

Emerging Strategy

November 2016



Midlands Connect
Powering the Midlands Engine



Contents

Foreword	1
1. Introduction	2-4
2. The Midlands Economy	5-9
3. Setting Our Transport Ambitions	10-15
4. Schemes For Early Development And Delivery	16-19
5. Midlands In The Global Market	20-21
6. The Midlands As A National Transport Hub	22-27
7. Moving The Nation's Freight	28-30
8. East-West Regional Connectivity	31-35
9. Sub-National Transport Body	36-37
10. Conclusions	38
11. Next Steps	39
Appendix A Summary Of Schemes	40-42
Appendix B Further Information On Road And Rail Network Performance	43-49

Foreword



Sir John Peace

Chairman of Midlands Engine and Midlands Connect

As we get closer to the finalisation of the Midlands Connect strategy in March 2017, we pause, in order to reassess the economic and political climate in which we are now in – and how that has changed in the few short months since I was appointed chairman of Midlands Connect. This Emerging Strategy, allows us to take that breath to ensure that we are still reaching for outcomes that are as relevant now as when we started the process. Our Emerging Strategy guides the path to the final strategy and identifies where we believe the emphasis should be.

Our geographical position, infrastructure and access to supply chains, is what encourages so many companies to locate in the Midlands. We have national strengths in sectors such as manufacturing, freight and logistics and food technology; and we have attracted record levels of investment from China, India and North America since 2009. We need to continually invest in our transport infrastructure; not just for the Midlands but also for the whole of the UK to succeed outside of the EU. There are a huge amount of nationally important transport assets in our region; if these fail then the UK will fail. Our strategy is seeking extra capacity and faster journey times; but almost more importantly we're planning for a more resilient network.

HS2's arrival to both the East and West Midlands will bring significant economic benefits; from both the new line itself and the capacity it releases elsewhere. It is vital that we harness the huge opportunity open to us from this new piece of national infrastructure. Our strategy plans for its arrival and seeks to exponentially increase its value to the Midlands.

Our strategy is not all about new or upgraded infrastructure. We live in a digital economy where access to information is transforming every aspect of our daily lives. We must not just keep up, but lead the field in transport technology and ensure that innovation runs throughout our strategy.

The Midlands Engine will encourage economic growth to our region, Midlands Connect's role within the Engine is to enable ease of movement for people and goods, link to international markets to help rebalance the UK economy and above all ensure a better quality of life for Midlanders. This Emerging Strategy shows how we can accomplish this and paves the way for our future.

1 Introduction

- The Midlands Engine is backed by the Prime Minister who said “there is so much untapped potential here, right across the Midlands”.
- The Midlands Engine will unlock this potential.
- As the hub of the UK’s transport network, the Midlands is a foundation of national economic success.
- By getting the Midlands HS2 Ready we can seize the opportunities this transformational scheme opens up.
- By consolidating our economic strengths and growing our expanding sectors we can build opportunities for everyone living and working across the Midlands.
- We are focussing on investing in transport and digital information networks on our ‘intensive growth corridors’ that provide national and inter-regional connectivity.
- Unlocking connectivity in the Midlands, unlocks economic potential for us all.

1.1 Purpose of this Report

This is our second report, in which we make the case for strategic transport investment to power the Midlands Engine for Growth.

As well as supporting our Midlands economy, our networks are at the centre of the UK’s transport network, providing vital connectivity for the North, South, East, Wales and the West of the country.

This means our strategy is of national importance to support UK businesses to connect to supply chains and customers in both domestic and international markets.

Unlocking connectivity in the Midlands, unlocks economic potential for us all.

The Midlands Engine is backed by the Prime Minister who said recently

“there is so much untapped potential here, right across the Midlands. The government I lead will help you unleash that potential and together we will make the Midlands - from Lincolnshire to Shropshire – a powerful engine for growth”¹.

This report describes our work to date and provides a first view of our Emerging Strategy. **It sets out the strategic case for action, the outcomes we aspire to and the range of interventions and options we are developing to achieve them.**

When published in March 2017, our first Midlands Connect Strategy will develop further the ideas presented in this report; describe the full potential costs and benefits associated with the strategy; and set out a detailed programme of further planning and delivery.

1.2 Midlands Connect: our Mission

Midlands Connect is the transport workstream of the Midlands Engine.

We are a partnership of 28 local authorities, 11 Local Enterprise Partnerships, two airports, Chambers of Commerce, Highways England, HS2 Ltd, Network Rail and the Department for Transport.

Our mission is clear to unlock our economic potential.

In doing so, we can, as the Prime Minister put it,

“build an economy that works for everyone”².

The Midlands is built on a strong advanced manufacturing sector, the UK’s largest cluster of logistics activity, high-growth technology businesses, and professional services in our major cities. We lead the UK’s export market.

¹Theresa May, writing in the Birmingham Mail 18th August 2016

²As 1 above

These combined strengths mean the Midlands Engine is perfectly positioned to take the lead in growing our cities.

We will consolidate our economic strengths and grow our expanding sectors; in doing so we can create opportunities for everyone living and working across the Midlands and the UK as a whole.

Our Emerging Strategy shows how transport will support the Midlands Engine to ensure we achieve our full potential. We demonstrate the importance of transport under **four themes that mirror our economic role on the global, national and regional scale.**



Figure 1 Midlands Connect Strategy Themes

1.3 The Midlands Connect Emerging Transport Strategy

The Emerging Strategy considers the Midlands in context, not in isolation.

In the **national context**, our strategy describes how we will support business connections, supply chains and customer markets both domestically and in international markets across the whole country. The Midlands is critical to the UK’s success, for example a third of road freight and nearly half of rail freight travels to, from or through our region.

Our strategy also sits alongside planning by Highways England, HS2 Ltd, Network Rail, the Welsh Assembly and the Midlands Engine for Growth to form a fully integrated strategy across the different modes of transport.

An immediate focus is to work with Highways England and Network Rail during their planning phases for their next funding periods commencing in 2020 and 2019 respectively.

We are also working closely with other emerging Sub-national Transport Bodies such as Transport for the North and England’s Economic Heartland. In doing so we can ensure we present strategic solutions that works at both a national and regional level.

Through our close partnership working we are ensuring that these different processes are joined up. Midlands Connect is the glue that can do this, making the combined programme more deliverable and effective.

Within the Midlands, the strategy is aligned with Strategic Economic Plans and other planning at a sub-regional and local level. **Midlands Connect will complement the HS2 Growth Strategies** highlighting specific infrastructure requirements of strategic nature that will maximise return for the UK economy on this ‘once in a generation’ investment.

In developing the options for the full strategy, we are working with local authority partners to ensure we develop solutions that combine to deliver more than the sum of the parts, particularly in relation to where strategic and local networks interact.

For example, strategic park and ride could be delivered in conjunction with intra-regional road capacity improvements between cities or mass transit solutions within urban areas to complement additional rail capacity/new services.

Throughout, the Emerging Strategy focusses on ensuring the Midlands is ‘HS2 ready’ by securing additional benefits. We are promoting areas where we could achieve even more through complementary investment that benefits from the transformational opportunity that HS2 provides.

Smart and Digital Connectivity cuts across all our themes because it can improve the performance of the transport networks in the short to medium term; as well as offering longer-term opportunities to achieve our ambitions such as autonomous vehicles and ‘smart’ network management.

Finally, **resilience within our transport network consistently comes back as perhaps the most critical issue our economy faces.** Providing certainty of movement and journey times enables our businesses to accurately understand their costs and people to be sure of reaching their destinations in acceptable times. Our networks must be resilient to daily fluctuations in demand, but also responsive to incidents.

This document is our **Emerging Strategy, not a draft of our full strategy.** Its purpose is to present our technical investigations thus far and describe the range of options that we are developing and testing in terms of their effectiveness in meeting our conditional outputs. We recognise that there is still work to do before we can have full confidence in the strategy we present, but this report provides a view as to what our thinking is thus far.

At this stage we recognise that many of the options identified would ideally be delivered within a 15-20 year time horizon (depending on availability of resources).

Our Midlands Connect Strategy will consider the longer term 2050 horizon and set out ideas or concepts that need to be developed further if we are to plan for economic resilience and provide for the movement of people and goods over the longer term.

The full strategy in March 2017 will contain the full Midlands Connect programme with sequencing of development and delivery in five year blocks. It will also contain our initial estimate of the value for money and scale of costs for the interventions.

2 The Midlands Economy

- The Midlands has strong advanced manufacturing and engineering and is the hub for UK logistics.
- We are home to high-value wealth creating sectors such as transport technologies, agri- food and drink production and medical technology.
- Productivity improvements could grow our economy by £25bn per annum.
- Our focus for growth should be in our cities and through connecting our economic hubs together.

2.1 The Midlands Economy Today

In 2015, the Midlands generated an economic output of £220 billion, or 16% of total UK GVA. The Midlands also accounts for 17% of all UK exports, and 22.5% of UK manufacturing exports.



The Midlands, Northern Powerhouse and London combined makes up half of the UK economy.

Transport investment should give greater weight to the Midlands GVA output.

The strategic location of the Midlands and importance of our networks to national and international supply chains means that investment in our region will deliver benefits across the country.



Figure 2 Share of GVA in UK

(Source: Midlands Engine for Growth 2013 data)

2.2 The Midlands' Economic Potential

Our Strategic Economic Plans set out the ambition for over half a million new jobs for the Midlands. Of these, over 300,000 are planned in key growth sites which will be unlocked through investment in better transport. Our strategy will also complement the HS2 Growth Strategies by maximising the strategic connectivity of the HS2 stations making the Midlands truly "HS2 ready".

However, **the Midlands has a productivity gap** - with average GVA/worker 10% below the UK average which

in itself is behind all but one of our G7 partners. Raising the average GVA/worker to the national average would in itself grow the Midlands' economy by £25bn per annum, or 12% of current output.

By securing significantly more investment through Midlands Connect we will drive growth by creating a resilient and reliable transport network. Through more reliable and faster journeys to/from and through the Midlands we support the productivity of national economic activity dependent on our rail and road networks.

2.3 We are a Global Player - Selling to the world and securing Investment

Leading the UK on global scale, accounting for 17% of all exports, the Midlands has a crucial role to play in supporting our export market; and in bringing in inward investment. Selling to at least 178 countries, exports from Midlands businesses have increased by 38% between 2010 and 2013.

Our global position allows us to lever in investment to the UK and our **inward investment projects grew by 130% between 2011 and 2015**. In the same period, we attracted 880 Foreign Direct Investment projects creating over 48,000 new jobs and safeguarding a further 23,000 across the Midlands.

2.4 Nationally Significant Economic Activity

The Midlands punches above its weight in manufacturing, accounting for a quarter of the UK's jobs and GVA, centred on our manufacturing heartland in the central Midlands area.

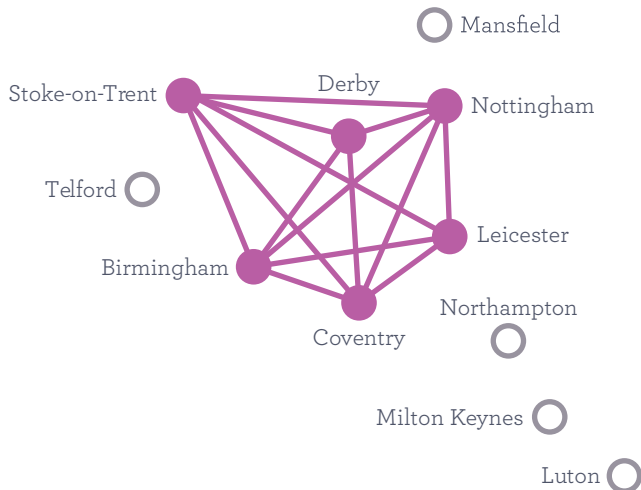


Figure 3 Largest Manufacturing Locations and Indicative Links

The Midlands has a strong advanced manufacturing and engineering base which employs over 600,000 people in companies such as Jaguar Land Rover in Wolverhampton and Solihull, and Toyota, Rolls Royce and Bombardier in Derby. Reliable transport connections are important to complex supply chains to ensure delivery to time slots and productivity is maintained.

We also have a strong food and drink production

sector in cities such as Leicester, closely allied to clusters of food-related farming in Worcestershire, Herefordshire, Shropshire and Lincolnshire.

We are home to global brands and the sector is based on a thriving and complementary agricultural and agri-technology sector, contributing greatly to the nation's food security. Companies like Mondelez, Pepsico, Samworth Brothers, Branston, Walkers and Weetabix play an important role in our economy.

The Midlands Engine is home to the largest number of medical technology and device companies in the country. We have a strong life science pedigree that stretches from Nottingham, with its centre piece BioCity, to Birmingham, with the newly opened Institute for Translational Medicine.

2.5 Moving the Nations Freight

Because of its location, **the Midlands is the centre of the UK logistics sector**, accounting for approximately 20% of UK jobs and GVA. Logistics activity is strongest adjacent to the strategic transport networks from Stoke in the north west to Milton Keynes in the south east but is most heavily concentrated in the 'golden triangle' in Northamptonshire and Leicestershire: the A50 corridor and the UK's leading freight-focused airport at East Midlands Airport.

The Midlands has clear advantages due to its proximity to much of the UK: **90% of UK businesses are accessible within a four hour drive time of the Midlands**. The Midlands has significant rail-connected distribution centres with more under development (for example at Daventry, Castle Donnington and Four Ashes) providing businesses with integrated multi-modal distribution options.

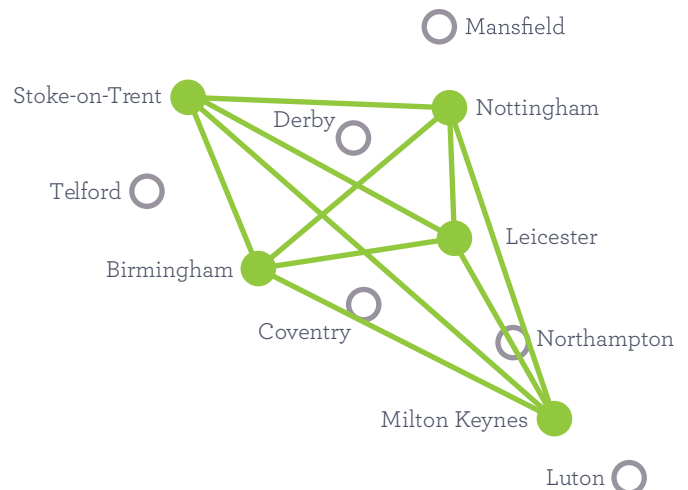


Figure 4 Largest Wholesale and Retail Locations and Indicative Links

2.6 Diverse Regional Economies

The private sector accounts for three-quarters of the Midlands' 5.8 million jobs. Professional services, retail/wholesale and manufacturing are the dominant activities in the private sector accounting for two-thirds of all private sector employment. **Over 100,000 people are employed in business, professional and financial services in Birmingham**, including companies such as Deutsche Bank; **whilst in Nottingham the business services sector employs over 75,000 people** and contributes £4 billion to the local economy. Companies including Capital One, Experian and Ikano Bank all have a presence in the city. However, the Midlands is under-represented in terms of professional services and accounts for only 10% of UK professional services GVA.

We will continue to be home to exciting, cutting edge high performance technology, and world-leading research facilities.

The Midlands Engine will continue to rise to the global challenges in the energy sector. **We are home to the second largest chemical cluster in the UK**, worth £6bn per annum, and the largest UK refinery cluster, totalling 27% of UK total capacity.

The region's growing Creative, Digital and Design sector will continue to underpin much of our wider growth, supported by world-leading smart technology.

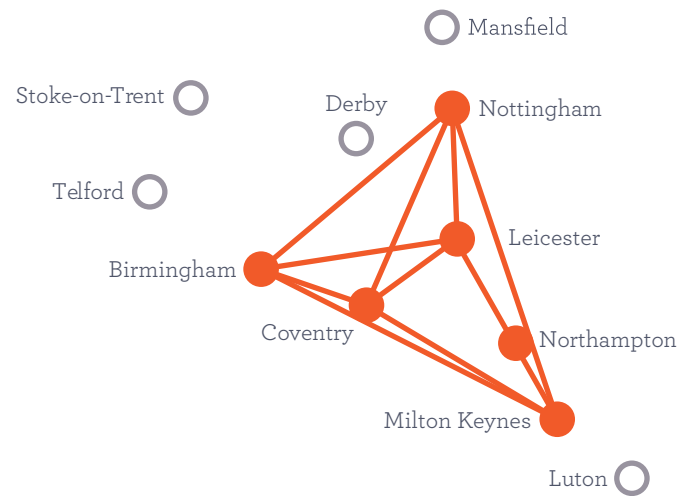


Figure 5 Largest Financial Services Locations and Indicative Links

2.7 Transport and Economic Growth

There is a growing body of evidence about the relationships between the movement of people and goods and the economy, and **in particular how investment in transport can unlock economic growth**

and raise productivity. Whilst there is still much to learn about the detailed causality of transport at a local level, there is general consensus on their impacts on the economy as demonstrated in Figure 6⁴.

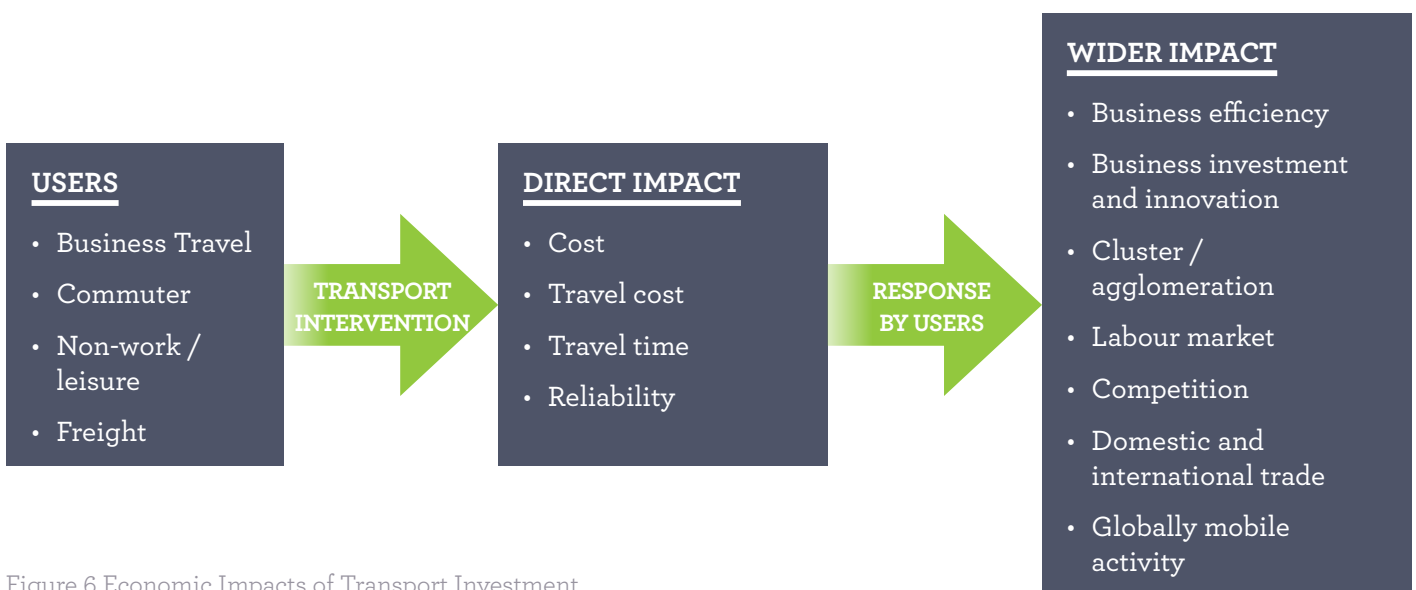


Figure 6 Economic Impacts of Transport Investment

⁴See Eddington, Overman & Laird, Gibbons 2015, Volterra/ Arup (2014) Understanding the transport infrastructure requirements to deliver growth in England's Core Cities, Volterra (2014) Investing in City Regions: the case for long-term investment in transport, Frontier (2016) Assessing the productivity benefits of improving inter-city connectivity in Northern England.

The Midlands Connect Strategy will maximise these effects by delivering investment which will:

Remove transport barriers to unlock growth by:

- Ensuring the transport network is resilient to incidents, events and maintenance needs to provide journey time certainty all day, every day.
- Developing these solutions within the context of the Midlands at the centre of the national transport network to maximise the benefits for UK businesses.
- Tackling connectivity, congestion, capacity and reliability issues on road and rail to maximise indirect economic impacts.
- Working in harmony with other Midlands Engine initiatives (such as skills) to maximise second order direct effects, and the indirect effects, to ensure transport improvements are not constrained.

Raise productivity by:

- Providing reliable and reduced road and rail journey times for people and freight, between key centres in the Midlands and elsewhere, including international gateways.
- Targeting our large and fast growing cities and targeting sectors for which face-to-face business contact is important. Given the scale of its economy, the biggest potential agglomeration benefits come from improving access to Birmingham but other improved connections also potentially very beneficial (e.g. Derby-Nottingham).
- Improving the way that the public can plan, pay for, and travel on the transport networks across the region.

2.7.1 Centre for Cities Report – Growing our “export base” and attracting foreign investment

A recent Centre for Cities report adds further weight to the importance to the national economy of regions increasing their ‘export base’. By export base the report means the goods and services they sell on in regional, national or international markets.

The report **emphasises the importance of cities in driving growth and attracting inward investment.**

City centres are highlighted as having the largest clustering of economic activity. “Despite accounting for just 0.08% of land, they were home to 8% of businesses and 14% of jobs in 2015.....32% of Britain’s high skilled jobs in the service exporter market being located in city centres.”

Attracting foreign investment shows an even greater emphasis on cities. In 2015, 30% of foreign owned service exporting firms were in city centres (11% for all service exporting) and 40% of foreign owned goods exporting businesses were in the suburbs (28% for all goods exporters).

As highlighted earlier in this chapter, the Midlands has been very successful in bringing in foreign investment, creating over 48,000 new jobs between 2011 and 2015 and safeguarding over 23,000 existing jobs. If we are to continue to grow our export based market in goods and services attracting further inward investment then rail access to city centres, reliability issues on our highway networks in the suburbs and access to international business destinations are the key barriers we need to address.

2.8 Unlocking our Growth Sites and getting the most from HS2

Figure 7 shows our strategic growth sites that could become home to over 300,000 new jobs. This investment will be complemented by new housing, skills training and inward investment led by the Midlands Engine.

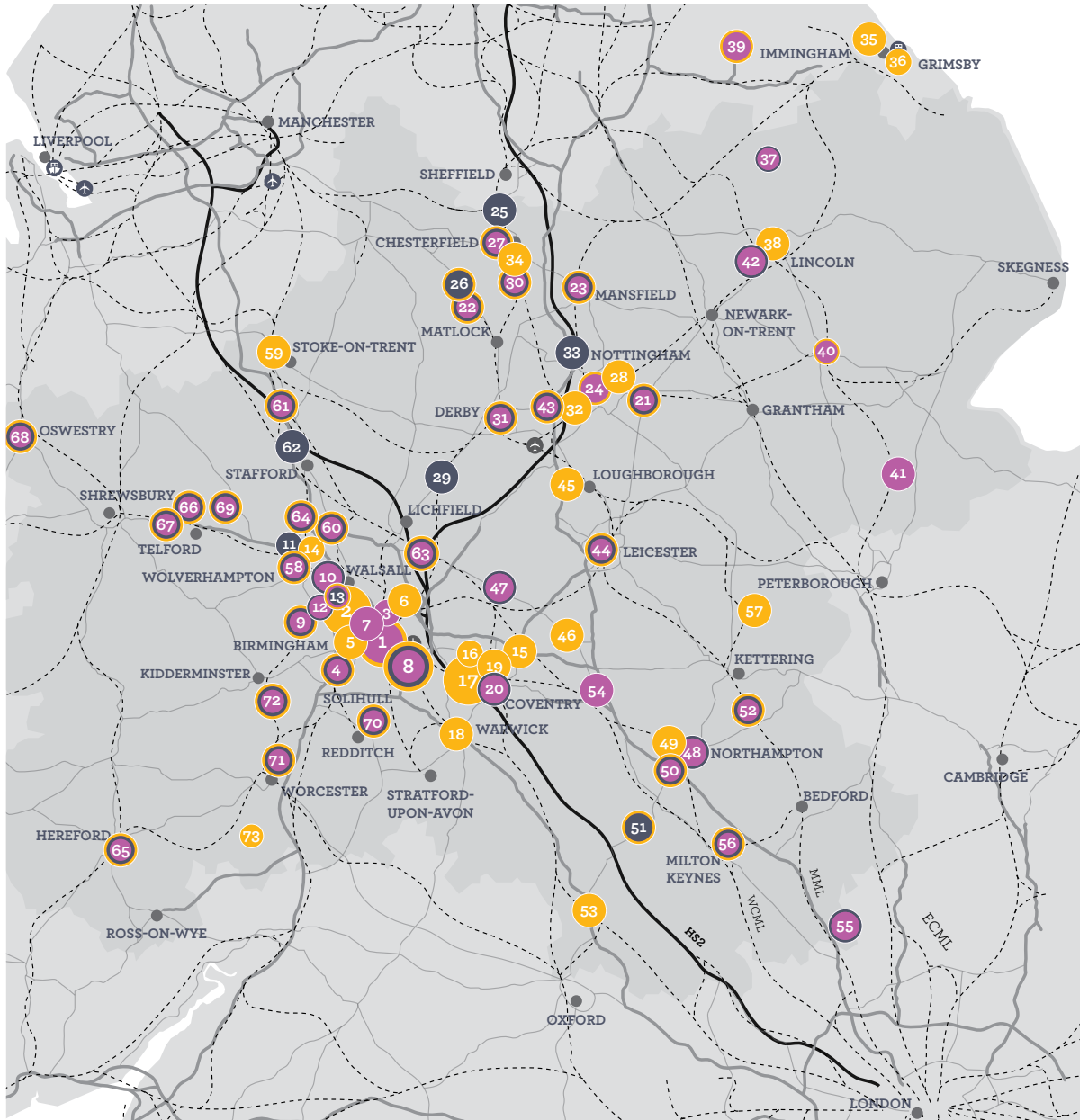
We need to ensure that we maximise the benefits of HS2 in unlocking our growth sites. There are five HS2 stations proposed that serve the Midlands Connect area at Birmingham Curzon Street, Birmingham Interchange, East Midlands Hub (Toton), Crewe and Chesterfield. Put simply, we can get even more benefits out of the HS2 investment for the people living and working across the Midlands through connecting in and maximising the economic impact of this transformational project.

Over 50% of the Midlands’ economy is in sectors which are expected to benefit the most from HS2.

Jobs in sectors with the greatest potential to benefit from HS2 are clustered in the cities (such as Derby, Northampton, Milton Keynes, Nottingham, the Birmingham conurbation, Coventry and Stoke) and surrounding areas (e.g. north/south of Birmingham and west of Milton Keynes) as well as a relatively high share in Shropshire.

The Midlands Connect Strategy will complement the HS2 Growth Strategies, bringing forward interventions that will add value and make the Midlands truly “HS2 ready”.

In particular, we believe that to maximise the potential of the Midlands Engine for growth, the delivery of Toton should be accelerated to 2030 with the associated connectivity benefits to the North of England.



Strategic Growth sites are currently under review and an updated map will be included in the Midlands Connect Strategy March 2017.

Key ● Manufacturing ● Logistics ● Producer Services

Birmingham and Solihull

1. Birmingham Curzon HS2
2. City centre Enterprise Zone
3. HS2 Washwood Heath maintenance depot
4. Longbridge
5. Paradise
6. Peddimore - employment proposal.
7. Snow Hill
8. UK Central

Black Country

9. Brierley Hill sites (Waterfront, Archill & Harts Hill)
10. Darlaston Existing EZ Sites
11. I54 plots (remaining)
12. Park Rose Industrial Estate, Smethwick
13. Sandwell Gateway Regeneration Opportunity
14. Wolverhampton Business Park

Coventry and Warwickshire

15. Ansty Park & Phase 2
16. City Centre South
17. Coventry Friargate
18. Tournament Fields, Warwick
19. Whitley Business Park
20. Whitley South

D2N2

21. A46 Corridor sites
22. A6 Enterprise Corridor
23. Berry Hill
24. Broadmarsh and Southern Gateway
25. Callywhite Lane
26. Cawdor Quarry
27. Chesterfield town centre and A61 Growth Corridor
28. Creative Quarter, Nottingham
29. Drakelow Park
30. Former Biwater
31. Infinity Park, Derby
32. Nottingham Enterprise Zone
33. Rolls Royce site, Hucknall
34. The Avenue

Greater Lincolnshire

35. Able Marine Energy Park
36. Europarc
37. Land at Hemswell Cliff
38. Lincoln Science and Innovation Park
39. Normanby Enterprise Park
40. Sleaford Enterprise Park
41. Spalding Rail Freight Hub
42. Teal Park, North Hykeham

Leicester and Leicestershire

43. East Midlands Gateway
44. Leicester Strategic Regeneration Area
45. Loughborough Science and Enterprise Park
46. Magna Park
47. MIRA Enterprise zone and Technology Park

Northampton

48. Northampton South East (Houghton Gate and Martin's Farm)
49. Northampton Town Centre (not waterside)
50. Northampton Waterside enterprise zone
51. Silverstone
52. Wellingborough Stanton Cross

South East Midlands

53. Bicester Eco Town
54. DIRFT III, Daventry District
55. Luton Airport
56. Milton Keynes, Western and Eastern Expansion areas
57. Priors' Hall at Corby

Stoke-on-Trent and Staffordshire

58. Enterprise Zone, I54
59. Ceramic Valley Enterprise Zone
60. Kingswood Lakeside
61. Meaford
62. Redhill Employment Park
63. Lichfield Employment Site
64. Bericote Four Ashes

The Marches

65. Hereford Enterprise Zone
66. Hortonwood
67. Hortonwood West
68. Oswestry Innovation Park
69. Telford T54

Worcestershire

70. Redditch Eastern Gateway
71. Worcester Technology Park
72. Kidderminster
73. Malvern Hills

3 Setting our Transport Ambitions

- The role of the Midlands at a national scale underpins our approach.
- We have analysed our transport networks in conjunction with economic handbrakes for existing businesses and new investment opportunities.
- Our strategy will open up new strategic growth sites with the potential for over 300,000 new jobs.
- Our option development is guided by four headline Conditional Outputs.
- Our full strategy will sets out the corridor specific outcomes for road and rail journey times, reliability and capacity that we want to achieve.

To guide the development of our strategy we have framed the technical work within four headline Conditional Outputs (see Figure 8). **These reflect the main transport conditions needed to drive economic growth across our region.**

Our Conditional Outputs are intentionally aspirational to ensure our technical work is not constrained by current thinking, custom or practice. Option development work is not just considering how we achieve these in full – it will look at increments – benefits, costs and deliverability.

As we draw together our full strategy in March 2017 **we will be able to refine and set corridor-specific Conditional Outputs** based on our deeper understanding of what is possible and economically viable to achieve.

We have used the Conditional Outputs to identify where the current and forecast performance of our transport networks falls below what is required to support growth. From this, we have developed a range of potential infrastructure, passenger and digital technology solutions along each of our intensive growth corridors.

We are **ensuring the role of the Midlands at a national scale remains in the forefront of our minds** as we develop and test options.

CO1 - Highway Journey Times

“Mile a Minute on the Strategic Road Network”

To achieve an average speed of 60mph on the SRN between our key centres, national and international destinations

CO2 - Highway Journey Time Reliability

“Journey times should be reliable for people and freight”

Based on the CO1, the Journey time (in normal conditions) should be no more than 20% higher than the average* journey time. At any time, everyday.

CO3 - Rail Journey Times and Services

“Direct and fast links between our key centres, national and international destinations”

CO3a All our key centres and national destinations to be served by direct services, with no interchanges

CO3b All journeys to have an end to end average speed of 90mph or more

CO4 - Rail Capacity

“We can carry all the freight and people that we want to”

CO4a Off peak – “everyone gets a seat” – seats occupied $\leq 100\%$

CO4b Peak – no more than 20 minutes standing into our key centres

CO4c – Sufficient rail freight capacity

Figure 8 Headline Conditional Outputs

*50th percentile/Median is being used

Below we provide a summary of our conditional outputs – further information alongside the supporting library of evidence that will be published with the Midlands Connect Strategy in March 2017.

A high level summary of the current journey time, reliability and capacity of our rail and road our network is included in the next section, **further information is included in Appendix B.**

3.1 Conditional Outputs for Roads

Roads are, and are likely to remain, the dominant mode for commuting and business trips and for the movement of materials from suppliers to manufacturers and from manufacturers to markets within an increasingly ‘just in time’ supply chain.

An effective, reliable and resilient road network is therefore vital to our existing economy and our economy of the future. Road connectivity is ‘critical’ or ‘very important’ to 80% of logistics firms, 60% of manufacturing firms and 45% of professional services firms in the Midlands. Some 60% of these businesses report that conditions on the major road network causes them problems, and the situation is most acute for our logistics companies.

In aerospace alone, the supply chain consists of 400 core high-technology manufacturing companies and institutions, contributing over 40,000 largely highly skilled and high value jobs to the economy⁵ all dependent on an increasingly unstable transport network.

Impact of Road Network	Logistics	Manufacturing	Professional Services
Delayed deliveries	42%	31%	24%
Delayed supplies	39%	30%	17%
Employee punctuality	24%	15%	17%
Poor reliability of journey time	17%	11%	12%
Long journey time	10%	7%	7%

Figure 9 Business Impacts of Road Network - Midlands Connect Survey 2016

But this is not just a Midlands phenomenon. Businesses across the UK face similar issues. Many are also dependent on the Midlands both in terms of direct customer and supply chains for through movements with us as the hub of the national network.

Similarly, the strategic transport networks in the rest of the UK are important to Midlands’ businesses: three-quarters of our businesses’ suppliers are outside the Midlands. The economic interdependencies between the Midlands and the rest of the UK are very strong.

3.1.1 Highway Journey Times

Our aspiration is that people and goods can make faster journeys on our national road networks.

We want average speeds of journeys on the strategic road network (SRN) to be 60mph at all times of day and all days per week **in line with the Government’s vision set out in the current Road Investment Strategy.**

Currently however, traffic congestion means that speeds are below this level on many parts of the SRN during peak periods but also in the inter-peak.

Many of the sections of strategic network worst affected are key freight routes. As traffic continues to grow we expect these speeds to deteriorate, even with the currently planned levels of investment in the SRN.

Figure 11 shows current average speeds on the SRN in the morning peak period and how these would need to change to achieve our ‘mile a minute’ aspiration.

3.1.2 Highway Journey Time Reliability

Our aspiration is simple – you should know how long it will take you travel regardless of the time or day of the week. This means that journey times at certain times of the day or day of the week should vary little from one day to another, or from week to week.

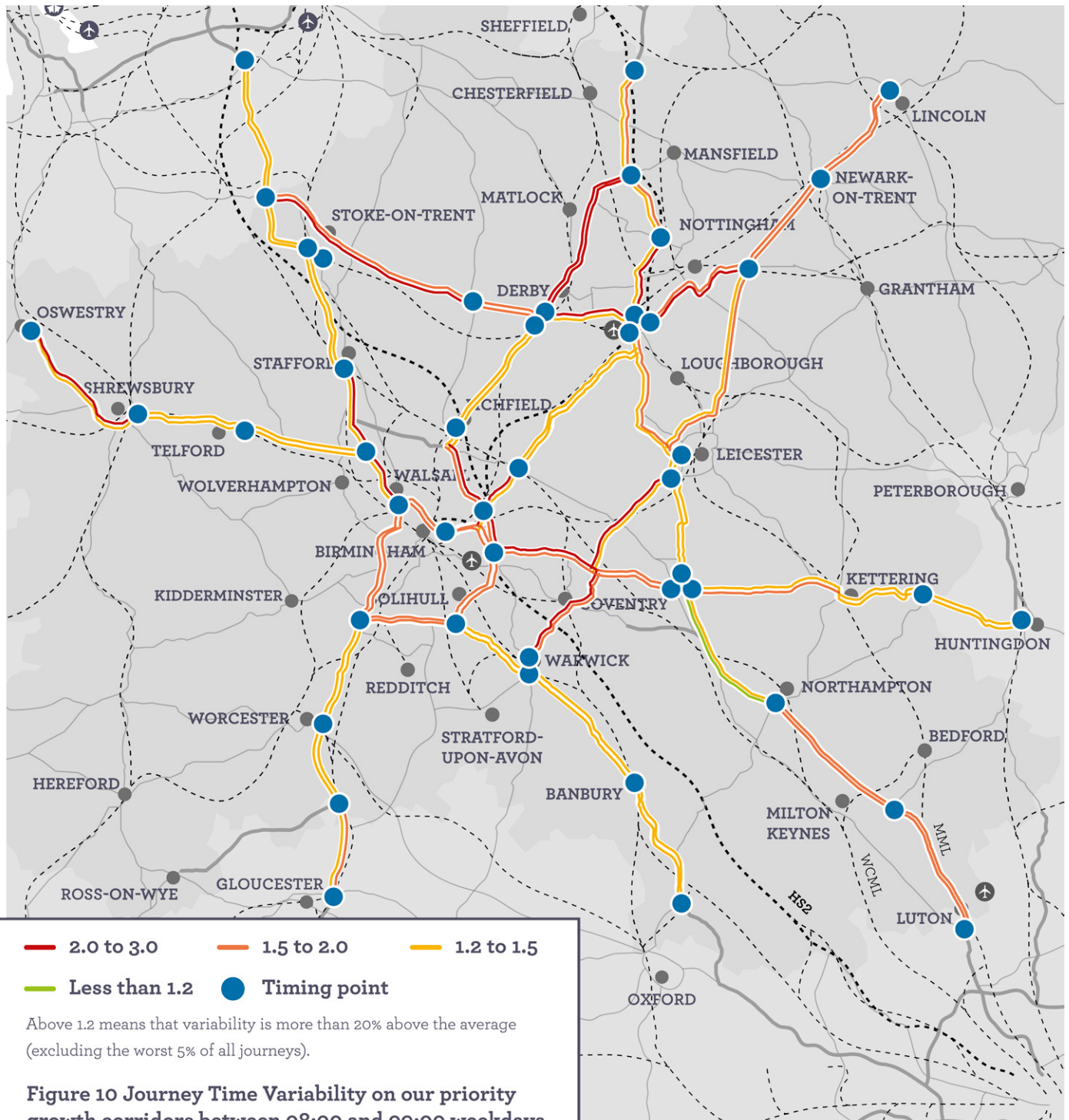
Currently this level of reliability is rare on the SRN; journey times are inconsistent meaning the ‘spread’ of journey times is large (see Figure 10). Predicting journey times for individual trips is therefore very difficult, meaning that individuals or businesses build additional ‘slack’ into their journey plans, with consequent increases

in cost and reduced quality of life.

Our target is that all journeys within each time period can be completed within 20% of the median journey time for that period. In other words, the ‘spread’ of journey times is reduced.

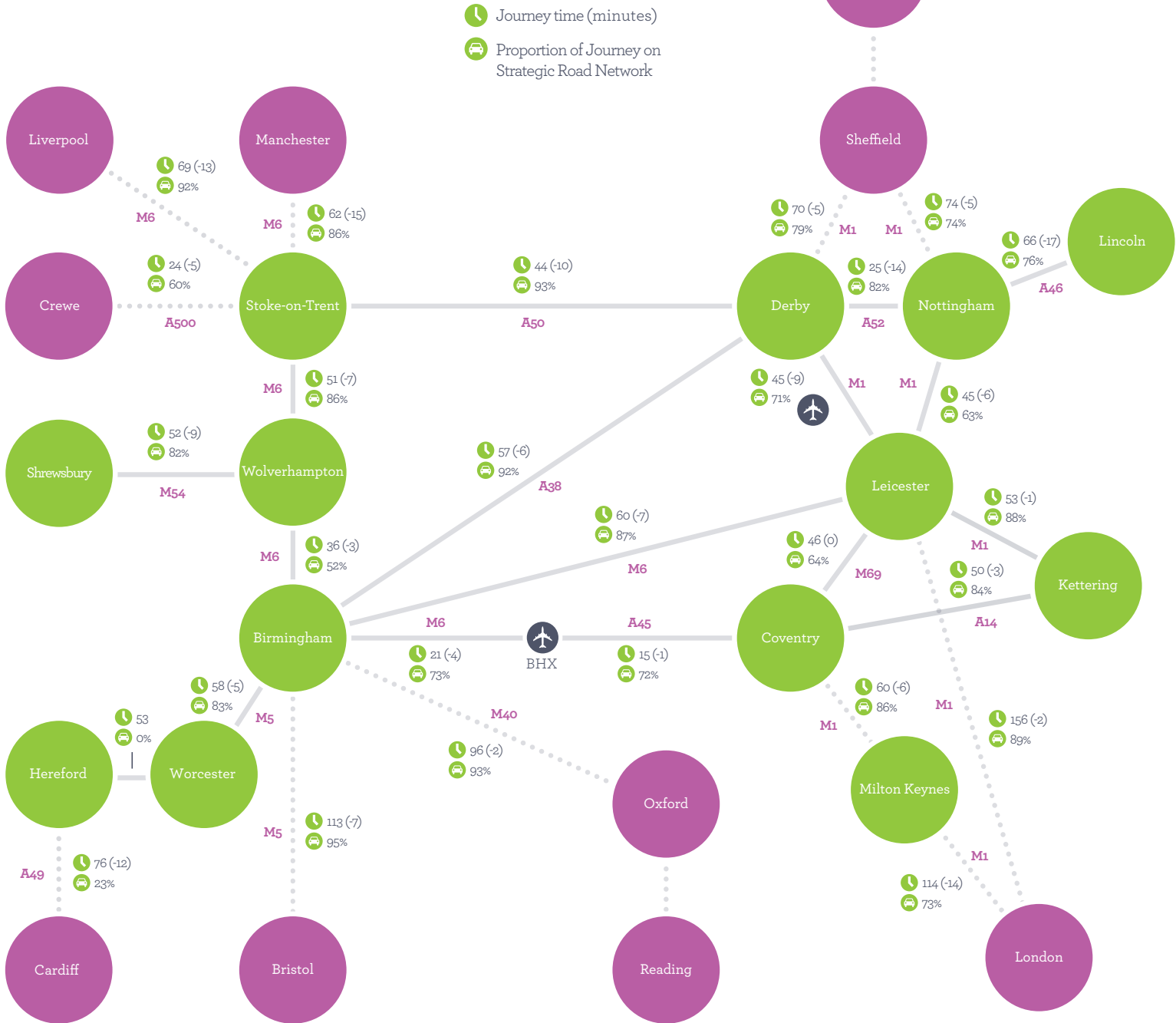
Implicit in our aspiration for consistent journey times is a **resilient network that can cope with incidents and events**.

This is particularly important for time-critical freight movements such as those making refrigerated or ‘just in time’ deliveries or those to ports and airports.



Midlands Connect Road Journey Time Aspirations

Future provision Changes over existing in brackets



Numbers presented are based on Journey Times taken during the weekday morning peak

Figure 11 Morning Peak Journey Time Aspirations

3.2 Conditional Outputs for Rail

The performance of the rail network is important to one in four businesses in the Midlands. Although the number of businesses affected by the rail network is less than that for road network, for some of these companies, rail services are the only way to provide the travel capacity needed to reach labour pools and to fulfil face-to-face business interaction. Nearly all of those businesses to which the rail network is important believe that their activities are constrained by poor network performance.

The concentration of professional services in our city centres means that rail services are crucial to provide access to large labour markets. Fast, frequent rail connections between key centres and beyond the Midlands allow our companies to do business. Access to stations and interchanges to local public transport are needed to support this.

Modern workers need rail services that meet the needs of flexible working patterns, that enable productive working time on-board, and that reliably link to other modes of transport in a multi-modal, multi-operator environment. The Midlands is served by seven major rail franchises. As they are renewed there is a great opportunity to provide more joined up journey planning and flexibility in ticketing through stronger coordination.

The rail network also plays an important role in the movement of freight between suppliers, manufacturers and markets. **In total, almost half of all GB rail freight is to, from, within or through the Midlands** with key routes connecting to ports at Felixstowe and Southampton. Rail freight customers need appropriate train paths and terminal capacity and where this is constrained, they quote delayed supplies and deliveries as impacts on their business.

3.2.1 Rail Journey Times and Services

Our ambition is to have direct rail services between all key locations within the Midlands and to key centres elsewhere. Currently this is not the case, with no direct services for example between Leicester and Coventry, Solihull and Wolverhampton, or Nottingham and Birmingham Airport.

A step change in ticketing approaches is needed to enable new and novel ways to plan and pay for travel on the rail network.

As part of greater devolution of rail services making them more responsive to wider needs including earlier/later services, services on Sunday/special events, new stations/improvements and greater community/business involvement.

The speed of rail journeys is variable; journeys between key Midlands centres and London are relatively fast,

but average speeds within the Midlands and to other locations are commonly slow (less than 50 mph). For example, a 52-mile rail journey from Birmingham to Nottingham takes 69 minutes, an average speed of just 46 mph.

Examination of journey times elsewhere in the UK shows that we can set a much higher ambition. For example, a comparable journey between Southampton Central and Reading of 50 miles takes just 49 minutes, at around 20 minutes faster. Figure 12 shows the journey times between centres which would be achieved based on an aspirational 90mph average speed for fast/semi-fast services.

Average freight train speeds are very low, typically 25mph, despite trains being capable of 60 mph or 75 mph. The Network Rail Freight Network Strategy makes a start at looking at this issue, and the strategy should support developments such as Nodal Yards (holding yards) and a thorough review of timetabling and pathing to improve average freight train speeds.

3.2.2 Rail Capacity

Network Rail forecasts suggest that passenger overcrowding on trains will worsen in the future. These problems are expected to be most acute in the Birmingham area, with several locations (including on the Birmingham to Coventry corridor and on the Cross City Line towards University) forecast to have in excess of 140% seat utilisation in the peak.

Looking towards 2037, HS2 will address some key strategic capacity issues and provide transformational national connectivity, there will however remain some capacity constraints to be addressed on other parts of the network reflecting the scale of population and jobs growth across the wider region. This will act as a brake on the Midlands economy which we must address.

Our ambition therefore is that we release this brake by providing **more rail passenger capacity** – sufficient to ensure that, at worst, no passenger has to stand for more than 20 minutes on peak services into key centres and, that in the off-peak, everybody has a seat.

The Midlands lies at heart of the UK rail freight network and hence plays a key role, both in terms of national and local freight movements. Several routes are of particular importance, including the West Coast Main Line, Midland Main Line, the Birmingham to Derby Line and the route between the Midlands and Felixstowe via Peterborough.

The West Coast Mainline is important, as are the routes to Southampton and Felixstowe, both of which have been identified for investment in the Network Rail Freight Network Strategy.

The biggest driver of rail freight is expected to be the intermodal sector, with Network Rail's Freight Market Study forecasting continued growth in demand to and from the ports, but also domestically (for example, between the Midlands and Scotland).

Particularly important intermodal flows for the Midlands are those to/from the Haven Ports and Southampton. In the case of the former, trains route via either London or



Peterborough but both routes have constraints which will limit further service enhancement. There are also constraints on the Southampton route as it interacts with several key passenger train routes (including the South West Main Line and Great Western Main Line).

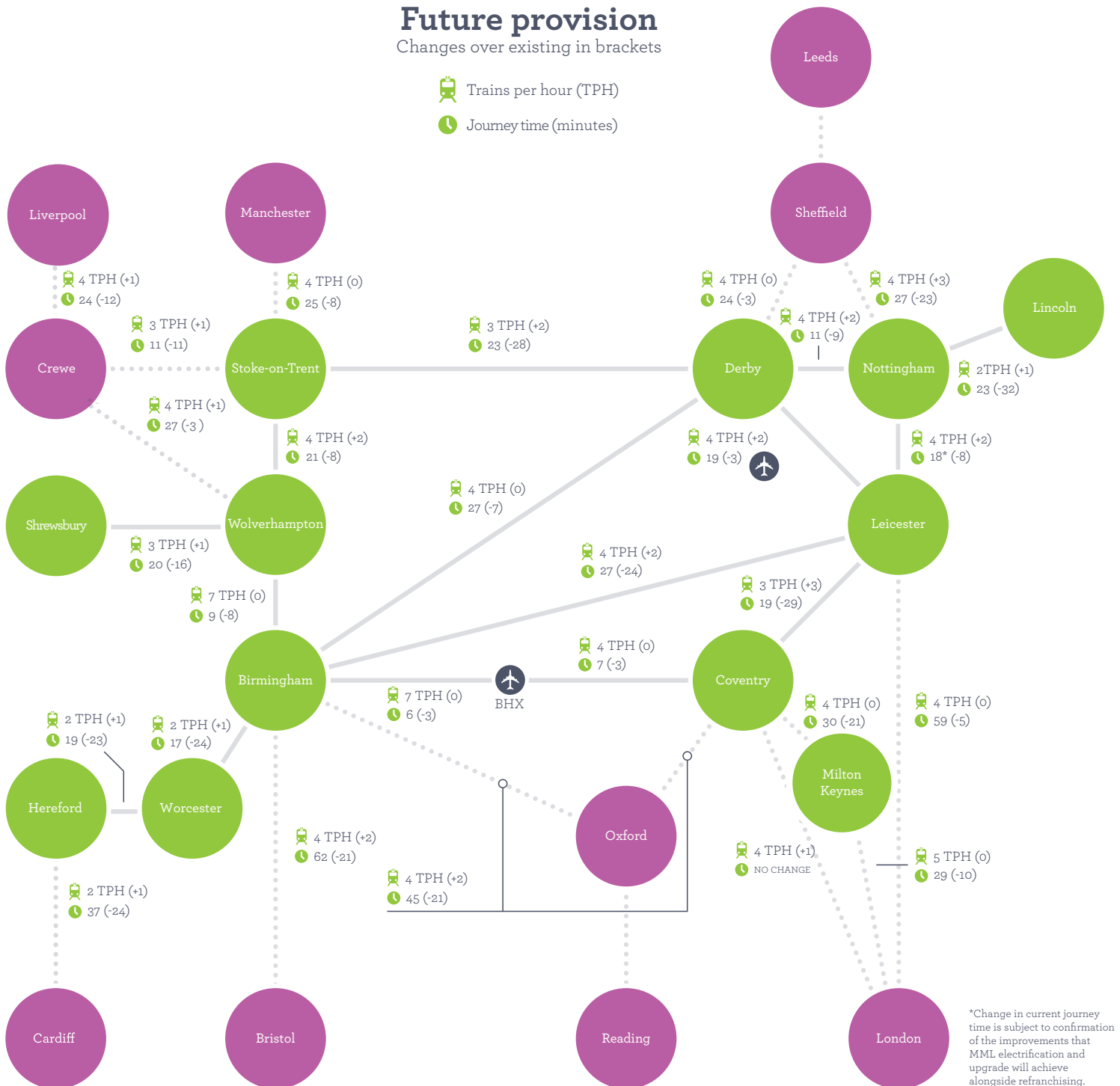
As such, providing sufficient rail freight capacity in the future presents a clear constraint for the UK based on the networks within our region.

Midlands Connect Rail Frequency and Journey Time Aspirations

Future provision

Changes over existing in brackets

-  Trains per hour (TPH)
-  Journey time (minutes)



Numbers presented exclude stopping services and are based on semi-fast / fast services only

Figure 12 Midlands Connect Rail Frequency and Journey Time Aspirations

4 Schemes for Early Development and Delivery

- Existing commitments such as Midland Mainline upgrade and RIS1 schemes must be delivered in full.
- The Midlands rail hub is a crucial first step for future rail improvements.
- The Motorway hub is already at breaking point, crippling the potential for UK growth – we need to plan for the future.
- We have motorway pinch points that need short term solutions whilst longer term planning takes place.
- Smart and digital connected measures can deliver ‘quick wins’ out of our networks and should be pursued as a matter of priority.

4.1 Existing Commitments

We strongly support and look forward to existing government commitments being taken through to delivery. At a strategic level this includes the following schemes.

4.1.1 Midland Mainline Upgrade and Electrification between Bedford and Sheffield

We strongly welcome the Government’s continued commitment to this transformational scheme. It is important that current momentum is maintained, and that electrification to Corby by 2019 and to Sheffield by 2023 is completed following the Hendy Review. We must also have a long-term rolling stock solution to make the most of the new infrastructure and welcome East Midlands Trains’ recent strategy on this issue⁷.

4.1.2 Schemes for Delivery in Road Investment Strategy (RIS) Period 2

In developing our Picking up the Pace Report (July 2016) we supported the current Road Investment Strategy programme and called for rapid commencement of development work on the four strategic schemes below:

- A46 Newark Northern Bypass;
- M5/M42 Birmingham Box Phase 4 Smart Motorway;
- A45 Stanwick to Thrapston; and
- M1 Junctions 19-23A Smart Motorway.

In its Road Investment Strategy 1, Highways England pledged to commence this work during RIS period 1 (i.e. by March 2020). We welcome formal confirmation of this in Highways England’s Delivery Plan 2016 and look forward to this work beginning as soon as possible; and to construction starting for these schemes during the early part of the second RIS period.

4.2 Midlands Rail Hub

Midlands Rail Hub is a series of infrastructure measures within central Birmingham (Bordesley to Birmingham Moor Street, and Birmingham Snow Hill Station area), along with interventions along the Water Orton and Kings Norton corridors.

Together they will provide greater resilience to passenger rail journeys and provide additional capacity to enable up to 10 additional trains per hour to run into central Birmingham.

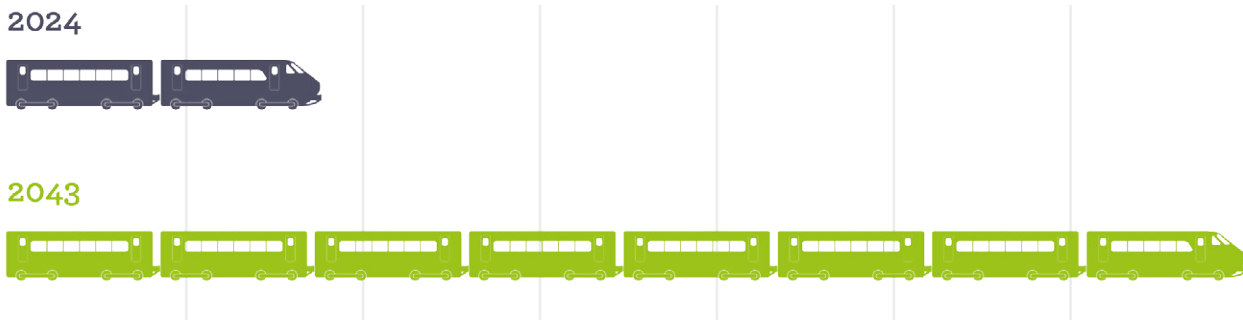


Figure 13 Extra Train Carriages Needed to meet Birmingham Commuter Demand

Delivering the Midlands Rail Hub is the key to unlocking rail capacity in the Midlands **for the benefit of local, regional and long-distance services across the whole UK** as well as for movement of freight. As such it is a nationally significant transport project.

Part of our technical work up to March 2017 is to form a Midlands Connect view of what the best possible use of the additional train paths should be. We will recognise the importance of considering aspirations for additional local services as part of this.

The Midlands Rail Hub is important for enhancing local/regional access to HS2 Curzon Street utilising Moor Street Station and the Camp Hill Line and Tamworth/Nuneaton Corridor. The potential for improved regional links is further strengthened by the Greater Birmingham and Solihull LEP Snow Hill Capacity and Connectivity Scheme which adds a Rowley Regis turn-back platform to the Midlands Rail Hub.

Our immediate priority is to secure the necessary funding to continue development work well in advance of the next rail industry Control Period. We are currently working up the detailed requirements, with Network Rail, to take this project through the first industry stages of business case development **so that we can ensure work can commence during early 2017 if we can secure the funding commitment from the Government.**

4.3 Midlands Motorway Hub

Lying at the centre of the Strategic Road Network (SRN), the M42, M5 and M6 'box' around the Birmingham hub plays a vital role in the success of the UK's economy. The motorway hub provides strategic connectivity east-west and north-south within and beyond the Midlands.

However, high traffic volumes mean that the performance of the motorway hub is often below what is needed. Congestion and poor resilience can result in long delays and unreliable journey times. These problems are well known.

We have secured the commitment from Highways England to match Midlands Connect funding for this study. Both parties recognise the importance of building in outputs from this study into the next Road Investment Strategy (RIS) to start to plan and secure a long term future for movements through the Motorway Hub.

This jointly funded study will examine the current and long term issues up to 2040 for the Motorway Hub. The study is intended to report in Summer 2017 to feed into the Strategic Road Network Initial Report as part of the development of the next RIS.

We anticipate that the study will set out ambitious options for investment and as it progresses we will incorporate its emerging findings into the Midlands Connect Strategy March 2017.

Following its completion in summer 2017 it will inform future updates of the Midlands Connect Strategy and the development of the next Road Investment Strategy.

4.4 East-West Rail Connectivity

Our full strategy will set out **a compelling need to further develop enhanced East-West Rail connectivity**. The five main corridors we have identified for improvement are:

- Birmingham to Nottingham (via Derby);
- Birmingham to Leicester;
- Coventry to Leicester;
- Crewe to Nottingham (via HS2 Toton Station); and
- Thames Valley to the East Midlands and West Midlands via Coventry and Birmingham Airport.

Network Rail, on request from Midlands Connect, is currently **undertaking some high-level assessment of what might be possible to achieve on these corridors**; which will feed into the Midlands Connect Strategy. We will prepare Strategic Outline Business Cases for these options by March 2017, with an expectation that during 2017 further work will include an Indicative Train Service Specification and a constraints analysis before undertaking the five specific corridor studies; needed to understand the total infrastructure requirements. The output of this piece of work will inform a detailed specification for scheme development each corridor in line with the rail industry GRIP process.

4.5 Smart and Digital Connectivity Quick Wins

We are developing some ‘quick win’ schemes which can **deliver benefits within three years**, without requiring significant policy or regulatory change, whilst building towards the future vision for smart connectivity in the Midlands Connect region.

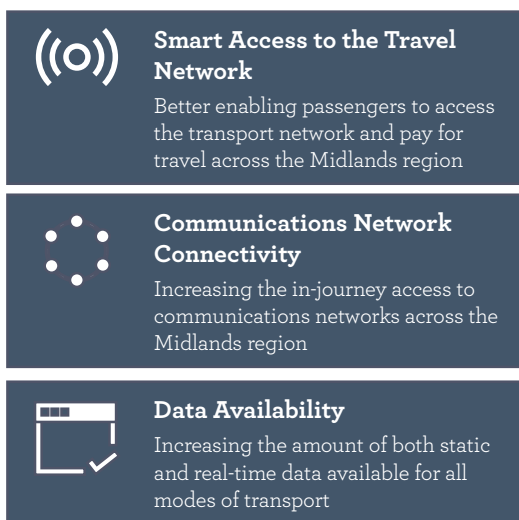
These quick wins, set out in Figure 14, cover three related areas and will provide tangible benefits to passengers, businesses and the economy. They support and set the groundwork for improvements that are necessary to enable the transport networks of the future, which will be quite different to those of today (e.g. the introduction of Mobility as a Service).

They will ensure that, where possible, benefit is extracted from past investment. For example, the development and facilitation of an open data platform which will harness information from existing sources so that at any time, everyone knows how the performance of the transport network is affecting their business, their journey or their plans to make future journey or goods movements.

Whilst there are existing applications available, at present the full potential of the available data sources and uses is not being harnessed.

Alongside the quick wins we will undertake focussed research projects and continued strategy development to support the longer term ambitions for Midlands, and UK, travel.

Focus Areas



Benefits

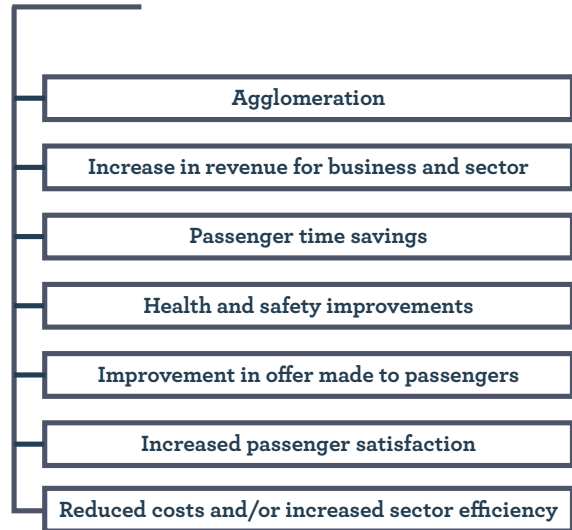


Figure 14 Smart and Digital Connectivity Quick Wins and Benefits

4.6 M5/M6 Junction to M6 Junction 10A and M42 Junctions 4 to 7 (Shirley to M6)

Whilst the longer term planning issues are considered within the Midlands Motorway Hub study there is a compelling case to get on and develop solutions to these two pinch points on the existing network that cause problems for businesses nationally.

These two schemes can be designed to fit with the longer term considerations on the future of the Midlands Motorway Hub that the wider study will provide. However we want to see work begin immediately on solutions to these pinch points to ensure that, if a case can be made, they can be delivered before HS2 arrives in 2026.

4.6.1 The M5/M6 junction and M6 junction 8 to 10A

This section of the network is one of the most congested in the country and causes significant delays to people and freight travelling both regionally and nationally. Annually there are almost two million hours of delay on this section of the network alone⁸. There are limited alternative routes that can be used during heavy congestion and incidents causing significant issues for traffic and the high volumes of freight that use this section. With its location at the heart of our manufacturing sector it causes significant disruption to supply chain and customer market connections.

4.6.2 M42 – Junction 4 to 7 (Shirley to M6)

A reliable M42 is critical to the UK's continued success. The M42 between J4 and J7 is critical to national freight movements, business and personal travel. The route caters for strategic traffic who use this corridor to travel between London and the North West, and from the ports in the South West, to the north. In the regional context, Jaguar Land Rover, Birmingham Airport, The NEC and HS2 each have significant growth aspirations, and the M42 must continue to evolve to provide adequate capacity.

Each year there are over 1.5 million hours of delay on this section⁹. With the scale of development planned at UK Central (up to 100,000 new jobs) alongside the arrival of HS2 there is a critical need to provide sufficient capacity to allow the M42 continue to fulfil its national role whilst, at the same time, getting people and goods into this location.

Whilst the upgrade to the junction has been announced it is imperative for both regional and national interests that there is a longer term strategy to ensure this route continues to work efficiently. Options to facilitate increased capacity through widening between junctions 4 and 7 should be developed and taken forward alongside the planned junction improvements.

4.7 M6 Smart Motorway Junction 15-16, Including Junction 15 Upgrade

This section of the M6 provides a key local link to Stoke-on-Trent and has a **critical role as part of a national strategic route to the North West**.

There is **one remaining gap in Smart Motorway between junction 15 and 16** on the M6 following completion of the current programme. This section and the configuration of the junction itself already causes significant delays on the M6: it was only omitted from the current programme due to the complexity and cost of upgrading the junction. Upgrading junctions 15-16 will ensure that we maximise the investment from the current Smart Motorway programme and provide greater national reliability and resilience.

This is a scheme needed to deal with today's problems, as well as to support future economic growth. Northbound journeys on this section of the M6 are subject to significant variations in journey time—according to Highways England data, drivers will need to, on average, allow around 70% additional time to ensure they arrive on time if they are using this section of road¹⁰.

To maximise the significant investment already made in Smart Motorways we would welcome the development of this scheme alongside the preparation of investment programme for the next Road Period due to commence in 2020.

⁸Source Highways England HATRIS data 2014/15

⁹As 6 above

¹⁰As 6 above

5 Midlands in the Global Market

- Businesses in the Midlands have customers and supply chains across the rest of the Midlands, across the UK and across the globe.
- Effective regional, national and international transport connections are critical to business performance.
- Air connectivity is essential for businesses to thrive in a globalised economy. Access to the UK's ports is not only vital to the Midlands but to the UK as a whole.

5.1 The Midlands Airports

Air connectivity is essential for businesses to thrive in a globalised economy. UK trade value by country is highly correlated to the number of passengers travelling for business purposes, emphasising the indispensable nature of airports as enablers of international growth of UK businesses.

Improving access to support passenger growth is essential in opening up wider business travel destinations, particularly to the Americas and the Far East.

Birmingham Airport is the seventh largest airport in the UK and third largest outside London, with a catchment area of over eight million people within a one hour travel time. The airport currently serves 10 million passengers per year, with an ambition to grow to 27.2 million passengers by 2030.

The airport's economic impacts are estimated to be £113 of GVA per passenger; and 2.6 jobs in the Midlands for every 1,000 passengers. These impacts are in a similar bracket to developments such as HS2 in terms of driving the economy. **East Midlands Airport** is the 11th busiest passenger airport in the UK, handling over four million passengers per annum. It is also the UK's leading freight-focused airport. The location of the airport benefits both passenger and cargo markets, with 11.6 million people living within a 90 minute drive. The airport's masterplan states that the airport could achieve a passenger throughput of 10 million passengers per annum between 2030 and 2040.

Midlands Connect is supportive in principle of the D2N2 Local Enterprise Partnership proposal for a 'rapid transit' network linking Derby, Nottingham, the HS2 station at Toton and East Midlands Airport. A network of this type would dramatically improve non-car surface access to the airport. Examination of enhancing rail services to East Midlands Parkway would be required in tandem with the rapid transit proposals.

5.1.1 Options under consideration: Surface Access to Birmingham and East Midlands Airport

There are **targeted transport measures that we are considering** that could improve surface access to the airports for passengers including:

- improvements in the road and rail networks between the Midlands hubs and the airports;
- improve junction access and/or direct highways links to East Midlands Airport from A50/A453/M1;
- improve public transport connections between East and West Midlands cities and Birmingham/East Midlands airports; and
- maximise the opportunity of HS2 to reduce travel times by rail to the airports.

Through **joined-up collaboration between airports and airlines**, marketing & promotion of air services and raising awareness of the Midlands as a destination this will help secure:

- improvements of air connectivity to main North American business centres;
- operating routes to European hubs that would allow an increased connectivity to North America without introducing back-tracking to passengers' itineraries.

5.2 Access to Ports

Businesses in the Midlands have customers and supply chains in the Midlands, the rest of the UK and across the globe. Effective regional, national and international transport connections are therefore critical to business performance.

Access to the UK's ports is clearly vital both to the Midlands economy, and with 17% of UK exports, to the UK as a whole.

In this section we discuss access by road to the four ports which are most important to Midlands businesses: Felixstowe, Haven Ports, Holyhead and Immingham. Access to other ports including to Bristol, Liverpool, Southampton and London is being examined within the context of broader highway and rail connectivity.

5.2.1 Options under Consideration – Access to Felixstowe and Haven Ports

The A14 provides a strategically important route for freight traffic between the Midlands and Felixstowe / Haven Ports. It is heavily-trafficked, prone to congestion around key centres and has poor resilience to incidents due to its largely sub-standard design. Varying standard of route leads to congestion hot spots creating long and unreliable journey times adding to the direct and indirect costs to freight movements.

An upgrade to the A14 between Junctions 3 and 10 (noting the planned improvements between Fen Ditton and Cambridge) would improve journey times and journey time reliability to the eastern ports. It would also aid movements within the Midlands through providing access to growth locations such as Kettering East (3,000 jobs) and Wellingborough (3,700 jobs) and assisting strategic movements north to south via the A6 to Leicester and Luton. It will support the forecast growth in the logistics sectors, centred on the 'Golden Triangle' (bounded by the M69, M6 and M1 Motorways).

Further, an enhanced A43/A45 corridor would offer connectivity improvements to these ports from the South East Midlands via the A14. Northamptonshire has the highest proportion of employment in the logistics sector (18%), reflecting the competitive advantages offered by its location at the heart of the UK road. Northampton is also forecast to experience some of the highest growth in manufacturing, driven by a focus on advanced manufacturing and there are a number of strategic growth sites on the A43 corridor including Silverstone (8,400 jobs by 2021) and Northampton Waterside Enterprise Zone (8,580 jobs).

However, the A43 suffers from congestion at a series of at grade junctions along with significant congestion

in the Northampton area on the A45. We are currently examining options to address these challenges through the upgrading of the A43 to Expressway (between M40 and the M1) combined with the further dualling of the A45 between Northampton and Kettering, which will facilitate better links to the A14. Given the growth forecast in Northampton, we are also assessing the potential for an alternative route around the north-west of Northampton. We are also considering upgrading the A45 corridor between the M1 and A14.

5.2.2 Options under consideration - Access to Holyhead Port

Beyond the M54, there are several single carriageway sections on the A5 / A483 corridor towards the A55 and Chester, which are thought to contribute to North Wales / Holyhead bound traffic using the Midlands Motorway Hub, M6 and M56 corridor.

We are examining extension of the M54 to at least Shrewsbury, and alternatively the creation of an Expressway route (i.e. grade separating several junctions around Shrewsbury to provide a high quality continuous link between the M54 and the A55). Both options could bring benefits to the M6 corridor if the M54/A5/A483 offers a better route for Holyhead traffic.

5.2.3 Options under consideration – Access to Immingham Port

We are examining options to improve connections from Lincoln to the port of Immingham. In evaluating and forming our full strategy the interaction between all three options will be considered and balanced.

Routes from the A46 corridor to the Immingham area are indirect and/or inconsistent with the quality of route on the remainder of the A46. Both the A46 and A15 corridors north / east of Lincoln are single carriageway which means freight to and from Immingham is heavily reliant on the M180 and M18.

We are examining the dualling of the A15 between Lincoln and the M180 and the upgrade of the A46 between Lincoln and Winthorpe to Expressway in order to assess whether this provides a more viable alternative to the M180 corridor. This could enhance network resilience and support access to a series of growth locations in this vicinity including Lincoln Science and Innovation Park (1,500 jobs).

6 The Midlands as a National Transport Hub

- The Midlands acts as the hub for national rail and road movements of both people and goods.
- We have developed a range of transport options that could maximise their national and regional benefits, creating fairer opportunities for all.
- Our full strategy in March 17 will set out the phasing and sequencing for their development and delivery.
- Further development funding will be then needed to take these options forward to full business cases for investment.

The Midlands is a transport hub for national rail and road movements of both people and goods. A better connected Midlands will lead to a better connected and economically stronger UK.

This section describes potential components of our Emerging Strategy that would improve the performance of the strategic networks to the benefit of journeys within the Midlands as well as journeys through the Midlands.

6.1 HS2 Released Capacity and Classic Compatible Services

HS2 will transform rail travel by providing new high speed services to the Midlands. An additional benefit of HS2 is the potential it brings to use released capacity on the classic rail network, and spare capacity on the high speed network, to run new regional and long-distance rail services.

We are currently examining a range of options to identify which have the highest economic potential. The options that we are developing more detailed business case work are included within figure 15.

This work is still underway, and our preferred options will be set out in detail next March.

6.2 Midlands Motorway Hub

The M42, M5 and M6 motorway box around Birmingham is critical to the national road network.

High traffic volumes, which are forecast to increase still further, lead to long and unreliable journey times for commuters, business users and freight which act as a barrier to economic growth and productivity gains.

In addition, with several elevated sections a long term maintenance and resilience challenge presents itself which needs to be considered in order to ensure the long term connectivity requirements of the nation are sustained.

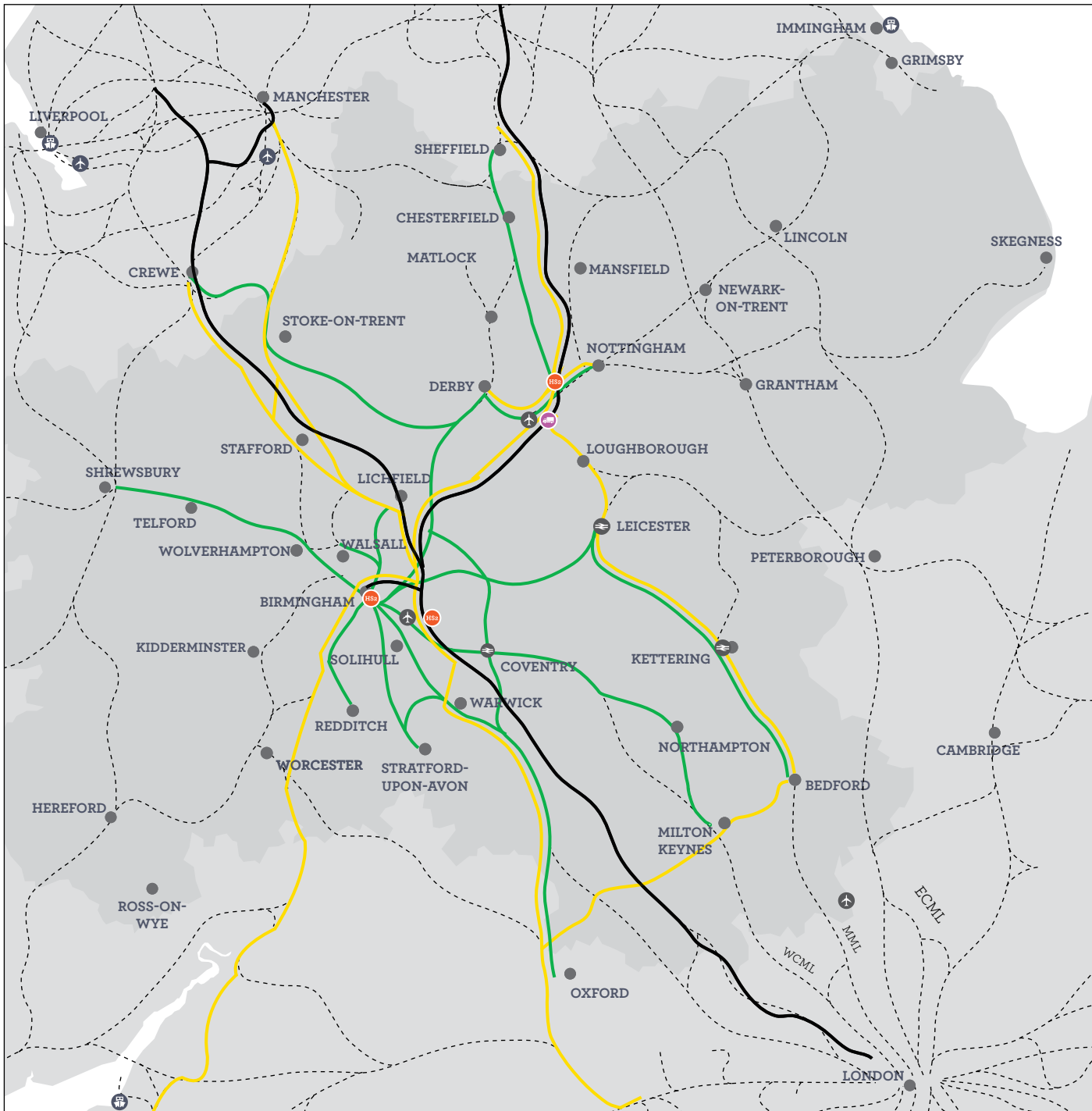
6.2.1 Options under Consideration – Current Pinch Points

We are about to begin a major study with Highways England into strategic options for the Midlands Motorway. In advance of this study reporting, we are assessing a number of shorter-term options which could be delivered more quickly. See Section 4 for further details.

6.2.2 Wider Strategic Solutions

Relieving pressure on the whole of the Midlands Motorway Hub will be an important outcome in the short, medium and long term. We aim to achieve this through a combination of conventional and innovative solutions to address the volume, routing and impacts of regional and national traffic using the Motorway Hub. The study will **ensure we plan for the ongoing role motorway hub facilitating the national and regional movement of people and goods.**

HS2 Released Capacity and Classic Compatible Options under consideration



- HS2
- Released Capacity - New services on existing network
- Classic Compatible - Services capable of operating on high-speed line and existing network

Figure 15

6.3 Getting the best out of our current networks

We are mindful that we can make progress in the short term whilst we develop and plan longer-term infrastructure and new service proposals. For example, the Smart and Digital Connected measures set out in Section 4 will enable us to continue to inform travel choices and encourage modal shift. Through better integrated and Smart Ticketing, more flexible products and dynamic travel information, we can ease peak travel and encourage passengers to travel outside of the peak – supporting national and regional commuter, business and freight movements.

Complemented by local public transport, parking and demand management strategies, Smart and Digital Connected measures can provide much needed breathing space whilst we develop our longer term measures within this strategy.

6.3.1 Joined up management of the strategic and key routes

One specific additional area we have identified is that we could link together our control centres and information to achieve a lot within a 3-5 year time period.

If we can effectively link together Highways England and local highway control centres we can make dynamic use of the whole network for re-routing when there are incidents. Furthermore, we can ensure information on the events, alternative routes and likely clear up times are available to those travelling and those about to travel via variable messages, satellite, media and apps.

Through providing open data there is the potential for third parties to further assist – for example, your app or navigation device will warn you of the incident up ahead and provide incentives/discounts at the nearest service station where you can work whilst waiting for the congestion ahead to clear.

We want to secure funding to allow us to progress with bringing together systems, protocols and data across the Midlands which could provide a significant boost to those travelling on our networks.

6.4 A5 – Rugby - Cannock

The A5 between M6 Junction 12 (west of Cannock) and the M6/M1 (close to Rugby) offers the potential to provide a strategic alternative to the Midlands Motorway Hub for people and freight travelling between London & the South East and the North West. In addition this section of the A5 provides an alternative routing option for accessing opportunities between the Marches, Black Country, Greater Birmingham and the East Midlands.

Section 6.2 details the challenges facing the Midlands Motorway Hub. In addition the A5 corridor itself is anticipated to experience growth in demand from advanced manufacturing and logistics developments such as the MIRA Enterprise Zone & Technology Park (2,000 jobs), phase 3 of DRIFT near Daventry (9,000 jobs) and the 11,000 jobs anticipated at Magna Park in Lutterworth.

6.4.1 Options under consideration

Potential options for the A5 corridor include a new offline alignment and an online upgrade of the existing A5 to Expressway. The options are currently being assessed to understand which deliver the greatest potential to deliver a strategic alternative to the Midlands Motorway Hub and support more local objectives. Key to this will be providing a consistent route standard across the corridor. A range of options will also be considered in and around the M69 area. The preferred approach is dependent on the outcome of options on the M1 in the East Midlands, and the anticipated acceleration and delivery of growth sites in the area. In evaluating these options we will consider the links to the Midland Motorway Hub study and the role of the M6 Toll given the geographical proximity of the two corridors.

6.5 M6 Corridor to the North - Stoke Hub

Stoke, Derby, Nottingham, Birmingham, Coventry and Leicester all have strong manufacturing sectors and the linkages between these centres are therefore likely to support supply chains. Of these centres, Derby is forecast to experience the greatest growth, driven by advanced manufacturing. Given these interactions it is essential that there is effective and resilient highway connectivity, and also to support the jobs anticipated within the wider Midlands and, in particular, the Stoke & Staffordshire Hub.

The strategic highway network in the vicinity of the Stoke Hub can be very congested, resulting in poor journey time reliability. Poor conditions on the A34 and A500 can be exacerbated when incidents occur on the M6. Long and unreliable journey times on the A50 west of Uttoxeter into Stoke-on-Trent also result in long planned journey times, adding significant direct and indirect costs to businesses.

6.5.1 Options under consideration

We are examining better and more reliable highway linkages between the Stoke hub and the strategic centres in the Midlands and the north (such as Manchester and Liverpool). This includes enhanced journey connections to both Derby and Nottingham through an A50 Expressway, and an assessment of improved southward connectivity through a new link road from the A50 to the M6.

On the M6 itself the completion of the M6 Smart Motorway Junctions 15-16 and the associated improvements to the A500/A519 will support achievement of the conditional outputs in the short to medium term. To ensure the M6 corridor continues to facilitate access to the South and North we are also considering the long term requirements for both the M6 and A34 and A500. Connections to the HS2 station at Crewe via the A500 are being considered in order for the Stoke & Staffordshire hub to maximise its access to the opportunities of HS2.

6.6 M1 and A1 (M) Corridors

We are examining better and more reliable highway linkages between the Stoke hub and the strategic centres in the Midlands and the north (such as Manchester and Liverpool). This includes enhanced journey connections to both Derby and Nottingham through an A50 Expressway, and an assessment of improved southward connectivity through a new link road from the A50 to the M6.

On the M6 itself the completion of the M6 Smart Motorway Junctions 15-16 and the associated improvements to the A500/A519 will support achievement of the conditional outputs in the short to medium term. To ensure the M6 corridor continues to facilitate access to the South and North we are also considering the long term requirements for both the M6 and A34 and A500. Connections to the HS2 station at Crewe via the A500 are being considered in order for the Stoke & Staffordshire hub to maximise its access to the opportunities of HS2.

6.6.1 Options under consideration

The M1 plays a crucial role in providing national strategic highway connections between London and the North, including centres such as Leeds and Sheffield. In the Midlands it connects the hubs of Coventry & Leicester and Derby & Nottingham that are forecast to generate over 90,000 jobs from the strategic growth sites.

Milton Keynes and Northampton are two of the areas forecast to see some of the largest growth in both the

business and professional services and logistics sectors. Further, the M1 is vital to the competitive advantage enjoyed by businesses of the 'Golden Triangle' in terms of strategic connectivity.

Greater Lincolnshire currently has the joint highest proportion of people in the Midlands employed in the manufacturing sector. Therefore, access to markets and international connections are important in order to sustain the export of goods and the M1 is a key route to market for these businesses.

The M1 corridor suffers from poor journey reliability caused by high traffic volumes and, in some cases, closely spaced, particularly in the East Midlands. The variable standard of route on the parallel A5 corridor means that it is a poor diversionary route during times of disruption on the M1. The persistence of long and unreliable journey times in this area results in even longer planned journey times for road users, especially freight, adding significant costs to businesses.

The A1 provides important access from peripheral locations within the East Midlands to London and the South East, Felixstowe (via the A14) and Immingham which need to be supported to assist productivity and reduce costs.

6.7 A46/M69 Corridor between the South West, Coventry, Leicester, Newark and Lincoln

The A46 corridor provides a key link from the South West and Wales to the port of Immingham.

We are considering options to provide a key trans-national route, potentially from M5 Junction 9 at Tewkesbury to the M6/M69/A46 interchange at Coventry, to Leicester, Newark, Lincoln and the port of Immingham.

An enhanced, resilient route would support the strong manufacturing sector in the Worcestershire and Coventry & Warwickshire LEP areas which are currently constrained by its relative peripheral location from the rest of the Midlands and the high seasonal flows of traffic and congestion on the M5. An enhanced route would also support manufacturing in Lincolnshire, a rapidly growing manufacturing base in Leicester; strategic growth sites along the A46 (over 2,500 jobs) and the development of the MIRA Enterprise Zone & Technology Park (2,000 jobs).

Connections within the Coventry and Leicester hub will also be examined with the aim of supporting greater economic interaction (and therefore productivity benefits) between these two locations.

Improvements to the A46 corridor could provide a strategic alternative to the M5 corridor north of Tewkesbury, through Worcestershire up to the Midlands Motorway Hub, therefore relieving congestion and reducing the cost of travel in this vicinity.

The A46 also offers the potential to provide relief to the M1 as an alternative route to Nottingham, Yorkshire and the Humber Ports. However, given the varying standard of route (single to dual to motorway standards) within this corridor it is currently not a viable alternative to the motorway network for strategic south-west to north-east journeys.

6.7.1 Options under consideration

We are currently examining options to upgrade of the A46 between M5 Junction 9 (Tewkesbury) and the M6/M69/A46 interchange at Coventry to Expressway standard to provide a viable alternative for traffic travelling from the South West and Wales to the North East. This has the potential to relieve pressure on the Midland Motorway Hub as well as providing improved connectivity for people and freight from the South West & Wales to Coventry, Leicester and beyond.

We are also considering a range of options for the A5, including how they would interact with the M69. The preferred approach is dependent on the outcome of options on the M1, and the anticipated acceleration and delivery of growth sites in the area.

In providing a viable strategic alternative, the provision of a consistent standard of road along the whole corridor is essential. We are therefore assessing the upgrade of the A46 to Expressway from the M1 to Lincoln along with an alternative route to the south and east of Leicester which would provide an important national connection and support a series of strategic growth sites in the area.

6.8 Rail Improvements between East Midlands to the North of England

A significant number of new jobs could be generated in Nottingham and Derby (38,000) and Leicester and Coventry (55,000). Many of these are focused on city centre locations in business and professional services. There is a strong case for improving productivity in these city centre locations by improving rail connectivity between them, and to cities further north such as Sheffield and Leeds.

Currently, rail services between the East Midlands (particularly Leicester and Nottingham) and Sheffield /

Leeds are poor. The same is true of connections to some other core cities which could impact on productivity and the ability to attract higher-value inward investment in Nottingham and Leicester.

6.8.1 Options under consideration

We are examining options to operate new rail services to the North of England from existing central stations, via East Midlands HS2 station at Toton, making use of some spare capacity of HS2 eastern leg. These 'classic compatible' services would enable fast, direct journeys between, for example, Leicester and Leeds. We are also considering compatible services operating into Nottingham and Derby through Toton, reducing the need for interchange at Toton. The constraints of Trent Junction will be considered as part of this work.

6.9 East & West Midlands Rail access to Thames Valley and the South East

Midlands Connect business surveys have highlighted the importance businesses place on connections to Heathrow. Nottingham, Coventry, Leicester, Milton Keynes and Birmingham (including the Black Country & Solihull) Primary Urban Areas (PUAs) are some of the areas forecast to see the largest growth in the Business & Professional Services sector over the forthcoming years. Joining these locations to the South East economy will bring large productivity benefits.

Currently there is poor rail connectivity between the Thames Valley and East Midlands (to some extent improved once East-West Rail opens) and to Heathrow Airport from both East and West Midlands (partially addressed through proposed HS2 station at Old Oak Common, with fast connections to Heathrow Airport). Rail connections are also very poor between the cities of Leicester and Coventry with currently no direct service. Overcoming these challenges will make a considerable contribution to achieving our Conditional Outputs.

6.9.1 Options under consideration

Midlands Connect supports the Coventry-Leamington capacity scheme identified in the consultation draft West Midlands and Chilterns Route Study. This scheme will maximise the use of available rail capacity in Birmingham after Phase1 of HS2 opens in 2026. It will also improve connectivity from Coventry and Birmingham Airport to the Thames Valley, South Coast and Heathrow.

We are now assessing options to improve connections to the Thames Valley and Heathrow via the proposed 'Heathrow Western Access' and the benefits which could be achieved through the progression of a range of schemes including Kenilworth line double tracking and the re-routing of Cross Country Services to better serve Coventry and Birmingham International or Solihull.

Two issues which need careful examination are the capacity constraints at Coventry station and the feasibility of the Nuneaton fly-over/dive under to facilitate the direct connections between Leicester and Coventry and beyond. Addressing Coventry station will also offer the potential to provide additional service options to Milton Keynes and South East, taking advantage of the released capacity offered by HS2 and facilitating business and professional services between the key centres.

A longer term option is the interaction between HS2 Phase 1 south of Birmingham Interchange and the potential to deliver classic compatible services via the Chiltern Line to also enhance Thames Valley connections further.

6.10 Links to South West and Wales – Road and Rail

6.10.1 Road options under consideration

Road travel conditions to the South West are impacted by high seasonal flows on the M5 corridor in particular and poor access towards Hereford from the M5, including delays due to several junctions on the south side of Worcester. Long and unreliable journey times result in long planned journey times, adding significant direct and indirect costs to business. The relatively peripheral location of Hereford impacts on business efficiency in the area.

We are examining road options to deliver improved connectivity to the South West, including the centres of Hereford and Worcester. This includes improvements to the Worcester southern ring road in order to provide improved links within this south western corridor to locations such as Hereford.

Consideration is also being given to a new bypass for Hereford (as part of the Hereford Transport Package) to relieve the strain on the A49 through the city, assisting growth at the Hereford Enterprise Zone (4,200 jobs) and facilitating the strategic movement of goods through the Marches. The Hereford southern link (part of the South Wye Transport Package) is the first phase of the bypass.

In addition, further improvements at M5 Junction 6 above and beyond those currently proposed by Highways England in the current RIS are being identified to support growth at Worcester Technology Park (5,000 jobs by 2031), and to prevent strategic access to the South West through congestion on the M5.

6.10.2 Rail options under consideration

Our work has identified the agglomeration potential of improved connections between Hereford, Worcester and Birmingham. There is also a strong economic case to improve the connections between Cardiff, Bristol, Birmingham and the East Midlands given the strength of the business and professional services sectors in these locations.

We are therefore assessing the potential for rail journey time improvements from Hereford and Worcester to Birmingham; and the benefits which could be achieved through the Midlands Rail Hub scheme in conjunction with line speed and junction improvements in the Worcester area.

Better rail connectivity between Worcester and Bristol is also being explored, as is the potential for HS2 classic compatible services from Bristol to Birmingham and the North of England in order to strengthen the strategic links between the key centres for business and professional services.

7 Moving the Nation's Freight

- The Midlands is the UK logistics centre.
- 33% of GB road freight is to, from, within or through the Midlands.
- 45% of GB rail freight is to, from, within or through the Midlands. We have pinch points that need short term solutions now.

The Midlands is the centre of the UK logistics sector, accounting for approximately 20% of UK jobs and GVA. In addition, the Midlands transport networks are critical to the success of the sector as a whole: a third of all UK road freight travels to, from, within or through the Midlands.

Many UK companies have their National Distribution Centres in the Midlands and there are more planned.

Reliable journey times on the strategic road network are needed if the Midlands is to remain the national logistics hub. Businesses need to ensure efficient use of fleet and to ensure 'just in time' delivery slots are met. Minimising the unpredictability of journey times will allow businesses across the UK to operate more efficiently and reduce costs.

The Midlands rail network is also critical for freight: nearly half of all UK rail freight travels to, from, within or through the Midlands with key routes connecting to ports at Felixstowe and Southampton.

East Midlands Airport is the UK's leading freight-focused airport. The location of the airport is also key to the future growth of the air cargo market. It is the major mail airport in the UK, with express freight operators providing international next-day delivery, made possible through overnight aircraft operations and surface connectivity. Cargo handling is forecast to increase from 300,000 tonnes in 2013 to up to 700,000 tonnes in 2040 and air cargo movements are expected to grow from 23,800 movements in 2013 to 42,600 by 2040.

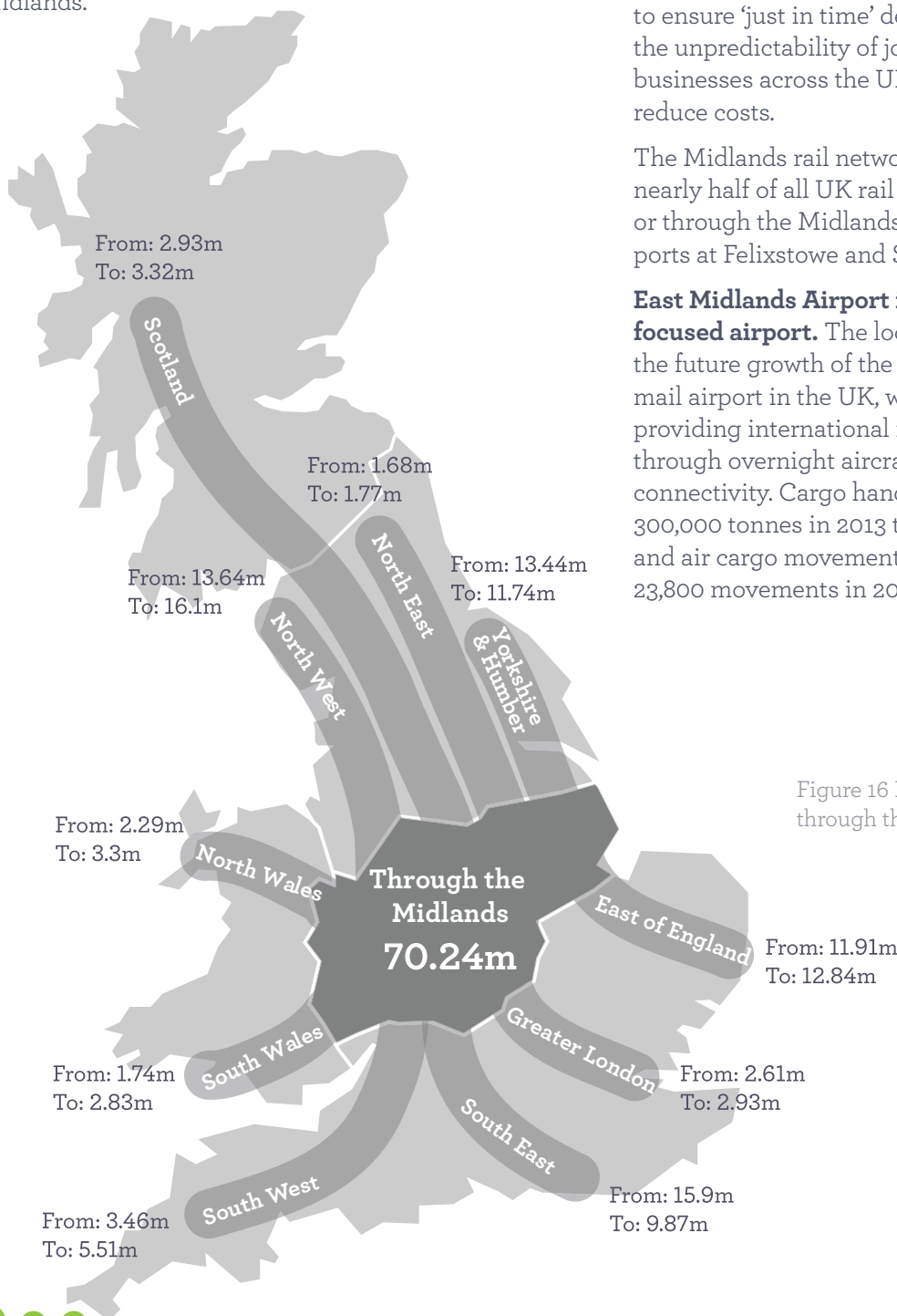


Figure 16 Road freight flows through the Midlands

According to recent research, half of UK construction firms have said delays due to transport problems are frequently impacting projects. The study was carried out by the Chartered Institute of Building (CIOB) and it found that 78% of respondents said logistical problems resulted in delays to the completion dates of projects, while 41% said they hit profitability.

Many of the options being considered as part of the strategy, as described above, will benefit the freight sector. We are flagging these issues up in the relevant sections and the summary table in Appendix A of this report.

In addition, we are still working on identifying options which specifically address freight challenges and enable growth in relevant sectors. However, there are two emerging areas that we focussing on (described in Section 7.1).

7.1 Options under Consideration

Poor peak and off-peak motorway reliability particularly affects freight.

Unreliable journey times lead to extra ‘planned’ journey times to ensure agreed time slots are met. The net impact is a less efficient and productive distribution sector than if we could provide ‘guaranteed’ journey times. Access to accurate and reliable network information will help freight and logistics operators and other transport related businesses to plan journeys more reliably and react more effectively to unplanned events.

Using technology will play an important part of this, particularly in the short-medium term, whilst infrastructure solutions are under development. Our Smart and Digital Connectivity “quick wins” set out in Section 4 will enable the full utilisation of the travel information to provide scheduling and routing solutions that will allow logistics to adapt and remain productive on the networks that we have.

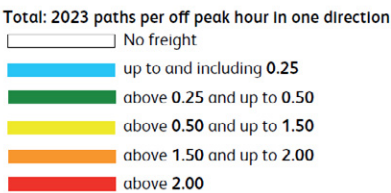
In terms of infrastructure, specific areas of focus in the short term are the M5 northbound, particularly between Junction 2 and the M6 to the west of Birmingham; and the M6 between Junctions 8-10. We are currently examining the case for these to be taken forward for early development and delivery.

There are wider connectivity issues to the Southampton port. We await the outcome of the Oxford to Cambridge Expressway Study in terms of any options for upgrading of the A34 corridor. Further issues may need addressing on the M40, we will be working with England’s Economic Heartland to ensure we can develop shared priorities for this corridor as we move towards our full strategy.

Rail Freight Capacity Improvements

Demand for rail freight is forecast to grow but there is currently limited capacity to support this across the Midlands. Failure to address this will hold back growth with associated impacts on the regional and national industries depending on this.

Figure 17 Network Rail Projections for Freight Paths 2023



In combination with the rail passenger options we are identifying options to address capacity:

- in the vicinity of Leicester station (Midland Main Line crossing);
- in the Trent Junctions area; and
- on the Water Orton corridor.

We are also in the process of reviewing the current Network Rail Freight Network Strategy to form a view on the importance and phasing of interventions within it alongside the emerging options for passenger services from our current strategy development work. In our full strategy in March 2017 we will be in a position to present our priorities from a Midlands perspective.

We are also considering options to:

- alter service patterns to use capacity in Central Birmingham more efficiently; and
- increase capacity on the route via Coventry and Nuneaton.

We want to encourage the development of Strategic Rail Freight Interchanges, recognising that they generate modal shift as opposed to serving a finite rail freight demand. We are reviewing existing and potential new proposals to identify gaps in provision and promote these opportunities in the full strategy.

Some schemes may require direct state investment in order to release sites. An example of such a site is Bescot, where there is a long standing ambition to deliver a rail terminal but investment in road access will be needed.

8 East-West Regional Connectivity

- Poor East-West connectivity has been consistently identified as a barrier to growing our economic hubs.
- Our strategy has identified a number of rail and road options to unlock our potential.
- Our full strategy will set out a multi-modal strategy aligned with national investment planned by Highways England and Network Rail.

The importance of east-west links, and their relatively poor performance at present, has been a recurring theme of our work to date.

The core of the Midlands economy is around Birmingham, Derby, Nottingham, Leicester and Coventry; and it is this area which is most important to Midlands' businesses in terms of the location of their clients, suppliers and workforce.

Bringing these economic centres closer together through better east-west road and rail connectivity will unlock growth, generate agglomeration benefits; and strengthen access HS2, airports and ports from across the UK.

We are considering options for east-west connections in the context of their wider role as part of the national rail and road networks including for example **access from Wales to the Midlands, the North and the Humber/Haven**. Our proposed programme of investment will benefit national strategic movements and regional movements at the same time.

We recognise the potential importance of the Oxford to Cambridge expressway study in generating schemes that will benefit connectivity for our partners in the South East Midlands Area. We will consider the findings of this study as we prepare our full strategy.

8.1 East to West Midlands Rail Connectivity

The Nottingham, Derby, Leicester and Birmingham hubs are forecast to see significant growth in the business & professional services sector over the forthcoming years. This therefore acts as a key driver for rail demand. There is a strong case to overcome some of the barriers to growth between these locations and encourage agglomeration.

Whilst HS2 transforms connectivity between cities in the Midlands and beyond we want to maximise the opportunities this investment brings by exploring connections from the HS2 network into the City centres of Leicester and Derby/Nottingham to further improve the economic interaction between these centres.

8.1.1 Options under consideration

We are appraising options for better east-west rail connections which will facilitate the greatest economic impacts. As a starting point we are examining the opportunities presented by new capacity in central Birmingham created by Midlands Rail Hub project. However, we are also examining where additional infrastructure improvements could enable further service enhancements (such as Trent Junction, route upgrades on the Leicester and Nottingham lines, upgrades between Shrewsbury and Wolverhampton and additional train capacity between Wolverhampton and Coventry). We are also considering the need for additional track capacity (such as four tracking) required to meet different outputs.

These options are being assessed in conjunction with HS2 classic compatible services between Nottingham and Birmingham.

In the South East Midlands area we recognise the importance of ensuring full delivery of the planned East-West rail that will provide a strategic railway connecting East Anglia with Central, Southern and Western England.

8.2 Nottingham/ Derby Hub (A52 / A453 / M1 J24)

The D2N2 LEP area has one of the highest proportions of employment in the business and professional services category, reflecting the importance of Nottingham to this sector. In addition, Derby is forecast to experience growth in manufacturing, driven by developments in the advanced manufacturing sector.

Options for improving the SRN in and around the Nottingham/Derby hub will support these sectors and also the strategic growth sites in the two cities which could be home to 38,000 jobs. In addition, are likely to have an important role in providing enhanced access to the proposed HS2 station at Toton.

8.2.1 Options under consideration

We are examining highway options to connect Derby and Nottingham via Toton in the form of an Expressway on the A52. This includes examination of the role of M1 Junction 25 and the need for new connections to Toton.

In facilitating better access to/from Nottingham the potential for a fourth Trent Crossing is being reviewed in conjunction with the A52 Expressway scheme from M1 Junction 25 to Nottingham.

The potential for improving access to East Midlands Airport and the M1 via the A50 is also being considered. Linked to the Stoke Hub this will also provide a high quality link between the Derby/Nottingham Hub and Stoke and Staffordshire Hub helping to facilitate manufacturing links between the two hubs.

Finally, as set out earlier in section 5 of this report, Midlands Connect is backing the development of a Mass Transit scheme identified as an early priority in the emerging HS2 Growth Strategy.

8.3 A42/A38

The A38 corridor has the potential to provide an alternative for long distance trips between the Midlands and the north of England which may currently route via the M42 / A42 / M1. It offers potential network resilience benefits for the M1 through the East Midlands and therefore supports strategic connectivity across the country. Options could reduce long and unreliable journey times in this area, reducing the associated direct and indirect costs for people and freight.

The A42/A38 provides the key strategic highway links between the East and West Midlands professional services and logistics sectors in Nottingham, Derby and Birmingham that are forecast to seeing significant growth. In addition to this growth sites at Drakelow Park (1,400 jobs) and the 11,000 jobs anticipated at East Midlands Gateway provide additional demand within the corridor itself.

8.3.1 Options under consideration

Consideration is being given to upgrading the A42 to motorway standard to provide a consistent route standard between Birmingham and Nottingham whilst also investigating the upgrade of the A38 to Expressway standard to remove bottlenecks and improve journey times and reliability.

8.4 Improvements on the Nottingham to Crewe to North West/Wales Rail Corridor

Improved rail connectivity between both the Stoke and Staffordshire hub and the Derby/Nottingham hub could act as catalysts for business and professional services in both economic hubs. Better connectivity to these hubs could also provide better access to the HS2 stations at Crewe and Toton, raising their potential to unlock the growth of higher-value, rail-focused sectors in North Staffordshire.

The North Staffordshire Line currently experiences chronic overcrowding which is a product of poor connectivity, frequency & limited hours of operation between the Stoke & Staffordshire and Nottingham & Derby hub.

8.4.1 Options under consideration

We are focusing on examination of the double tracking of the single line section between Stoke-on-Trent and Crewe to facilitate additional capacity and connections between the two centres and to the North West.

We are also considering the introduction of new infrastructure in the Toton / Trent Junctions area to allow for services to run via the Toton HS2 station. The combination of these options will provide improved access from the East Midlands to the North West (including Manchester and Liverpool) which currently acts as a barrier for growth due to the limited rail connections which currently exist.

8.5 Improvements on the Nottingham – Lincoln Rail Corridor

As set out in 8.2, the D2N2 LEP area is set to have one of the highest proportions of employment in the business and professional services sector. The relative peripheral location of Lincoln from the rest of the Midlands impacts on business productivity in rail-focused sector; better connections to Nottingham, Derby and Birmingham will overcome this and support growth.

Appendix B shows the high levels of overcrowding forecast between Nottingham and Newark if no action is taken.

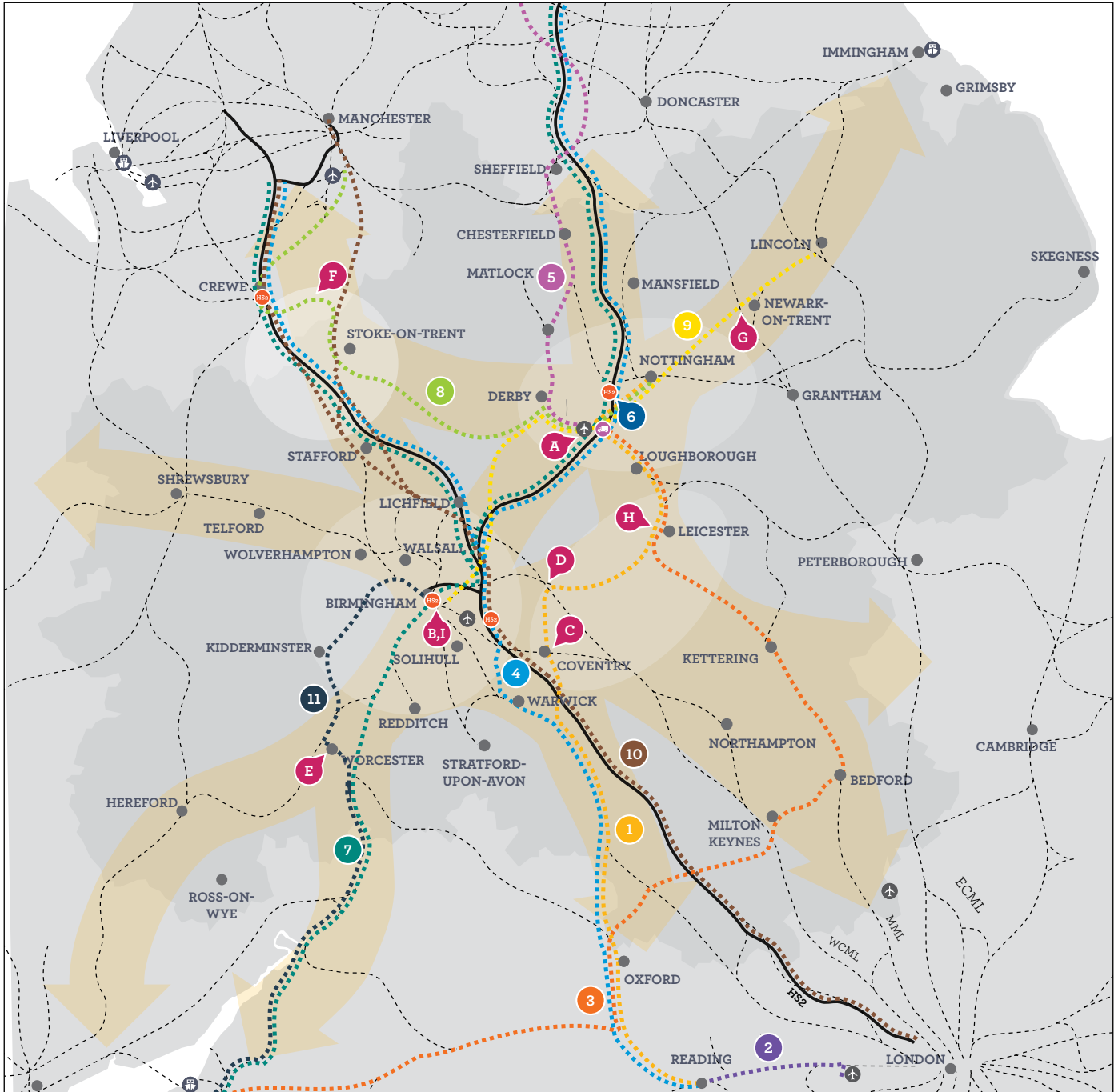
This corridor suffers from poor connectivity between Lincoln and the West Midlands with no services continuing west of Nottingham. There is also limited scope to increase frequencies / freight flows given the flat crossing of the East Coast Main Line at Newark.

8.6 Options under consideration

Options under consideration include a new rail flyover at Newark to remove the at-grade crossing of the East Coast Main Line. Work is also investigating the re-introduction of direct services between Lincoln and Birmingham.

We are exploring the potential benefits of faster connections to the HS2 Station at Toton along with improved provision for freight services to and from Humber ports.

Consideration of these options is being undertaken mindful of potential east-west rail options.

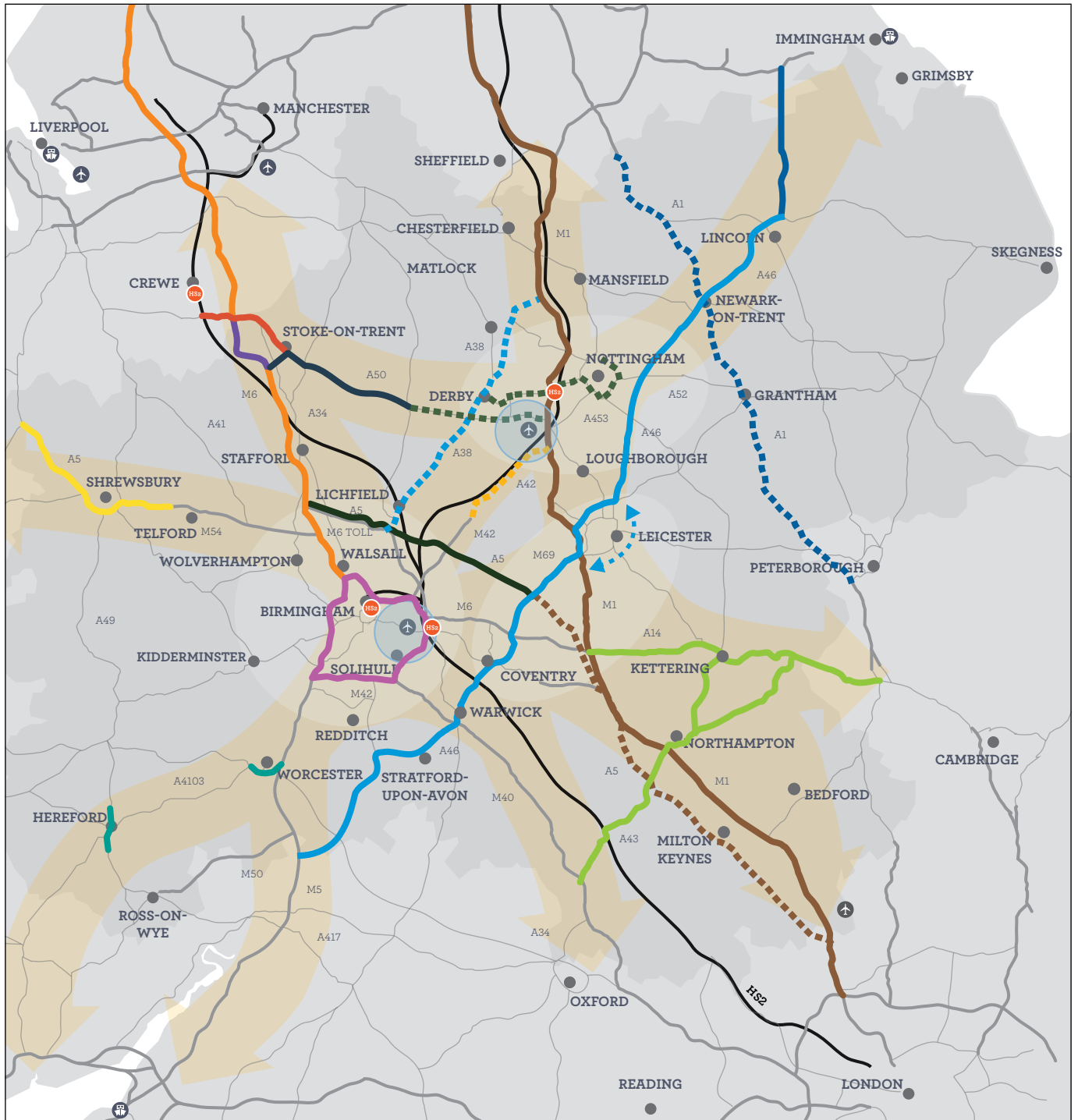


Major new service patterns

- 1 New services to the Thames Valley from the East Midlands
- 2 New services to Heathrow Airport from the Midlands
- 3 New services from the East Midlands to Bristol via E-W Rail
- 4 New classic compatible services into HS2 from the South of England
- 5 More frequent services on the classic network between the East Midlands and Leeds
- 6 New classic compatible services into HS2 at Toton (both north and south facing)
- 7 New classic compatible services into HS2 from the South-West
- 8 New services from the East Midlands to the north-west via the North Staffordshire Line
- 9 New services between Lincoln and Birmingham via Nottingham and Derby
- 10 New classic compatible services to Stafford and Stoke (and beyond) via HS2 and Handsacre Junction
- 11 New services into the West Midlands, through Worcestershire

Major new infrastructure

- A Trent Junction Capacity Enhancement (possibly grade separation of some movements)
- B Midlands Rail Hub (making several improvements in the Birmingham area, including works in the Bordesley area to provide new links to Birmingham Moor Street)
- C Wolverhampton to Coventry Capacity Enhancements (including work at Coventry to facilitate more south-north movements)
- D Nuneaton Capacity Enhancement (facilitating new direct services between Coventry and Leicester, and beyond)
- E Worcester Area Capacity Enhancement (facilitating improved service provision through the area, possibly requiring double tracking between Droitwich Spa and Stoke Works Junction)
- F Stoke to Crewe Capacity Enhancement (may require double tracking to facilitate further service provision along the North Staffordshire Line and beyond)
- G New flyover / similar at Newark (to grade separate the East Coast Main Line and the Newark Castle route)
- H Infrastructure improvements in the Leicester area (including potential quadrupling of the railway, new platforms at Leicester, a new diver under at South Wigston and dynamic freight loops on the line to Nuneaton)
- I Infrastructure improvements in the St Andrews area (to maintain freight capacity in light of several passenger aspirations)



Scheme for early Development and Delivery:

Midlands Motorway Hub (broad area shown - but priority areas include the M42 between J4 and J7, the M6 between J8 and J10 and the M5 / M6 interchange)

Options under consideration by strategy theme Midlands as a Global Player:

- Access to Birmingham and East Midlands Airports
- Access to Immingham
- Access to Felixstowe
- Access to Holyhead

National Transport Hub and Freight:

- Stoke to Crewe
- M6 Smart Motorway Junction 15-16 and Junction 15 upgrade
- M6 long term capacity enhancements (beyond Smart Motorway)
- M1 long term capacity enhancements (beyond Smart Motorway)
- - - May include enhancement of the parallel A5 corridor
- - - Upgrade of A1 to A1(M)
- A46 corridor upgrade (to at least expressway)
- - - May include bypass to south/east of Leicester
- A5 corridor between Cannock and Rugby

East-West Connectivity:

- - - A42 upgrade (to motorway standard)
- - - A38 upgrade (to expressway)
- - - Nottingham / Derby measures
- Stoke hub measures
- Worcester and Hereford measures

9 Sub-national Transport Body

In tandem with our strategy development work we are reviewing possible options for a Sub-national Transport Body (STB). Our work includes examination of the potential powers and responsibilities that could be devolved and shared; governance structures; and the potential benefits and disbenefits of a range of partnership models from informal to formal. This work is informing discussion across the partnership and, ultimately, will ensure the proposal that we submit to become a STB is truly the best option for both the region and the UK as a whole.

A starting point for this has been to identify how Midlands Connect, on a more formal footing, could add greater value to strategic transport planning process.

Gap in strategic planning	Description	Potential benefits of becoming a Sub-National Transport Body	Implications for statutory powers required
Route-based approach to SRN. Route-based approach to rail infrastructure programme development	Route-based approach does not necessarily align with Midlands Connect east-west connectivity challenges and routes disjointed across Midlands Connect area.	Enable clearer prioritisation of Highways England and Network Rail investment programme aligned to Midlands Connect strategic connectivity priorities.	A statutory STB can potentially have a formal input to RIS and LTTP process be enabled? An informal STB can only have an informal role.
Multi-modal perspective in planning and prioritising connectivity improvements.	Lack of alignment between road and rail prioritisation and development of integrated solutions.	Enable different and complementary multi-modal solutions to be developed.	Either a statutory or informal STB could provide a multi-modal perspective.
Lack of clarity on local authority main road network. Improvements to main road network would be prioritised by LEPs and delivered by LHAs.	Impacts on ability to prioritise investments in the non-SRN network. Does not necessarily align with Midlands Connect east-west connectivity challenges and routes disjointed across Midlands Connect area.	Enable clear prioritisation of main road network investment programme aligned to Midlands Connect strategic connectivity priorities and linked to SRN programme.	No powers required to agree main road network – but powers to identify and prioritise investment could be needed to influence/over-ride LEP prioritisation. These would come with duties re maintenance, etc.
Rail franchise geographies and specification.	Existing franchise geographies do not align with Midlands Connect east-west connectivity challenges and ability to influence franchise specifications disjointed across Midlands Connect area.	Better align franchise specification process to enable services to be developed and improved to meet Midlands Connect connectivity challenges (alongside road, rail and multi-modal approaches).	Potentially role as a consultee, negotiations with DfT would need to occur around conferring powers to redefine franchise scope and define franchise service specifications.

Alignment of other non-transport strategic planning functions.	SEPs and local plans not complementary across Midlands and do not maximise synergies with Midlands Connect strategy.	Co-ordinate and enforce strategic consistency of SEPs and plans and ensure transport strategy aligned.	Status as a statutory STB would entail role as a formal consultee to make these points, and a requirement for other authorities to take account of STB's strategy.
Complex engagement processes and limited accountability for representing Midlands Connect priorities.	The complex set of different processes, multiple and often overlapping stakeholders prevent effective engagement on pan-Midlands connectivity issues and constrain Midlands Connect perspective effectively influencing delivery bodies.	Single voice for pan-Midlands transport connectivity priorities maximises opportunity for delivery bodies to respond to Midlands Connect needs.	Could be achieved through partnership and delegation of existing powers – may not need new powers.

10 Conclusions

This report reinforces the importance of the Midlands to the UK.

Our mission is clear: to unlock our economic potential on a global, national and regional scale.

Unlocking connectivity in the Midlands, unlocks economic potential for us all.

The challenge facing us is to secure sustained economic growth in these uncertain times. Supporting our manufacturing heartland, food production, export markets, medical science and finance and business sectors will be essential in shoring up and expanding our economic strengths.

This Emerging Strategy sets out the benefits that we can deliver through a programme of strategic transport investment that unlocks economic growth at a national and regional scale. As part of this we are considering options for using smarter technology to maximise the capacity that we have across the region.

By getting goods and people where they need to be, when they need to be, we can unlock our potential and create new opportunities.

The Midlands acts as the transport hub for the UK's transport network, meaning the economic benefits of getting the Midlands moving will be shared across the nation.

Unlocking connectivity in the Midlands, unlocks economic potential for us all.

We are now exploring the options and case for investment ahead of **publishing the Midlands Connect Strategy in March 2017.**

Our work will pay specific attention to how we can maximise the economic benefits as part of the government's emerging Industrial Strategy.

The Midlands Connect Strategy will include a programme of scheme development and delivery in 5 year phases for the next 20-30 years. This programme will need to be kept under review and updated periodically.

As part of the wider Midlands Engine offer, our Midlands Connect Strategy will make a real difference to the lives of those living and working both in the Midlands and across the country as whole.

11 NEXT STEPS

Action	By When
Submission of Strategic Outline Business Case for Smart and Digital Connectivity	Autumn 2016
Midlands Rail Hub – proposition for development funding	Autumn 2016
Development of Strategic Outline Business Cases	Spring 2017
Development of Sub-national Transport Body Proposition	Spring 2017
Full Midlands Connect Strategy	March 2017
Midlands Motorway Hub – Study to inform RIS2	Summer 2017
Midlands Rail Hub – commencement of scheme development (subject to government approval)	April 2017
Smart Connectivity Programme Initiation (subject to government approval)	Winter 2017

Appendix A Summary of options under consideration

Scheme Type	Intervention	Linkages to Themes					Potential Cost Range (including sub options)		
		Global	National	Freight	E-W Midlands	HS2	<£50m	£50m-£250m	>£250m
Scheme for Early Development and delivery									
Existing government Commitment	MML Electrification completion RIS1 schemes - development in RIS1 and delivery in RIS2	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	n/a	n/a	n/a
Rail	Midlands Rail Hub	✓ ✓ ✓	✓ ✓ ✓	✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✗	✗	✓
Road	Midlands Motorway Hub	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✗	✗	✓
Road	M5/6 junction and M6 Junction 8-10A	✓ ✓	✓ ✓ ✓	✓ ✓	✓ ✓ ✓	✓ ✓	✗	✓	✓
Road	M42 junction 6 and possible widening M42 between junctions 4-7	✓ ✓ ✓	✓ ✓ ✓	✓ ✓	✓ ✓	✓ ✓ ✓	✗	✓	✓
Road	M6 junction 15-16 Smart Motorway and junction upgrade	✓ ✓	✓ ✓ ✓	✓ ✓	✓ ✓	✓ ✓	✗	✗	✓
Rail	East-West Rail development funding	✓ ✓	✓ ✓ ✓	✓ ✓	✓ ✓ ✓	✓ ✓	✗	✗	✓
Smart	Smart Access to the Travel Network	✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓	✓ ✓	✓	✗	✗
Smart	Communications Network and Connectivity	✓	✓ ✓	✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓	✗	✗
Smart	Data availability	✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓	✗	✗
Midlands as a Global Player									
Airports	Access to Birmingham and East Midlands	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓	✓ ✓	✓	✓	✓
Ports	Access to Immingham	✓ ✓ ✓	✓ ✓	✓ ✓ ✓	✓	✓	✗	✗	✓

Scheme Type	Intervention	Linkages to Themes					Potential Cost Range (including sub options)		
		Global	National	Freight	E-W Midlands	HS2	<£50m	£50m-£250m	>£250m
Ports	Access to Felixstowe	✓ ✓ ✓	✓ ✓	✓ ✓ ✓	✓	✓	✗	✓	✗
Ports	Access to Holyhead	✓ ✓ ✓	✓ ✓	✓ ✓ ✓	✓	✓	✗	✗	✓
National Transport Hub									
Road	Midlands Motorway Hub	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✗	✗	✓
Road	A5 - Cannock to Rugby	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓	✓	✗	✗	✓
Road	M6 Corridor to the North - Stoke Hub	✓ ✓	✓ ✓ ✓	✓ ✓	✓ ✓	✓ ✓	✗	✗	✓
Road	M1 and A1 (M) Corridors	✓ ✓	✓ ✓ ✓	✓ ✓	✓ ✓	✓ ✓	✗	✗	✓
Road	A46 Corridor - Leicester - Coventry Hub/M69 corridor between South West, Coventry, Leicester, Newark and Lincoln	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓	✗	✗	✓
Rail	Rail Improvements between the East Midlands to North of England	✓ ✓	✓ ✓ ✓	✓	✓	✓ ✓ ✓	✗	✗	✓
Rail	East & West Midlands Rail Access to Thames Valley and South East	✓ ✓	✓ ✓ ✓	✓	✓	✓ ✓ ✓	✗	✗	✓
Rail and Road	Links to South West and South West and Wales	✓ ✓	✓ ✓ ✓	✓ ✓	✓	✓	✗	✗	✓
Freight									
Freight	Off peak Reliability Measures	✓ ✓	✓ ✓	✓ ✓ ✓	✓ ✓	✓	✓	✓	✓
Freight	Peak Motorway Reliability	✓ ✓	✓ ✓	✓ ✓ ✓	✓ ✓	✓	✓	✓	✓
Freight	Rail Freight Capacity Improvements	✓ ✓	✓ ✓	✓ ✓ ✓	✓ ✓	✓	✓	✓	✓
East-West Connectivity									
Rail	East to-West Midlands Rail Connectivity	✓ ✓	✓ ✓	✓	✓ ✓ ✓	✓ ✓	✗	✗	✓

Scheme Type	Intervention	Linkages to Themes					Potential Cost Range (including sub options)		
		Global	National	Freight	E-W Midlands	HS2	<£50m	£50m-£250m	>£250m
Road	A42/A38 Upgrades	✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓	×	×	✓
Road	Nottingham/ Derby Hub (A52 / A453 / M1 J24)A52	✓ ✓ ✓	✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	×	×	✓
Rail	Improvements on the Nottingham to Crewe to North West/Wales Rail Corridor	✓	✓ ✓	✓	✓ ✓ ✓	✓ ✓ ✓	×	×	✓
Rail	Improvements on the Nottingham - Lincoln Rail Corridor	✓	✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓	×	×	✓

Appendix B Further Information on Road and Rail Network Performance

This section contains further information on the current network performance in relation to our conditional outputs set out in Chapter 3.

There is a lot more additional evidence and information which will be included within the full Midlands Connect Strategy in March 2017 and within the supporting library of evidence, including the Strategic Outline Business Cases for specific schemes.

11.2 Highway Journey Times and Reliability

Roads are, and are likely to remain, the dominant mode for commuting and business trips and for the movement of materials from suppliers to manufacturers and from manufacturers to markets within an increasingly ‘just in time’ supply chain. **A reliable and resilient road network is vital to increasing productivity.**

Businesses across the UK are dependent on the Midlands both in terms of direct customer and supply chains for through movements with us as the hub of the national network.

Some 60% of Midlands Engine businesses report that conditions on the major road network causes them problems, and the situation is most acute for our logistics companies, 20% of which report significant problems. The table below provides a further breakdown of the issues, sub-divided by industry sector.

Impact of Road Network	Logistics	Manufacturing	Professional Services
Delayed deliveries	42%	31%	24%
Delayed supplies	39%	30%	17%
Employee punctuality	24%	15%	17%
Poor reliability of journey time	17%	11%	12%
Long journey time	10%	7%	7%

Figure 18 Business Impacts of Road Network - Midlands Connect Survey 2016

All sectors, but especially manufacturing and logistics, need a high-performing road network to bring national and international supply chains and

markets closer. Three-quarters of our businesses’ suppliers are outside the Midlands. This means good local access to a strategic road network which provides good connectivity and reliable journey times and accurate real-time journey information and planning. This is particularly important to enable ‘just in time’ deliveries and access to international gateways.

A Midlands Connect business survey showed that road connectivity is ‘critical’ or ‘very important’ to 80% of logistics firms, 60% of manufacturing firms and 45% of professional services firms in the Midlands. In aerospace alone, the supply chain consists of 400 core high-technology manufacturing companies and institutions, contributing over 40,000 largely highly skilled and high value jobs to the economy¹².

11.2.1 Highway Journey Times

Our aspiration is for average speeds of journeys on the strategic road network (SRN) to be 60mph at all times of day and all days per week in line with the Government’s vision set out in the current Road Investment Strategy.

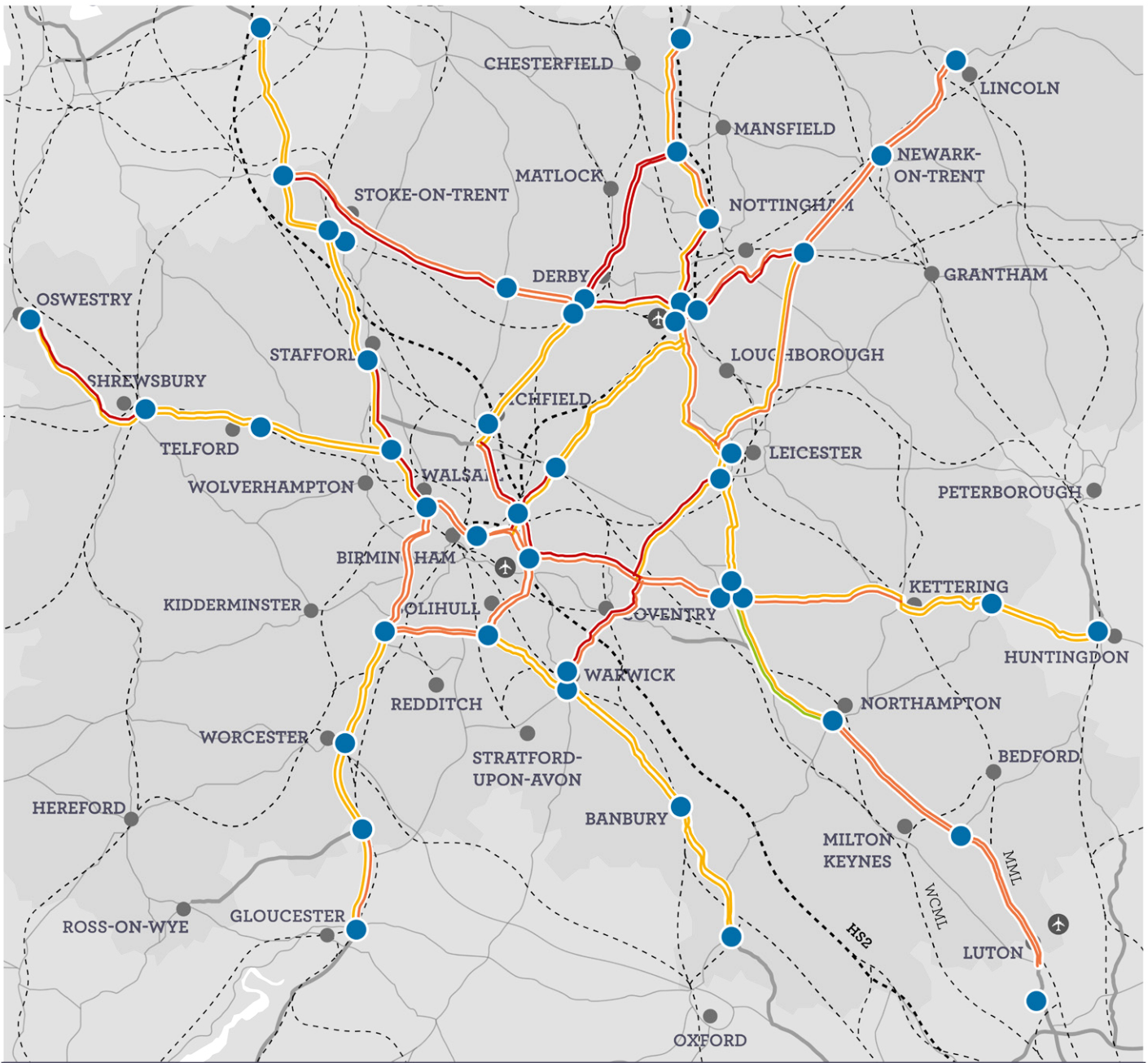
Currently however, traffic congestion means that speeds are below this level on many parts of the SRN during peak periods but also in the inter-peak. **Many of the sections of strategic network worst affected are key freight routes for the UK as a whole.** As traffic continues to grow we expect these speeds to deteriorate, even with the currently planned levels of investment in the SRN.

Model forecasting developed for Midlands Connect suggests the potential impact, if we don’t take action, conditions will deteriorate significantly. Despite the committed schemes that have been included in the model, this shows that traffic speeds on key corridors will be low, because of the very heavy traffic flows.

11.2.2 Highway Journey Time Reliability

Our aspiration is for journey times at different times of day and on different days of the week to be consistent so that people and businesses can plan their journeys

without needing to build in additional 'slack'. Our target is that all journeys are completed within 20% of the median journey time for that target time period (i.e. the 'spread' of journey times is reduced).



— 2.0 to 3.0
 — 1.5 to 2.0
 — 1.2 to 1.5
 — Less than 1.2
 ● Timing point

Journey time variability ratio : weekday 08:00 - 09:00

Above 1.2 means that variability is more than 20% above the average (excluding the worst 5% of all journeys).

Source: Midlands Connect from Tom Tom data extract

Figure 19 - Morning peak highway journey time reliability

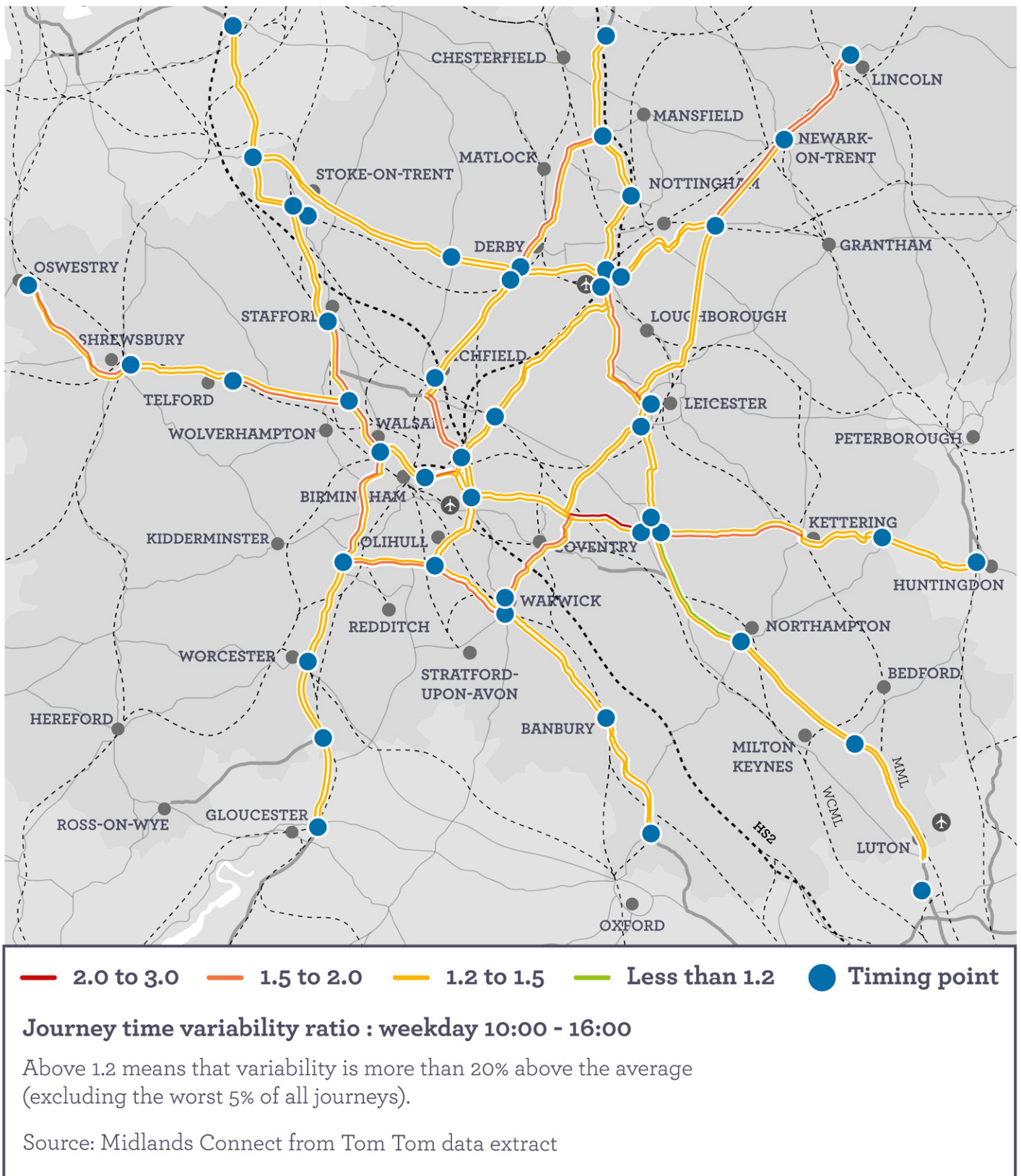


Figure 20 Daytime highway journey time reliability

Currently this level of reliability is rare on the SRN; typically the spread of journeys is up to two to three times the average speed, making predicting journey times for individual trips very difficult. As above, as traffic levels continue to grow, these conditions will deteriorate and adversely impact the economy of the Midlands and the rest of the UK. Figure 20 shows that whilst the worst performance is in the peaks the issues remain throughout the whole day.

Implicit in our aspiration for consistent journey times is a **resilient network that can cope with incidents and events.** This is particularly important for freight for which it is important that there are alternative options combined with the use of smart routing information to minimise the impacts on the industry dependent on them.

11.3 Rail Journey Times and Capacity

One in five current businesses say their activities are constrained by the rail network.

The concentration of professional services in our city centres means that rail services are crucial to provide access to large labour markets. Fast, frequent rail connections between key centres and beyond the Midlands allow our companies to do business.

The performance of the rail network has an impact on one in four businesses in the Midlands. Although the number of businesses affected by the rail network is less than that for road network, for some of these companies, rail services are the only way to provide the travel capacity needed to reach labour pools and to fulfil face-to-face business interaction.

Modern workers need rail services that meet the needs of flexible working patterns, that enable productive working time on-board, and that reliably link to other modes of transport in a multi-modal, multi-operator environment. The Midlands Connect region has over seven major rail franchises passing through it, providing a great opportunity to provide more joined up journey planning and flexibility in ticketing within the next 3 years.

The rail network also plays an important role in the movement of freight between suppliers, manufacturers

and markets. **In total, almost half of all GB rail freight is to, from, within or through the Midlands** with key routes connecting to ports at Felixstowe and Southampton. Rail freight customers need appropriate train paths and terminal capacity and where this is constrained, they quote delayed supplies and deliveries as impacts on their business.

11.3.1 Rail Service Provision

In regard to direct rail service provision, there are several locations within / outside the Midlands which are not currently directly served by rail services as shown in Figure 21.

Rail services must provide an experience that is fit for the 21st century. A step change in ticketing approaches is needed to enable new and novel ways to plan and pay for travel on the rail network.

Rail speeds both in the Midlands Connect area and on the key routes to other strategic centres are generally far lower than the aspiration average speed of 90mph as shown in Figure 22. The exceptions are those locations situated on the West Coast Main Line. Typically, average speeds are of the order of 30-60 mph, including Birmingham to Nottingham, which has an average speed of 46mph.

Rail Frequencies (Typical Weekday Inter-Peak)										
Origin	Destination	Birmingham	Solihull	Wolverhampton	Derby	Nottingham	Leicester	Coventry	Stafford	Stoke
Birmingham		N/A	6	9	4	2	2	8	4	2
Solihull		6	N/A	0	0	0	0	0	0	0
Wolverhampton		9	0	N/A	0	0	0	2	4	2
Derby		4	0	0	N/A	3	2	0	0	1
Nottingham		2	0	0	3	N/A	3	0	0	0
Leicester		2	0	0	2	3	N/A	0	0	0
Coventry		8	0	2	0	0	0	N/A	1	1
Stafford		4	0	4	0	0	0	1	N/A	3
Stoke		2	0	2	1	0	0	1	3	N/A
Birmingham Airport		9	0	3	0	0	0	7	1	1
East Midlands Airport		0	0	0	1	2	3	0	0	0
Bristol		2	0	1	1	0	0	0	1	1
Leeds		1	0	0	1	1	0	0	0	0
London		8	2	1	2	2	4	5	2	3
Manchester		2	0	2	0	1	0	1	2	5

Figure 21 Direct Rail Service Provision between selected locations

Expressed as journey times an example is Birmingham to Nottingham which takes 1 hour 9 minutes to make a 52 mile journey. A similar distance route from Southampton Central to Reading (50 miles) takes just 49 minutes on the train – almost 20 minute faster.

Rail Speeds (MPH, Typical Weekday Inter-Peak)										
Origin	Destination	Birmingham	Solihull	Wolverhampton	Derby	Nottingham	Leicester	Coventry	Stafford	Stoke
Birmingham		N/A	26	46	60	46	41	58	51	45
Solihull		26	N/A	21	35	34	29	22	29	32
Wolverhampton		46	21	N/A	50	41	36	43	65	46
Derby		54	35	38	N/A	34	78	45	36	41
Nottingham		46	34	37	38	N/A	61	50	54	37
Leicester		48	29	35	78	55	N/A	36	43	45
Coventry		36	28	31	39	41	25	N/A	41	44
Stafford		55	33	70	44	49	31	42	N/A	54
Stoke		54	34	59	40	34	37	50	57	N/A
Birmingham Airport		43	18	29	40	38	32	65	43	42
East Midlands Airport		29	22	26	44	30	74	41	32	25
Bristol		65	48	59	52	47	49	52	65	59
Leeds		53	44	54	45	37	48	51	45	46
London		80	63	69	79	70	77	98	115	109
Manchester		52	42	60	52	48	47	44	43	69

Figure 22 Current Rail Speeds between selected locations

Average freight train speeds are very low, typically 25mph, despite trains being capable of 60mph or 75mph. The Network Rail Freight Network Strategy makes a start at looking at this issue, and the strategy should support developments such as Nodal Yards and a thorough review of timetabling and pathing to improve average freight train speeds.

11.3.2 Rail Capacity

Passenger Services

As part of the Route Study process, Network Rail provides forecasts of crowding levels in 2023. The data shows there are expected to be several areas of overcrowding both in the West and East Midlands. These problems are expected to be most acute in the Birmingham area, with several locations (including on the Birmingham to Coventry corridor and on the Cross City Line towards University) forecast to have in excess of 140% seat utilisation in the peak.

Looking towards 2037 even with the transformational national connectivity that HS2 brings there are

significant capacity issues remaining on the classic network reflecting the scale of population and jobs growth across the wider region (see figure 23).

The rail network requires better demand management to maximise the value of the existing infrastructure. Better travel information can enable more informed decision making by commuters and support operators to make decisions about new and novel ticket types that will better balance supply and demand.

Unless we act, these constraints will act as a handbrake to business to business connectivity.

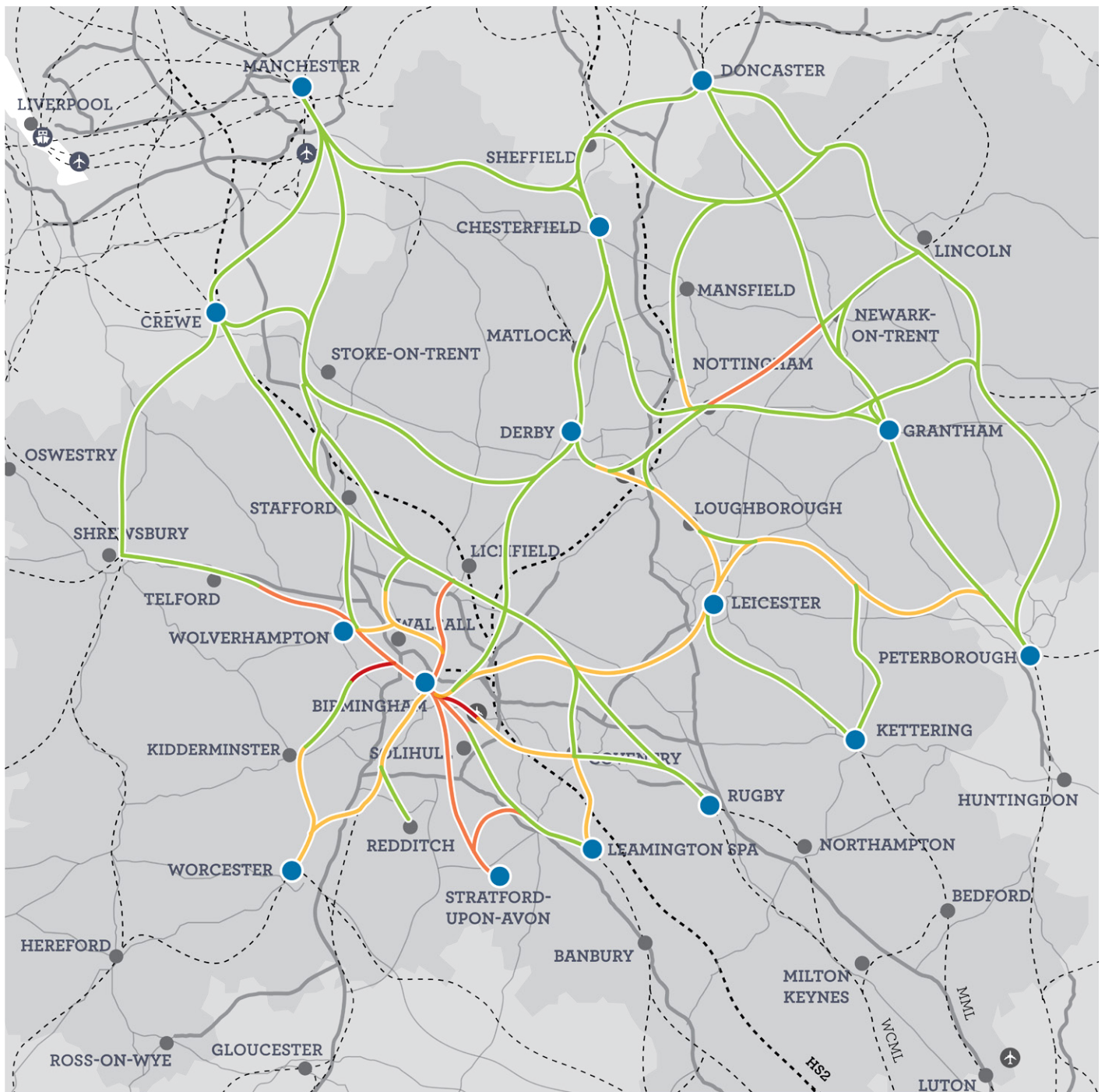


Figure 23 Forecast Rail Overcrowding (morning peak) 2037 with HS2

Freight Services

The Midlands lies at heart of the UK rail freight network and hence plays a key role, both in terms of national and local freight movements. Several routes are of particular importance, including the West Coast Main Line, Midland Main Line, the Birmingham to Derby Line and the route between the Midlands and Felixstowe via Peterborough.

The West Coast Mainline is important, as are the routes to Southampton and Felixstowe, both of these have investments identified in the Network Rail Freight Network Strategy and should be supported.

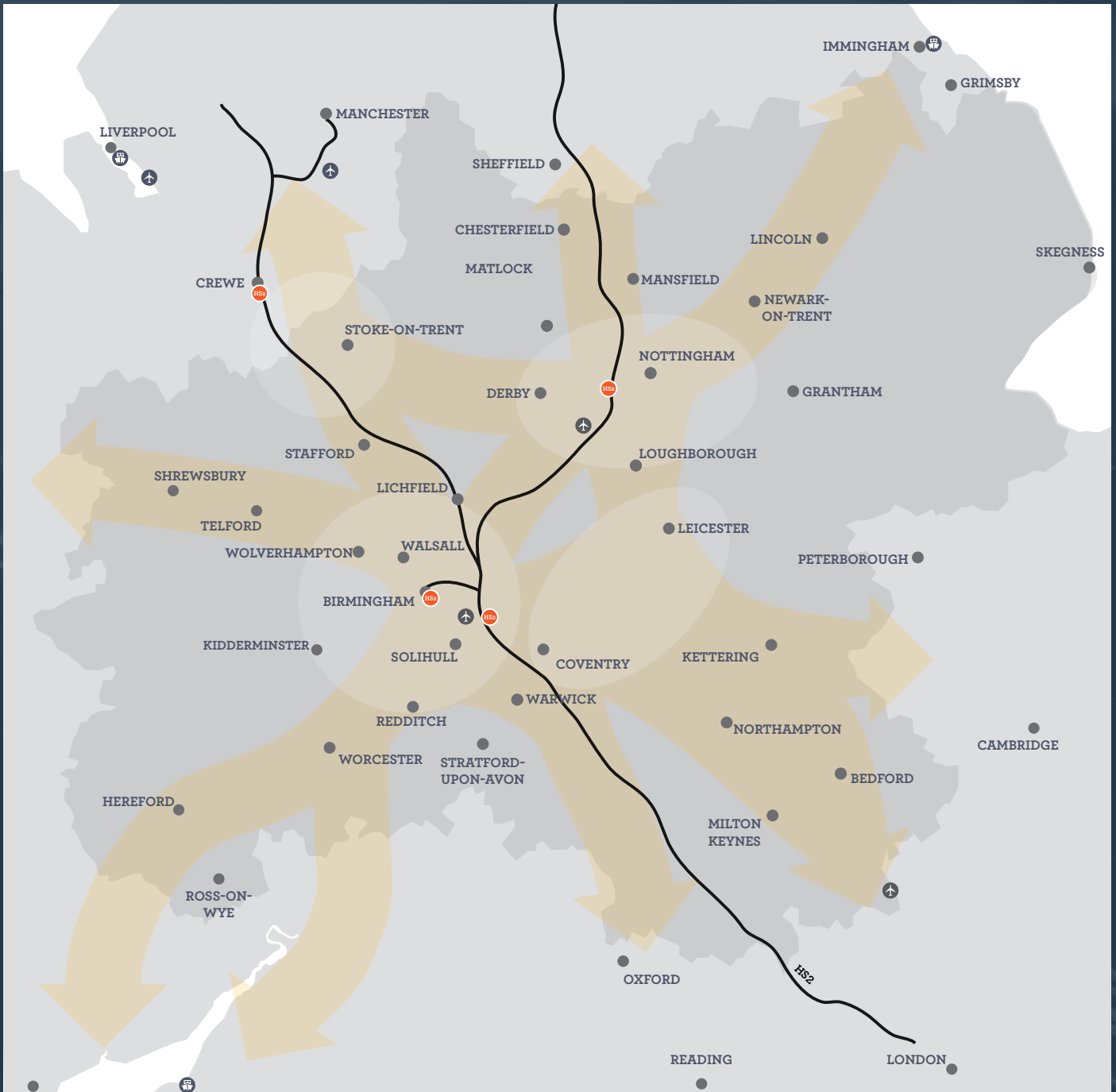
The biggest driver of rail freight is expected to be the intermodal sector, with Network Rail's Freight Market Study forecasting continued growth in demand to and from the ports, but also domestically (for example, between the Midlands and Scotland).

Particularly important intermodal flows for the Midlands are traffic between the Haven Ports and the Midlands and between Southampton and the West Midlands.

In the case of the former, trains route via both London and via Peterborough, but several constraints exist on

both routes that will limit further service enhancement. For the latter, there are also constraints on further service development, as the route interacts and crosses several key passenger train routes (including the South West Main Line and Great Western Main Line).

As such, providing sufficient rail freight capacity in the future presents a clear constraint for the UK based on the networks within our region.



Midlands Connect
Powering the Midlands Engine

Midlands Connect

16 Summer Lane, Birmingham, B19 3SD

✉ MCAdmin@midlandsconnect.uk

📍 www.midlandsconnect.uk

🐦 @MidsConnect