the region, compared with the national average of 46%. Over half (58%) say UK infrastructure has improved over the last five years, and 52% believe it will improve in the next five.²⁹
- 73% of businesses in Yorkshire and the Humber believe that greater devolution would improve infrastructure in the region, compared with the national average of 47%.³⁰
- Productivity in Yorkshire and the Humber is in the 37th percentile for the UK, meaning it is less productive than 63% of NUTS3ⁱⁱⁱ areas in the UK.³¹
- The maximum working-age population gain by improving infrastructure for a 30 to 45 minute commute zone in Yorkshire and the Humber is 4.11million.³²

Six infrastructure priorities for the region

An aviation strategy that maximises the potential of the region's airports

Businesses in the region make the case for a coherent aviation strategy that makes clear the opportunities for regional airports. The view of businesses in Yorkshire and the Humber is that, whilst regional airports are always going to compete, there is clear value in working alongside each other for the benefit of their region and the wider economy. A key part of this improvement will come in better linking the region's airports to the key economic hubs of the region; it is suggested that currently, Yorkshire and the Humber's airports are isolated and removed from the more economically active parts of the region, which limits their growth potential.

Businesses see opportunities for growth at Leeds Bradford Airport, with surface access identified as a challenge to overcome within the airport's masterplan.³³ Leeds Bradford is primarily accessed via single-carriageway roads, with particular congestion on the A65 and A658 and parts of the M62 and M1, with road congestion exacerbated by the absence of direct rail services to the airport. The delivery of a rail link to Leeds, and connectivity across Yorkshire, is therefore a key priority.

We have conducted our analysis using NUTS codes, or Nomenclature of Units for Territorial Statistics, a geocode standard created by the EU, given its extensive use in the field of regional growth research. NUTS3 comprise 174 smaller UK regions, which have a maximum population of 800 thousand.

Making the region's infrastructure more resilient and reducing congestion

Firms in Yorkshire and the Humber recognise that if the region is to fully meet its potential its infrastructure must become more resilient, both in providing the capacity needed on a day-to-day basis and in managing the challenges of the rarer incidents that test the region's capabilities.

Growth in both the region's economy and its population has occurred, yet infrastructure investment and delivery has not matched this growth. Congestion into the main economic areas in the region is a particular issue, and firms raise concerns about the costs of this both for business and the attractiveness and accessibility of the region's labour market. The sporadic nature of the region's public transport network as well as a lack of capacity on public transport at peak times creates an over reliance on car use, which in turn creates congestion on the roads making bus journeys less reliable.

Poor network resilience is most evident in cases of extreme weather. Businesses in the region recognise the need to build up the defences of infrastructure with 92% of firms viewing improvements in flood defences as important to boosting business growth in the region, with 47% identifying this as critical.³⁴ Firms highlight the need for better collaboration between local authorities, the Environment Agency and Network Rail to try to limit disruption.

Maximising the 'ripple effect' of major projects such as HS2

Major infrastructure projects must have the widest possible impact to benefit the Yorkshire and the Humber region. Whilst businesses in the region are supportive of HS2, with 84% seeing its delivery as important, they are keen to understand how its maximum impact can be ensured.³⁵

An example of an early success story is the South Bank area of Leeds, which is the proposed location for the new station for HS2. It was noted that whilst the station is not yet built, redevelopment of the area is already taking place, and is now a key growth area for the city. The potential for HS2 to free up capacity on the existing rail network should also be considered and maximised to improve connections between the towns and cities of Yorkshire and the other Northern regions.

Better interaction between economic, social and transport infrastructure

Businesses in Yorkshire and the Humber view devolution as an opportunity for genuinely integrated and joined up planning. A broader strategy for infrastructure is needed with a better understanding of the link between infrastructure and economic regeneration. A long-term strategic plan must focus on both changing demographics and the evolving ways in which people work, live and travel.

The potential of newly developing economic areas must be understood and the necessary connections to these areas made in order to maximise their potential. One such example of this is the Leeds City Region M62 Corridor Enterprise Zone which provides the connectivity needed for access to both a widespread workforce and supply chain.

"The need for increased speed and capacity on both the Midland and East Coast Mainlines were highlighted as priorities to improve connections with the Midlands, North East, Scotland and London."

Improving inter and intra-regional connectivity between key cities

Businesses in Yorkshire and the Humber see improved connectivity within and beyond the region as priorities. Faster rail routes between key cities were highlighted as a priority, with the productivity benefits for Leeds of more than 10% if travel times to Manchester and Sheffield were lowered to 30 minutes. To this end, an overwhelming majority (95%) of businesses in the region highlight Northern Powerhouse Rail as important.³⁶ Upgrades and electrification of both the Calder Valley line and Transpennine route would also improve connections between the towns and cities of the North West and Yorkshire. The need for increased speed and capacity on both the Midland and East Coast Mainlines were highlighted as priorities to improve connections with the Midlands, North East, Scotland and London. On the roads, whilst the improvements being made to the M62 and M1 are welcome, further developments are needed, given that the reliance on this route in connecting Yorkshire to both the North West and the national road network will only grow. Key economic routes will also require strengthening in connecting the coasts and ports of East and West, so pan-northern collaboration on this is welcome.

Within the region, following the decision not to take forward the Hull-Selby rail electrification project, some businesses think further improvements on the line will need to be considered. Rail links into Sheffield and Leeds are also key for commuters.³⁷ Reducing journey times by 50% into Sheffield would see an increase in the potential size of the talent pool for local businesses of 3.8 million people leading to an increase in productivity of 9%. Likewise, Leeds would see an uplift of 3.3 million people and a 3.3% growth in productivity.³⁸

"With businesses in the region keen to embrace innovative and flexible working practices, better digital infrastructure and connections are needed to make this aspiration a reality."

Digital connectivity across the region – at home, at work and on the move

The need for digital connectivity on the move is important to businesses operating in Yorkshire and the Humber.³⁹ Businesses are concerned about the reliability of download speeds and, in particular, whether the region is able to fully take advantage of future and existing technology. With businesses in the region keen to embrace innovative and flexible working practices, better digital infrastructure and connections are needed to make this aspiration a reality. Currently, almost a third of businesses operating in the region say their broadband does not currently meet their needs, and identify that if they are to keep pace with innovation, this will have to change.⁴⁰

Firms are also keen to see digital and transport infrastructure linked up to enable better working on the go. They report that this is not currently always the case, with the example being given that 4G coverage is available for less than half the journey between Sheffield and Leeds. Improving the efficiency and reducing the cost of Wi-Fi on trains is therefore seen as a possible productivity benefit to plug this gap. Of the businesses operating in the region, 35% regard the ability to work on the go as critical, with a further 59% seeing it as important to their future operations.⁴¹

West Midlands

Businesses want to see a long term plan for the West Midlands which capitalises on its existing strengths. With an overreliance on roads in the region causing an everincreasing strain, a more joined up public transport network is needed to improve connectivity, capacity and resilience.

Regional profile

- 64% of businesses in the West Midlands report being dissatisfied with infrastructure in the region, compared with the national average of 46%. Half (51%) say UK infrastructure has improved over the last five years, but only 18% believe it will improve in the next five.⁴²
- 30% of businesses in the West Midlands believe that greater devolution would improve infrastructure in the region, compared with the national average of 47%.⁴³
- Productivity in the West Midlands is in the 32nd percentile for the UK, meaning it is less productive than 68% of NUTS3^{iv} areas in the UK.⁴⁴
- The maximum working-age population gain by improving infrastructure for a 30 to 45 minute commute zone in the West Midlands is 5.53million.⁴⁵

Six infrastructure priorities for the region

A long term strategic view that capitalises on Midlands Engine devolution

Businesses make the case for creating a more effective governance model, giving local government, combined authorities and LEPs the ability to deliver a strategic, long-term and locally-informed plan. Infrastructure must continue to play a key part in the Midlands Engine Strategy if the region is to experience significant and sustained growth.

There is a need to ensure housing and business developments have the utilities and infrastructure needed to add the most value to the region. Better coordination between infrastructure and housing planning is needed to support more effective, strategic decision-making. Some businesses in the West Midlands note that planning in the region seems sporadic, with improvements needed in communication between decision-makers, planners and infrastructure providers. Connecting planning on infrastructure with housing and utilities will reap the full benefits of further developments, and prepare the region for growth.

"Given the big manufacturing presence in the region, the need for roads within and between key economic areas for business and goods use must also be recognised."

We have conducted our analysis using NUTS codes, or Nomenclature of Units for Territorial Statistics, a geocode standard created by the EU, given its extensive use in the field of regional growth research. NUTS3 comprise 174 smaller UK regions, which have a maximum population of 800 thousand.

Recognising the primary importance of the road network to the West Midlands

Businesses in the West Midlands are heavily reliant on the region's roads, but capacity on the network is a significant barrier to productivity. All businesses in the region identify the need to tackle congestion, increase capacity and improve journey times on the M6 and M42, with 58% and 43% respectively viewing these as critical.⁴⁶ Businesses would also welcome further measures to relieve pinch points on the M5 and M40, and the broadening of the Smart Motorway scheme.

Given the big manufacturing presence in the region, the need for roads within and between key economic areas for business and goods use must also be recognised, not least with the rise of light goods vehicles using urban roads due to the surge in e-commerce. Whilst the M6 toll is often cited as an alternative route for business to use to alleviate congestion, many firms think that it is still yet to fulfill this role, and that further work must be done to understand how the value of this route can be fully utilised as part of the wider strategic road network.

Encouraging public transport through more seamless connections

A whole-network approach to transport is needed to encourage more journeys on public transport, with better links between road, rail and bus. Businesses recognise that there is an overreliance on roads in the region, and are keen to see a focus on improving the capacity and service on public transport.

Businesses acknowledge rail connections in the region have improved substantially in recent times, and particularly on routes into Birmingham, but there remains major gaps in the system. It is noted that train capacity is still poor on many commuter journeys and is restricted due to station infrastructure, with short platforms limiting the number of carriages that can be used. Businesses therefore want to see an increase in the number of carriages and frequency of trains on the busiest routes in the region. Reducing journey times by 50% to Birmingham alone would increase productivity by 5%, by increasing the number of people who could be attracted to work in the city by 2.3million.⁴⁷ The Midlands Rail Hub must be delivered to ensure better rail services and connections across the West and East Midlands. The capabilities for expansion of the Midlands Metro, important to 83% of businesses in the region both for its connections within Birmingham and further afield to Wolverhampton and West Bromwich, should also be further explored.⁴⁸ Additional Parkway-type stations on the edge of major urban areas may also have benefits, but must have sufficient parking and onward public transport options to create a convenient alternative to car travel into economic hubs.

Improving mobile connectivity outside of the major centres

The roll out of improved mobile connections must be escalated to enable both business growth away from city centres, and to increase opportunities for flexible and home working. Mobile connectivity in the West Midlands is in the 43rd percentile for the UK, meaning it has worse coverage than 57% of the UK, with performance within the region dropping as low as the 8th percentile.⁴⁹ This is a matter of importance to all those operating in the region, with 44% viewing greater reliability and 65% wider geographical coverage as critical.⁵⁰

A joined-up approach is therefore needed to support mobile deployment, both in bringing some areas up to current standards and in looking to a vision for the next generation of technologies. More could also be done to ensure that the data held by service providers reflects the reality of coverage for users.

"In order for the potential of new working practices to be realised, infrastructure and connectivity must keep pace with technological advances."

More widespread utilisation of and access to digital infrastructure in the region

While 89% of premises have access to superfast broadband, 32% of businesses in the region report dissatisfaction with their fixed line connections.⁵¹

The increasing facility for home working is changing commuter patterns and businesses in the region appreciate that encouraging this further should be part of the business contribution to freeing up capacity on local transport infrastructure. In order for the potential of new working practices to be realised, infrastructure and connectivity must keep pace with technological advances.

Improving cross-country rail connections and maximise the benefits of HS2

HS2 will be significant for the West Midlands in connecting the region to the rest of the country, and so unsurprisingly 83% of businesses in the region agree that it is important.⁵² Its impact on the region must be maximised by optimising other rail links to and from the area. Firms are encouraged by the new funding deal from Government to help the Midland Connect partnership harness the economic potential that HS2 can release in the region. They now look for wider evidence of collaboration to deliver the Midlands HS2 Growth Strategy with the potential to add £14bn to the economy as well as creating and supporting 100,000 jobs.⁵³ The Midland Metro's city centre extension to Birmingham New Street is a welcome step in ensuring the region is HS2-ready, in advance of the delivery of two new HS2 stations.

Owing to its geographical location, the West Midlands plays a key role in rail freight in the UK, but capacity is lacking in the region and speeds are low, making further growth difficult. The economic contribution of rail freight, and its potential both for future economic growth and lessening the burden placed on the strategic road network, must be better understood by policy makers.

East Midlands

Whilst businesses in the East Midlands are relatively satisfied with infrastructure in the region, they are keen to see improved links across the Midlands and beyond. To maximise its potential for regional growth, HS2 must be a starting point in providing faster connections between the cities of the East Midlands and the rest of the UK.

Regional profile

- 34% of businesses in the East Midlands report being dissatisfied with infrastructure in the region, compared with the national average of 46%. Half (49%) say UK infrastructure has improved over the last five years, while a third (33%) believe it will improve in the next five.⁵⁴
- 27% of businesses in the East Midlands believe that greater devolution would improve infrastructure in the region, compared with the national average of 47%.⁵⁵
- Productivity in the East Midlands is in the 46th percentile for the UK, meaning it is less productive than 54% of NUTS3^v areas in the UK.⁵⁶
- The maximum working-age population gain by improving infrastructure for a 30 to 45 minute commute zone in the East Midlands is 4.60million.⁵⁷

Six infrastructure priorities for the region

Improved rail connectivity across the Midlands

Businesses in the East Midlands prioritise improved rail connections between cities in the region and across the Midlands as a whole. There is a particular need to improve connections in the East Midlands between Nottingham, Derby, Leicester and Coventry, and between each of these cities and the West Midlands, principally Birmingham.

Reducing journey times by 50% into Leicester and Nottingham would see an increase in the potential size of the talent pool for local businesses of 3.6 million and 2.4 million people respectively, leading to an increase of productivity of 8% and 6%.⁵⁸

The creation of the East Midlands Hub railway station at Toton on the eastern leg of HS2 will provide improved connectivity to the rest of the Midlands for Nottingham, Derby and the wider region, but this must also act as a catalyst for wider connectivity across the two regions and beyond. Businesses in the East Midlands are supportive of HS2 with 87% seeing it as important for the UK's future economic growth, but the towns and cities of the region must be fully connected in to the network to maximise its economic impact.⁵⁹

Better connections from the East Midlands to the rest of the UK

The Toton HS2 station must be a first step towards improving connectivity between the East Midlands and the rest of the UK. Whilst rail services to London and the South are relatively good, connections with the North, particularly Leeds and Sheffield, are poor.

[•] We have conducted our analysis using NUTS codes, or Nomenclature of Units for Territorial Statistics, a geocode standard created by the EU, given its extensive use in the field of regional growth research. NUTS3 comprise 174 smaller UK regions, which have a maximum population of 800 thousand.

As the Midlands Engine and Northern Powerhouse go for growth in tandem, there is a need to improve connections between the two to share the benefits of productivity across the country. For example, spare capacity on the Eastern Leg of HS2 should be used to improve connections north. Furthermore, businesses in the region cite the upgrade and electrification of the Midland Mainline to increase capacity as a priority, with the electrification of the line important to 94% of businesses in the region.⁶⁰

On the roads, businesses in the region recognise the strategic importance of capacity on the M1 in continuing to provide key connections from Derby, Nottingham, Coventry and Leicester both north and south.

Enhanced international connections for the whole region

Improved surface access to airports is important to 80% of businesses in the region, a third of which view it as critical.⁶¹ Whilst East Midlands Airport has good connections with the M1, A42, A50 and A453, putting 11.6 million people within a 90 minute drive of the airport, it has the lowest share of passengers using public transport of the major UK airports.⁶²

Businesses in the region are keen to see the airport better linked into the wider transport network, taking full advantage of both the East Midlands Parkway Station and the East Midlands Hub at Toton, as well as increasing express rail links with Derby and Nottingham. Firms identify an opportunity in the upcoming East Midlands rail franchise to increase frequency and improve timetabling for East Midlands Parkway.

"Businesses in the region want to see improved connections with UK ports, east and west, and increased resilience on existing routes."

Building on the region's freight capabilities

Freight is both a key part of the East Midland's economy and user of the region's infrastructure, with the highest concentration of freight activity around Northamptonshire, Leicestershire and the A50 corridor. The region is also home to a number of rail freight centres such as Daventry, as well as East Midlands Airport, the second busiest UK airport for freight traffic, behind only Heathrow.

Businesses in the region want to see improved connections with UK ports, east and west, and increased resilience on existing routes. There is particularly heavy congestion on the A14, so progress in alleviating this is welcome, particularly given its strategic importance in connecting the East Midlands and the ports of the East.

Firms in both the logistics sector and wider supply chains also highlight restricted rail freight capacity, which limits the region's growth. The Strategic Rail Freight Interchange (SRFI), near Castle Donington, whilst a welcome opportunity for growth, will also increase the strain on the region's infrastructure, something which must be resolved.

Making the region's infrastructure more resilient

Resilience is an issue of concern to businesses in the East Midlands, with almost half seeing it as critical to the region.⁶³ Flood risk is a major issue for the East Midlands, particularly along the Lincolnshire coast, but also in parts of the area's most dynamic urban

economies with a significant amount of the land area of the East Midlands falling within identified flood risk zones.

Businesses also want to see resilience on the region's roads improved with the delivery of the Lincoln Eastern Bypass, the Grantham Southern Relief Road, improvements to the A38 Derby junctions and the A5 all particular priorities.

"There is an awareness from businesses in the region that without fast reliable broadband, it risks missing out on future technological developments in infrastructure, and business and home use."

Improved digital and mobile connectivity

More than half of businesses in the East Midlands see increased speed, greater reliability and improved on the go coverage in broadband infrastructure as critical to the future operations of their business.⁶⁴ A similar picture emerges for mobile infrastructure with the region in the 30th percentile for the UK, meaning it has worse connectivity than 70% of the UK. The quality of connections varies considerably throughout the region ranging from the 19th to the 100th percentile.⁶⁵

There is an awareness from businesses in the region that without fast reliable broadband, it risks missing out on future technological developments in infrastructure, and business and home use. A new roadmap for the roll out of broadband must be established, prioritising both business broadband access and connectivity, and consumer access. Requirements for better internet access will only grow with the adoption of new technologies, and no region should be left behind. Commitments to support the market to roll out faster and more reliable broadband, such as the £400 million Digital Infrastructure Investment Fund, must help to support business growth and productivity improvements for the East Midlands and across the UK.

South West

The South West needs a governance model with stronger ties and collaboration across the whole of the region to improve its infrastructure. Building on existing strengths, the region's infrastructure must be linked with a broader strategy for growth, prioritising better connections for both the urban and rural economic areas of the South West.

Regional profile

- 63% of businesses in the South West report being dissatisfied with infrastructure in the region, compared with the national average of 46%. A quarter say UK infrastructure has improved over the last five years and only 15% believe it will improve in the next five.⁶⁶
- 50% of businesses in the South West believe that greater devolution would improve infrastructure in the region, compared with the national average of 47%.⁶⁷
- Productivity in the South West is in the 52nd percentile for the UK, meaning it is more productive than 51% of NUTS3^{vi} areas in the UK.⁶⁸
- The maximum working-age population gain by improving infrastructure for a 30 to 45 minute commute zone in the South West is 4.61million.⁶⁹

Six infrastructure priorities for the region

Improved surface access to airports and ports in the region

Surface access to airports is a real issue in the South West, with no airport in the region served by rail nor dual-carriageway; an issue of concern to 65% of businesses in the region.⁷⁰ Improved transport links to Bristol Airport would make its route network more accessible to passengers from across the South West. The completion of the South Bristol Link Road provides enhanced access to the Airport from the north, east and west, but with passenger numbers expected to grow to 10 million per annum, further access improvements will be needed.⁷¹ Infrastructure must also keep pace with growth at Exeter with its passenger numbers growing year on year.⁷² If the region is to improve its international connections, and benefit from a competitive local aviation market then this situation must be addressed.

Ports in the South West also make a significant contribution to jobs and the local economy, but are highly reliant on the trunk road network with Bournemouth, Poole, Plymouth, Bristol and Cornwall all dependent on single and dual carriageways for access. Rail links should also be improved to help sustain and grow freight's potential contribution to the region's economy.

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"With a strong engineering, aerospace and defence presence in the region, connections to cities where these sectors are also strong are vital for future growth."

More substantial and varied domestic and international air connections

The South West has a strong international business presence that would benefit from better connections with other domestic and international economic hubs. With a strong engineering, aerospace and defence presence in the region, connections to cities where these sectors are also strong are vital for future growth. Over three-quarters of businesses in the region want to see greater domestic flight links from airports in the South West, with a desire to increase long haul connectivity from the region both through direct flights and flights to hub airports with onward connections.⁷³

In addition to growth at Bristol, Exeter Airport and Cornwall Airport Newquay are seen as opportunities for growth in the region's domestic and international connections. Exeter is looking to meet business demand for further connections to hub airports in coming years, whilst Cornwall Airport Newquay is the UK's fastest growing regional airport and increased transatlantic connections through Gatwick and Dublin will provide further opportunities for firms in the South West.

"The potential is highlighted for more digitallybased entrepreneurial activity from the rural areas, contributing to a more even distribution of economic growth across the region."

Infrastructure that enables and encourages innovation growth

Improved connectivity would assist the development of the digital innovation strengths of the South West, as well as facilitating communication and secure, reliable data and information exchange across all sectors thereby raising productivity in the region. Firms are keen to see the Government build on the conclusions of the regional science and innovation audits, highlighting the need for infrastructure to facilitate the further growth of advanced engineering and digital innovation, and support smart cities, digital living and new digital innovation centres.

The ability to work at home and on the go is also prioritised. The potential is highlighted for more digitally-based entrepreneurial activity from the rural areas, contributing to a more even distribution of economic growth across the region. Improving Wi-Fi access on trains could also deliver productivity gains and businesses want to see the ability to work on the go improved.

Capitalising on existing rail strengths

Businesses in the region want to see increases in access, capacity and frequency of the most popular rail services in the region. The electrification of the Great Western rail to

increase capacity between London and the South West is important to 96% of businesses in the region, with the deferment of work a cause for concern.⁷⁴ The lack of upgrades and investment beyond Bristol is also a frustration with lengthy journey times between the South West coast and London. The region also suffers from poor connectivity to the mainline beyond London, with other priority connections for businesses in the region including the West Midlands and the North West. Rail travel to other regions would be significantly improved in the short term by increasing capacity on existing trains and lines.

More effective governance, collaboration and strategic planning

Businesses in the region recognise that governance and regional scale is critical for the effective delivery of infrastructure. Firms identify that initiatives at a local level through LEPs and local councils are often too small scale and lack the capacity to be effective for issues such as infrastructure. Collaboration with appropriate resources, and pooling of resources across the councils for significant investments, would better align sectoral policy with existing regional strengths and capabilities. Some local authorities are perceived to be "open for business", but a lack of coordination with others means they are not as effective as they could be.

Businesses in the South West challenge local authorities and LEPs to work collectively and strategically on both small and big ticket investments, speaking with one voice for the region and especially on issues impacting on productivity. Some welcome steps are being made with the West of England Combined Authority electing a Mayor. The Heart of the South West, Cornwall and Isles of Scilly and Dorset LEPs are also working together on a collaborative agenda for growth under the 'Back the South West' campaign.

North-South inter and intra-region road connectivity and resilience

Businesses in the South West prioritise interconnectivity between the key towns and cities of the region, in order to maximise the whole region's potential for growth. Plans to create an Expressway on the A303 are welcome to improve important connections across the south, but there are a large number of other bottlenecks in the South West, particularly during peak season, which hamper the ability to travel across the region, and limit growth potential. Reducing journey times by 50% into Bristol alone would see an increase in the potential size of the talent pool for local businesses of 1.7 million leading to an increase in productivity of 3%.⁷⁵

There is a general feeling that roads lack resilience in the region, with single key routes being relied upon for key arteries of the region. Firms express that there are often few viable alternatives to roads when problems occur in the South West, particularly a problem on the A30. North-South road connectivity is also particularly weak, with issues around the M5, M4-M27 and A303, which businesses are keen to see addressed.

Firms also emphasise the importance of identifying economic hubs of activity beyond the major cities. Consideration of the most efficient way to connect these commuters to the cities and hubs is required, with driving currently the only option for many. The need for train hubs outside of city centres in the region is identified, but with the caveat that they must have adequate parking and road access to meet both existing need and future growth, with these both identified as significant challenges with existing parkway stations in the region.

South East and Thames Valley

The South East and Thames Valley can build on its position of strength through more aligned thinking to bring forward infrastructure investment. The region's infrastructure must support and keep pace with economic and population growth, with planning developed with a more holistic, crossregional approach.

Regional profile

- 60% of businesses in the South East report being dissatisfied with infrastructure in the region, compared with the national average of 46%. A third (33%) say UK infrastructure has improved over the last five years and 25% believe it will improve in the next five.⁷⁶
- A fifth (19%) of businesses in the South East believe that greater devolution would improve infrastructure in the region, compared with the national average of 47%.⁷⁷
- Productivity in the South East is in the 81st percentile for the UK, meaning it is more productive than 80% of NUTS3^{vii} areas in the UK.⁷⁸
- The maximum working-age population gain by improving infrastructure for a 30 to 45 minute commute zone in the South East is 7.98million.⁷⁹

Six infrastructure priorities for the region

Improved inter-regional connectivity to and from the South East

There is a need to better connect the South East and Thames Valley with the rest of the UK to maximise potential for growth. Western rail access is seen as imperative to opening up inward investment within the region, and will particularly benefit Thames Valley, Buckinghamshire and Hampshire. The Government must progress with the delivery of both East-West Rail from Oxford to Cambridge through Bedford and Milton Keynes, and the new Oxford to Cambridge Expressway providing the infrastructure needed to maximise the growth potential of the Cambridge-Milton Keynes-Oxford corridor. Moreover, the region must harness the benefits from HS2 and the improved connectivity to the Midlands and North that it will bring.

Service, capacity and journey times between London and the South East is a particular concern for businesses, and rail users are increasingly dissatisfied with congestion in the region. The entire Growth Corridor from South London to Brighton is dependent on a modern, fast and efficient rail network. As an immediate priority, Network Rail must deliver the Brighton Mainline Upgrade Programme, including a major capacity upgrade to the central Croydon area which would allow an increase of 12 fast trains per hour at peak times. With rail routes that are amongst the most overcrowded in the country, businesses believe that in the long-term new main lines will be required in the region, with calls particularly for a second Brighton Main Line.

VII We have conducted our analysis using NUTS codes, or Nomenclature of Units for Territorial Statistics, a geocode standard created by the EU, given its extensive use in the field of regional growth research. NUTS3 comprise 174 smaller UK regions, which have a maximum population of 800 thousand.

Cross-regional planning and a more holistic view of infrastructure

Business in the South East and Thames Valley make the case for more aligned infrastructure delivery in the region. Whilst bids for devolution have been made by various parts of the region at different times, businesses seek more joined up thinking and clarity from Government about future plans for the region. Positive steps are being taken, with councils across the Greater South East beginning to collaborate strategically, and a number of LEPs working together on a study showing that transport projects could produce a boost of up to £20 billion to the South East economy.⁸⁰ In addition, England's Economic Heartland Strategic Alliance (which spans parts of the South East, East Midlands and the East) is providing leadership on strategic infrastructure issues.

"If the Government is to achieve its aim of creating 'a truly Global Britain' it must create an environment which allows all of the south east's airports to maximise their potential."

Delivering and maximising increased airport capacity to the South East

Ensuring the government sticks to the current construction timescales for the third runway at Heathrow Airport is vital for the South East's attractiveness as a place to invest and do business. The Government must also not lose sight of the importance of all of the UK's airports, and in developing its aviation strategy must encourage a growing and competitive airport market.

Whilst Gatwick's links are good, it is also located on the UK's busiest commuter line and at one of the busiest junctions of the M23, so improved capacity and resilience, including through upgrades to the Brighton Mainline, will be important for the future growth of the airport and the region. If the Government is to achieve its aim of creating 'a truly Global Britain' it must create an environment which allows all of the south east's airports to maximise their potential.

Increased capacity on the South East's roads

A priority for businesses in the region is the need to reduce congestion and improve capacity on the South East and Thames Valley's roads. Tackling congestion, increasing capacity and improving journey times on the M3 and M4 between London and the South is important to 87% and 92% respectively of businesses operating in the region.⁸¹ The development of the M4 smart motorway is vital to anticipate the future needs of road users in the region. Businesses also cite links to the M20, A249 and the southern east west corridor through the A27, as priorities.

With official projections showing that the volume of vehicle traffic is set to increase by 34% on current levels by 2041, the construction of a Lower Thames Crossing is an essential long-term solution to reducing congestion at the existing Dartford Crossing.⁸² A new crossing will boost capacity on the Strategic Road Network, enabling a greater flow of passenger and freight traffic from A to B, thereby unlocking economic growth across the UK. The Lower Thames Crossing will be a critical artery for the UK's trade links with key

international gateways, underlining the need for expediency in the delivery of this important national infrastructure upgrade.

Surface access to ports and Eurotunnel

In order to maximise freight and business potential, linkage and access to ports, particularly Dover, and the Eurotunnel, needs to be improved. This is a key corridor for inward and outward investment but existing infrastructure channels are heavily congested. Freight traffic to Dover has grown by a third in the last four years alone, with 40% growth forecast by 2030.⁸³ Similarly, 25% of trade between the UK and continental Europe passes through Eurotunnel, with growth month on month both before and after the EU referendum.⁸⁴ With this growth set to continue, the region needs the infrastructure that will keep traffic moving. Businesses operating through the region cite the need to provide greater resilience for routes to Dover by improving M2/A2 routes so that traffic can be alternatively routed instead of relying solely on the M20/A20, also reducing congestion approaching Eurotunnel.

The completion of the M20 3,600-space lorry park at Stanford West is also key to improving journey times and capacity to ports. A better understanding is also needed of how technology can further be used to alleviate congestion, such as through the lorry park network to better manage queueing and Traffic Assessment Projects.

"Businesses in the South East and Thames Valley are keen to see the region further exploit innovation and digital capabilities but believe the reliability of download speeds must improve to unlock the growth potential of SMEs in the region who will rely on high level communications if they are to succeed."

Combatting digital and mobile 'not spots'

Whilst 92% of premises have access to superfast broadband, there are still a number of widespread black spots of poor connectivity, with 35% of firms reporting dissatisfaction with their fixed line broadband.⁸⁵ Particular issues were raised from businesses in northern Buckinghamshire, West Berkshire and Mid Hampshire.

Similarly there are significant variations in the quality of mobile connections in the region. Whilst the South East is in the 49th percentile for mobile connectivity, meaning its coverage is broadly average for the UK, there are significant variations in connections across the region, with performance ranging from the 22nd to the 100th percentile.⁸⁶

Businesses in the South East and Thames Valley are keen to see the region further exploit innovation and digital capabilities but believe the reliability of download speeds must improve to unlock the growth potential of SMEs in the region who will rely on high level communications if they are to succeed.

London

Whilst London businesses have seen improvement in the capital's infrastructure in the last five years, challenges remain to meet future growth and demand through improved connectivity and resilience. In particular, if London businesses are to continue to compete in the global marketplace they must have the infrastructure needed to connect the capital to economies at home and abroad.

Regional profile

- A quarter (25%) of businesses in London report being dissatisfied with infrastructure in the region, compared with the national average of 46%. Half (51%) say UK infrastructure has improved over the last five years, and 30% believe it will improve in the next five.⁸⁷
- 54% of businesses in London believe that greater devolution would improve infrastructure in the region, compared with the national average of 47%.⁸⁸
- Productivity in London is in the 97th percentile for the UK, meaning it is more productive than 96% of NUTS3^{viii} areas in the UK.⁸⁹
- The maximum working-age population gain by improving infrastructure for a 30 to 45 minute commute zone in London is 4 million.⁹⁰

Six infrastructure priorities for the region

Infrastructure that connects and brings growth beyond the city centre

More wide ranging economic development must be further promoted through improved connections to, between and within London's outer boroughs. From 2018, London's rail capacity will increase by 10% with Crossrail bringing an extra 1.5 million people within 45 minutes of central London.⁹¹ In turn, Crossrail 2 could bring a further 10% growth in capacity and even wider connections.⁹² Projects such as these must be catalysts for creating economic hubs on the outskirts of the capital, enhancing connections and alleviating some of the strain placed on infrastructure in the city centre. To this end, bus routes must also keep pace with public need and demand, and must focus on connecting those areas of the capital that lack in transport from other modes, casting the widest possible net for growth opportunities.

East London is cited a good example of the benefits of enhanced connectivity and investment. The surge seen in both domestic and global connections from the area has facilitated and encouraged its expansion. Further developments are now required to keep pace with business growth, in particular with further eastern river crossings which, in response to the CBI/CBRE's *London Business Survey 2017*, 84% of firms say are essential for the successful running of London, with firms keen to seen the first of these, the Silvertown Tunnel, delivered at pace to alleviate pressure on existing routes.⁹³

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"Increased links to the capital will be vital if the UK is to become a more outward looking, open trading nation."

Delivering and maximising increased airport capacity for London and the UK

With the government confirming the go-ahead for the third runway at London Heathrow, it is imperative that construction begins by 2020 as planned. With aviation capacity in the south east set to be full as early as 2025, half of London firms see staying on track with construction as important for their business, with four fifths of respondents to the CBI/CBRE's *London Business Survey 2017* viewing expansion as vital for the capital's attractiveness as a place to invest.⁹⁴

The Government must not lose sight of the importance of all of London and the UK's airports, and in developing its aviation strategy must encourage a growing and competitive aviation market. The granting of planning permission for development at London City Airport is welcome, and the Government must continue to encourage its expansion as a welcome competitor in the London aviation market. In addition, Gatwick, Stansted and Luton airports, as the second, third and fourth largest airports in London will play key roles in meeting new and existing demand. Increased links to the capital will be vital if the UK is to become a more outward looking, open trading nation.

Better integration of technology in infrastructure investment

Businesses see technology as central to efforts to develop more resilience on London's transport network, and decision-making on infrastructure must be kept in line with technological developments to future-proof the capital's infrastructure. Innovation has already had a profound impact on London transport in recent years, driven by a combination of technological and behavioural change. Perhaps the biggest contribution innovation and technology can make is in reducing congestion on London's roads, with on-demand private hire and car sharing clubs already leading a shift away from the need for private car ownership in the capital. In addition, the flexibility and seamless nature these schemes offer make users far more likely to see car use as part of a trip involving other modes of transport, rather than a whole journey. As the Mayor looks to reduce emissions in the capital, the city must also see a further roll out of electric vehicle charging points both for business and private use, so investment through both the Go Ultra Low Cities scheme and Transport for London is welcome. In addition, more must be done to capitalise on the benefits of data and data sharing to understand, anticipate and respond to user trends.

Ensuring network improvements are delivered to meet future demand

London businesses believe that too many projects are built to the limit of what is needed, and any upgrades to the network must be made with the longest lasting impacts in mind. Crossrail 2's ability to support the capital's population growth and resultant passenger demand on the underground network makes it an important piece of infrastructure. Businesses recognise the importance of this project for the capital, with most firms (84%) citing the project as 'very important' or 'important' in response to the CBI/CBRE's *London Business Survey 2017*, and almost half of firms (44%) believing it will benefit their business.⁹⁵

The expansion of the Overground and DLR, as well as the opening of the new Elizabeth Line, will also bring wider connections and benefits across the network. Businesses in the capital expect to see the continual upgrade and modernisation of the tube network, with upgraded trains, reduced journey times, and modernised, more reliable signaling to keep pace with rapidly growing demand.

"Capacity on London's roads is at a premium, and if the capital's economy is to continue to grow in the long-term those for whom the use of its roads is essential, such as the logistics sector, must be able to get from A to B in the most efficient way."

Cross network resilience to keep the capital moving

The resilience of infrastructure in London is a concern for its businesses, with 89% regarding it as important.⁹⁶ Businesses make the case that resilience must be thought about in whole network terms, and the Mayor of London must look to find more ways to further shift modal use from private to public transport. Whilst measures to encourage active travel are to be welcomed, as is the unprecedented increase seen in cycling in the city, these have also further reduced space on London's roads. Capacity on London's roads is at a premium, and if the capital's economy is to continue to grow in the long-term those for whom the use of its roads is essential, such as the logistics sector, must be able to get from A to B in the most efficient way.

A balanced approach to the usage of London's road network is needed, better understanding and reflecting the needs of business. Where alternatives exist they must be more widely explored, for example businesses are increasingly looking to the river as an efficient means to transport goods, something to be encouraged and further facilitated, alongside improving links to rail freight. Furthermore, with bus use in the capital falling after a prolonged and significant period of growth, bus priority measures must be used where necessary in order to help improve journey times, making bus use a more efficient and attractive transport mode.

Better collaboration between policy makers, infrastructure providers and planning authorities

Businesses in the capital report frustrations that the interpretation of planning legislation differs by authority. Planning authorities must be adequately resourced to be able to make prompt and strategic planning decisions, with better integration to ensure joined up strategic thinking. Businesses also identify a need for improved collaboration between infrastructure providers to deliver better digital connectivity. With this in mind, some firms raise the opportunity for highways authorities to classify works associated with the deployment of broadband as 'standard' rather than 'major' to reduce delays, as well as ensuring that where possible different works needed in the same area can be carried out alongside one another to limit costs and disruption.

East of England

Businesses in the East of England target improved and more resilient connections both within the region and beyond, to bring growth to the East. Firms seek an approach which works for the specific needs of the region, delivering the infrastructure needed to maximise its potential.

Regional profile

- 37% of businesses in the East report being dissatisfied with infrastructure in the region, compared with the national average of 46%. Half (50%) say UK infrastructure has improved over the last five years and 11% believe it will improve in the next five.⁹⁷
- 34% of businesses in the East believe that greater devolution would improve infrastructure in the region, compared with the national average of 47%.⁹⁸
- Productivity in the East is in the 72nd percentile for the UK, meaning it is more productive than 71% of NUTS3^{ix} areas in the UK.⁹⁹
- The maximum working-age population gain by improving infrastructure for a 30 to 45 minute commute zone in the East is 7.31million.¹⁰⁰

Six infrastructure priorities for the region

Enhanced rail connections with London and the South

To maximise its potential for growth, the East's connections with London and the South must be improved, with rail capacity and resilience a priority on the Greater Eastern and West Anglia Main Lines. Businesses in the region welcome the upgrades outlined as part of the new Greater Anglia franchise with commitments for new rolling stock by 2020, extra passenger capacity by 2021 and the delivery of new trains, and will be looking to see these delivered. More than three-quarters of businesses in the region want to see commitments on reduced journey times, so welcome the delivery of services from London to Chelmsford in 25 minutes, Colchester in 40 minutes, Ipswich in 60 minutes and Norwich in 90 minutes moving closer.¹⁰¹ Businesses now want to see this ambition matched by Network Rail with further track and signalling upgrades.

"Firms in the region highlight the need for strategic thinking across the whole of the region in order to make the case for investment which will have the widest and most significant productivity benefits."

ix We have conducted our analysis using NUTS codes, or Nomenclature of Units for Territorial Statistics, a geocode standard created by the EU, given its extensive use in the field of regional growth research. NUTS3 comprise 174 smaller UK regions, which have a maximum population of 800 thousand.

A clear approach to governance for the whole of the Eastern region

Businesses in the East seek a coherent agenda and narrative for infrastructure planning and delivery. The Government's devolution agenda is perceived by some to be too 'metropolitan' with its focus on city regions, and firms see this as an issue for a region like the East that is not focused around one conurbation. Firms in the region highlight the need for strategic thinking across the whole of the region in order to make the case for investment which will have the widest and most significant productivity benefits. In turn, the Government must clarify what the future is for further Eastern devolution or how the region can both attract the investment and undertake the strategic thinking needed to enable the development of infrastructure in the region that will facilitate growth.

Improved East-West connectivity

Improved inter-regional connections from East to West are needed to increase growth potential for the region. Firms in the region are pleased to see major work underway on the A14 Cambridge to Huntingdon, and are keen to see this delivered given that reducing congestion on this stretch was identified as important by 95% of those operating in the region.¹⁰² The extra capacity this work will add will make a significant contribution to the area's potential for growth, connecting the port of Felixstowe with the Midlands and further through connections with the M1 and M6.

Businesses in the region also welcome the important steps that have been taken toward improving rail capacity through Ely. This development would be vital for both freight and passenger services in the region, addressing congestion on key routes. Whilst the headline focus of East-West Rail is the connections from Oxford to Cambridge through Bedford and Milton Keynes, this will be of benefit to the whole of the Eastern region, with potential for growth on rail links through Cambridge onward to Suffolk and Norfolk. Similarly, the new Oxford to Cambridge Expressway will provide both the infrastructure needed to maximise the growth potential of the Cambridge-Milton Keynes-Oxford corridor, and bring further welcome connections to the whole of the Eastern region.

Digital and mobile connectivity needed for growth

Whilst 89% of premises in the region now have access to superfast broadband, this is unevenly spread in the region, with 31% of businesses saying they do not have broadband that meets their needs.¹⁰³ A lack of high speed broadband holds back the region's growth potential, and poor connectivity is seen by some as a contributing factor in making the region a less attractive place to invest.

The wide dispersal of economic activity in the region means that many firms are based in less urban areas where access to digital infrastructure is not as strong. With attention now turning to the harder to reach areas – or 'final 5%' – there will be many businesses in the Eastern region looking to up their digital capabilities.

Similar issues are faced by businesses in tele-communications with significantly varying levels of coverage, and in some cases areas with no coverage. The region is in the 28th percentile for mobile connectivity, meaning it has worse coverage than 72% of the UK.¹⁰⁴ Businesses in the region want to capitalise on emerging technology but lack of service holds back their potential.

Better connections to and from international gateways in the region

If businesses in the East of England are to grow and develop the region's international connections, improved access to world markets through the region's airports is needed. Improved access to airports is important to 66% of businesses in the region, almost a third of which view it as critical.¹⁰⁵ Firms make the case for the West Anglia Taskforce's recommendation of 'Stansted in 40' from Liverpool Street, which alongside a reduction in other journey times on the region's railways, would provide faster connections between the East and the Airport. On road access to the airport, businesses identify a need for improved capacity in the close vicinity to the airport particularly on the A120 and where it meets the M11 at junction 8. Wider improvements to the M11 are also cited, particularly if access from Cambridge to Stansted is to be improved.

Similarly with Luton Airport's redevelopment looking to increase passenger numbers by 50% by 2020, rail service improvements will be needed to match this growth. In addition to increasing services to London with more direct trains through the East Midlands franchise, as well as a new £200m light rail link between Luton Airport Parkway, the intersection between the Midland Mainline and new East-West rail will provide further development opportunities.¹⁰⁶

"Highways England's plans for the region must move from planning to delivery tackling the bottlenecks which challenge the productivity of the region's businesses."

A more connected and resilient road network

Businesses cite the need to improve connectivity within the East as an infrastructure priority. Roads capacity in the region is a real concern, with the East's roads seen as lacking in resilience. The over-reliance on A roads in the region means congestion is quick to develop, with no in built resilience, and in turn pushing road users onto single carriageways and into town and city centres. The development of Expressways in the region should therefore be a priority.

Businesses highlight a lack of adequate further connections from the A1 to key economic hubs in the region with a lack of reliability on the route in the region more generally, something which should be looked at as part of the A1 East of England Strategic Study in preparation for RIS2. The A12 is a key artery in linking the Eastern region to London but firms report poor traffic flow, particularly due to the variations between two and three lanes, as holding back the region's growth. Likewise businesses want to see the A120 upgraded from Braintree to the A12 to resolve bottlenecks and congestion. The Government's package of £1.1 billion investment in road improvements for the East of England is welcome, particularly the planned works to widen the A12 to extend the road to three lanes from London to Colchester. Highways England's plans for the region must move from planning to delivery tackling the bottlenecks which challenge the productivity of the region's businesses.

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For further information or a copy in large text format, contact:

Thomas Barlow Senior policy adviser CBI T: 020 7395 8149 E: Thomas.barlow@cbi.org.uk

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