

Fairer, greener, stronger

A Strategic Transport Plan
for the Midlands



Midlands Connect
Transport | Investment | Growth

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Foreword

A fairer, greener & stronger Midlands

“In the five years since we published our first strategy, we’ve seen some of the most radical changes to our political, societal and environmental landscape in living memory. Dealing with the impacts of a global health emergency has put extraordinary pressure on public finances, changing beyond recognition the way we work, live, and travel. The world’s first climate change conference combined with ground-breaking decarbonisation pledges from governments around the world has spurred on a technological revolution in alternative fuels, green energy generation and electric vehicles. Closer to home, the UK’s exit from the European Union has encouraged businesses to rethink how they trade, where and with whom.

This Strategic Transport Plan is focused on meeting these challenges, seizing the opportunity to deliver a fairer, greener and stronger Midlands region – one where communities are connected to the jobs, places and services they need to succeed. Our research over the last five years has analysed how people now travel, why they travel and where to, and how this needs to change in future. These insights have led us to this plan. This Strategic Transport Plan seeks investment and innovation in the places that need it, whether it be improving rail services, boosting mobility in rural areas, future-proofing our road network or cementing the Midlands’ place at the forefront of the electric vehicle revolution.

Although many of the changes we’re experiencing are universal, it’s equally important that we focus on what sets us apart. As a region, the Midlands is a manufacturing giant, a centre for innovation and a pioneer of new, green technologies. That said, we are also home to pockets of poor social mobility, areas where educational attainment is below par and rural communities where a lack of public transport causes feelings of loneliness and isolation.

By working with our partners, playing to the region’s strengths and making a clear case for investment to government, we can ensure that every single person in the region gets to where they need to be. Yes, we

must tackle climate change, of course we must spread opportunity, but most of all we must pursue a future where the Midlands and its people are empowered to reach their full potential.

Our pledge to this region is simple – we will work behind the scenes to gather evidence, to make plans and bring forward delivery, but most of all, we will not forget the people behind these plans. This grand vision is about you, ensuring you can get to a hospital appointment, that you can access public transport, that you can get to that new job and that you can have the future you deserve. We will now forge ahead and work to deliver this vision of a fairer, greener and stronger region. A region that you deserve.”

Maria Machancoses
CEO of Midlands Connect

Sir John Peace
Chairman



Summary of commitments

The Midlands lies at the heart of the UK’s transport network. Across the region, there are plans to transform connectivity, building upon the once-in-a-generation opportunity provided by HS2. By identifying and developing a strategic transport infrastructure investment pipeline, and working with partners to foster collaboration and innovation, Midlands Connect can help the region and the country to level up, decarbonise transport and build a resilient economy. This can be achieved through the delivery of our commitments, which are summarised below alongside the short-term transport infrastructure investment priorities agreed by our partnership.

Decarbonising transport and adapting to climate change

We will lead the way and assist our partners in establishing net zero transport carbon emissions, ensuring that our strategic transport network makes a positive contribution towards this goal. To do this, we will:

Support our local authority partners to develop their transport decarbonisation plans and pathways by publishing a ‘**Transport Decarbonisation Policy Toolkit**’ by the end of 2022.

Establish a **Regional Transport Decarbonisation Forum** in 2022 to share information, best practice and guidance on transport decarbonisation plans, policies and proposals.

Strengthen the position of the Midlands as a leader in the take-up of electric cars by working with partners to develop a regional **Electric Vehicle (EV) Charging Infrastructure Plan**. This will provide greater clarity over the regional requirements and support local authorities to evolve their own plans and proposals. The plan will be completed and published by spring 2023. We will also develop and implement an **EV Charging Infrastructure Planning Tool** that will help local authorities identify the best places to install new EV charging infrastructure. This will be in place by the end of 2022.

Advise government on the technologies that could be used to **decarbonise railways in the Midlands**. This will include continuing to support Network Rail with the development of an evidence base for the prioritisation of routes for decarbonising rail in the region. We will subsequently support a rolling programme of electrification that aligns with shared priorities. Following the Integrated Rail Plan (IRP), electrification of the Midland Mainline will be one of these shared priorities; decarbonisation of the Snow Hill line will be another.

Deliver a plan for how the mandated standard for a **10% increase in biodiversity** for nationally significant infrastructure projects can be applied to all transport infrastructure projects. This plan will be in place in early 2023.

Develop a **methodology for appraising climate resilience risks and opportunities** for our most important transport corridors. This will be in place by early 2023. It will be informed by work to test our Major Road Network schemes to find the best way to integrate network resilience to climate change into infrastructure business cases.

We want to continue to play a leading role with the government and other Sub-national Transport Bodies in developing a UK-wide view of the alternative fuel infrastructure needs of the freight and logistics sector. We want to help the Midlands become a test bed for innovation on alternatively fuelled heavy goods vehicles (HGVs) and the recharging/refuelling infrastructure needed for freight. To do this, we will:

Work with our consortia colleagues to complete the Innovate UK **H2GVMids** regional demonstrator desktop study, which is seeking to trial hydrogen HGVs in the region, by spring 2022.

Work with Midlands Energy Hub and partners to further develop our **HGV recharging and refuelling site selection tool** and develop an **HGV recharging**

and refuelling network plan. This plan will be in place by early 2023.

Investigate the potential for **aligning road and rail recharging and refuelling sites** to improve the affordability and availability of a region-wide network. This will be done in line with developing the Programme Business Case for Midlands Engine Rail.

Improving rail and public transport

Rail can be a low carbon enabler of levelling up and economic growth. We will maximise the opportunities from HS2, providing fast and reliable rail connections for passengers and freight whilst integrating the regional rail network with local and national transport networks, improving access to rail and better enabling sustainable end-to-end journeys. To do this, we will:

Deliver a **Programme Business Case for Midlands Engine Rail (MER)** by spring 2023. This will include a delivery plan that will aim for a first package of MER improvements to be in place by the time HS2 reaches the Midlands (currently 2029). It will also set out our rail position on issues such as decarbonisation, rolling stock and freight.

Work with other Sub-national Transport Bodies and Network Rail to **develop plans to improve rail connectivity between the Midlands and economic centres in other regions**, including in East Anglia, England's Economic Heartland and Wales. In response to the IRP, we will consider in detail how we can best use released capacity to improve connectivity between Birmingham, the North-West and Scotland, and also collate our own evidence on how high-speed services can link the East Midlands, Yorkshire and the North East.

Work with our partners to develop a **rail and public transport improvement plan** that builds on MER to support rail patronage growth and modal shift of both passengers and freight across the Midlands. We will publish our plan by spring 2023.

Developing our future road network

Our roads and how they are used remain vital to the needs of our people and the region. We want to provide a reliable, resilient and efficient Strategic Road Network that will allow our region, businesses and people to flourish. To do this, we will:

Develop the evidence base and strategic case for investment at the locations on our Strategic Road Network (SRN) that we have identified as most urgently requiring attention. This will be done as part of our long-term strategy for improving east-west connectivity and reliability, also supporting the nationally important freight movements through and in the region. We will aim for development work to commence on as many of these as are affordable as part of the National Highways Road Investment Strategy 3 (RIS3) programme, running from 2025 - 2030.

Continue to investigate the next potential tranche of **SRN improvement priorities**, again as part of an overall strategy for improved regional connectivity. This will be performed whilst monitoring the region's trajectory towards transport decarbonisation.

Fulfil our remit from the government to advise them on the region's investment priorities on our major road network. We will continue to work with partners to develop their business cases to secure funding for the region's priorities from the first round of the government's **Major Road Network (MRN) and Large Local Majors (LLM) fund**. We will also continue to allocate funding from our core budget to assist local highway authorities and the region to identify and prioritise further **MRN and LLM schemes** for any future second round of government funding (currently assumed to be 2025-2030).

Work with other Sub-national Transport Bodies to build on the **improved cross-boundary road linkages** provided by our existing strategic road corridor programme. Further investigation work will initially focus on the A15 from Peterborough to Hull, the A49 between the Marches and Cardiff, the A49 connection from the Marches to Manchester, and the A14 from Felixstowe to the M1. This will complement the work we are already doing to develop long-term plans for the A46, A5, A50/A500 and A1.

Publish our **plan for the development of our future road network** by spring 2023.

Moving goods across the Midlands

The Midlands is the heart of the UK's freight network. We want to ensure our strategic rail and road networks provide the fast and reliable connections needed for our manufacturing and logistics business to grow, including to international gateways. To do this, we will deliver on the decarbonisation, rail and road commitments described above, as well as:

Develop and publish a **route map and improvement plan to support strategic freight movements in the region**. This will be published in 2022.

Incorporate rail freight needs into all passenger rail projects, supporting the transportation of more goods by rail. This will include supporting the development of a network of strategic rail freight interchanges across the region and the United Kingdom. It will also include linking the two freeport proposals located within the Midlands and working with partners to tackle pinch points outside the Midlands that have a direct impact on the ability of the region to switch goods from road to rail.

Maximising opportunities for technology and the future of mobility

Midlands Engine is in the vanguard of pioneering innovation across a range of economic sectors including transport, advanced manufacturing, energy, life sciences, agri-tech and technology. We want to leverage the learning and innovation from the expertise that is in place in the region to maximise the opportunities from transport-related technologies. To do this, we will:

Develop and publish a regional **Transport Technology Route Map** with an accompanying Technology Action Plan for the next ten years in autumn 2022. This will be multi-modal in focus and set out how technology can make our transport network safer, more sustainable and efficient. It will also explore the barriers that need to be addressed to maximise opportunities from transport-related technology, for example hydrogen storage and transportation technologies.



Publish our **Rural Mobility Hub Guidance and Toolkit** to help local authorities identify and establish commercially viable rural mobility hubs. This will be published by summer 2022.

Generate new ideas during 2022 for how **rural public transport could be re-imagined** in an era of greater digital connectivity and in the context of rural community needs.

Working with our partners

We will continue to take a 'One Midlands' approach to championing the Midlands. This means we will work with the Midlands Engine, councils, businesses and communities to put in place the essential building blocks to enable low carbon levelling up and regional growth. To do this, we will:

Continue to **work with Midlands Engine and its Observatory**, plus our partners, to share resources, research, innovation and digital systems to maximise opportunities for achieving the outcomes the region needs.

Work with the Midlands Engine Observatory to develop a blueprint for a digital regional data-sharing system that provides timely, accessible and high-quality data to underpin effective cross-sector decision-making.

More effective decision-making

Establish the **Midlands Analytical Framework** during 2022 to help update our evidence base to account for recent changes to our economy and travel needs, and to better support our partners.

Work with the Midlands Engine Observatory to develop a regional **monitoring and evaluation plan** by spring 2023. This plan will define a series of required regional outcomes that align to our long-term strategic objectives and will set out a data collection and monitoring regime which will enable us to track the region's progress towards them.

Undertake a **wider and holistic appraisal of the economic, social and environmental benefits of this plan during 2022**. This will include appraisal of our infrastructure priorities and the work we are doing to lead regional innovation and collaboration on issues such as Electric Vehicle (EV) charging infrastructure provision, alternative fuels for freight and logistics, rural mobility and smart ticketing.

Continue to develop evidence-bases that enable robust and informed regional decision-making on policies such as decarbonisation, EV charging infrastructure, fiscal behaviour change and alternative fuels for freight and logistics.

Funding our priorities

Develop a high-level **funding and finance plan** to accompany this Strategic Transport Plan. This will highlight where we believe funding may come from to deliver on the priorities set out in this plan. This funding plan will be published in early 2023.

Continue to work with Midlands Engine and local authorities to progress our **economic growth corridors** initiative, which seeks to take a corridor-based approach to planning for, and funding, infrastructure improvements.

Improving regional capability and capacity

Work with our partners to improve evidence-based decision-making by launching our Midlands Connect **Business Case Centre of Excellence** in summer 2022.

Support a series of other local authority-led **centres of excellence** around rail, freight, technology, bus planning and future mobility opportunities. These centres of excellence will come on-stream during 2022.

Continue to **provide seed-funding** from our budget to help local authorities develop new transport intervention ideas that will achieve local, regional and national objectives.



Summary of our rail and road priorities

The strategic transport investment we need now

We share the government's aspiration to accelerate the delivery of the transport infrastructure that the country needs. But we also recognise that we are in challenging times when it comes to public finances.

We have therefore worked hard to focus on what we believe is a proportionate programme of the most urgent priorities. We've identified the parts of our strategic transport network that are most in need of investment in the next 5-10 years and developed a package of road and rail investments which complement each other to deliver on the grand challenges identified in this plan (see Figure 1).

Our short-term priority pipeline will: deliver improved rail connectivity between the West Midlands and the South West and East Midlands through enhancements in capacity in the bottleneck area of Birmingham; improve the quality and reliability of road connections along the nationally and strategically important A46, A5 and A50/500 corridors, and support the nationally important freight movements through and in the region. Figure 1 shows the locations we believe are most in need of investment on the region's strategic rail and road networks, covering the period between now and 2030.

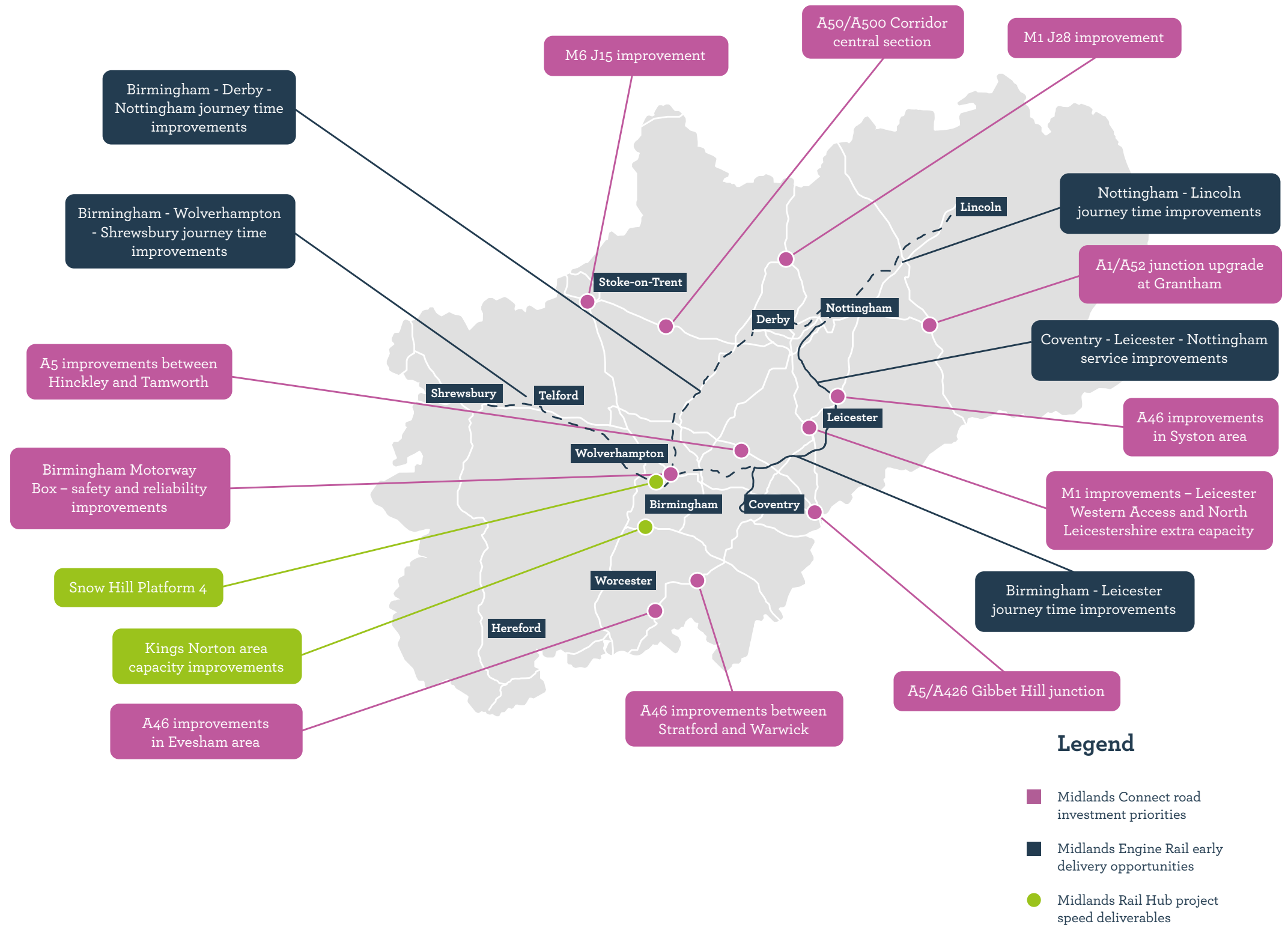


Figure 1: Summary of our strategic rail and road priorities to 2030

These locations are summarised below:

Rail: Birmingham – Derby – Nottingham journey time improvements: We're strongly advocating for early service improvements to benefit passengers between Nottingham, Derby and intermediate stations to Birmingham in advance of HS2 reaching the East Midlands.

Rail: Nottingham – Lincoln journey time improvements: We believe that journey time improvements between these cities can be delivered in phases, with the first being relatively simple and inexpensive to put in place.

Rail: Coventry – Leicester – Nottingham service improvements: We have identified an exciting opportunity to create a new direct rail link between these three cities, which would dramatically increase the speed of travelling by train. This is vitally important when considering, for example, that 97% of current journeys between Coventry and Leicester are by car.¹

Rail: Birmingham – Leicester journey time improvements: We wish to see existing passenger services run faster in the short-term while additional services could be added at a later date.

Rail: Midlands Rail Hub: Kings Norton capacity improvements: The Kings Norton area is a pinch-point to more local services running into New Street Station reliably for passengers. Extra capacity here is also a required interim step to eventual increased and faster services to Worcester, Hereford and the South-West.

Rail: Midlands Rail Hub: Reinstate Snow Hill platform 4: This is a first-step intervention to eventually realising opportunities for more regional rail services to use Moor Street Station in Birmingham. In the short-term, local services can make use of improved platform capacity at Snow Hill.

Rail: Birmingham – Black Country – Shrewsbury journey time improvements: We have found solutions to speed up trains that can be delivered quickly to improve reliability, boost local connectivity and strengthen links to Wales. When HS2 Phases 1 and 2a are completed, there will be opportunities to run more local services on this route.

Road: A50/A500 Central Section: The Uttoxeter area is one of the most gridlocked sections of this key east-west road corridor that links Stoke-on-Trent and the M6 with Derby and the M1. This causes difficulties for local journeys by all modes, poor air quality, hampers the flow of freight and restricts jobs and housing growth opportunities.

Road: M1 junction 28: Improvements at this critical location will help solve the peak hour reliability, safety and air quality issues.

Road: A1/A52 at Grantham: This location on the road network needs to support local growth, improve safety for all road users and help keep the nationally and regionally important A1 route moving, particularly for freight.

Road: A46 at Syston: The A46 is one of the country's most important trade routes. Improvements in the Syston area, which provide for all road users, will help ease congestion and help support sustainable growth to the north of Leicester.

Road: M1 – Leicester Western access: There is a need to ease congestion, improve road safety and unlock further economic growth at this location.

Road: A5/A426 Gibbet Hill: We want to see solutions that sustainably support local growth and help the A5 become more reliable at peak times.

Road: A46 improvements between Stratford and Warwick: The A46 between these places currently provides a very poor service. Public transport between them is virtually non-existent, cycling is perilous, freight and commuters get stuck in significant queues and both areas have plans for growth. We wish to see a programme of measures developed and delivered here.

Road: A46 junctions around Evesham: Clogged up roads are hindering local economic growth and having a detrimental impact on the market town of Evesham. We believe there are longer-term ideas which can realise aspirational visions for Evesham, but right now there are some real problems for all road users. These could be solved by relatively minor improvements to junctions on the A46.

Road: Birmingham Box: There are safety and congestion issues that will continue to worsen as the West Midlands grows. Large scale changes to the M5/M6/M42 are physically extremely challenging and not desirable in the context of decarbonisation. We want to see this area of the network run as safely and reliably as possible, largely using technology but also complemented by improved public transport being planned by Transport for the West Midlands (TfWM).

Road: A5 between Hinckley and Tamworth: We believe there are opportunities to improve safety, reduce congestion, support growth and provide active and public transport routes along the A5, one of the region's most important east-west road corridors.

Road: M6 junction 15: We have identified proposals to reduce congestion, improve safety and support the better flow of traffic at this problem location.

These locations have been agreed by our partnership as a set of strategic transport infrastructure priorities for the region. We are confident that investing in these locations will be required even accounting for current uncertainties around economic growth and the demand for travel post-pandemic. The exact schemes or solutions are in some cases still to be determined by further detailed technical investigation, which will need to account for the needs of all users of the transport network.

If funded, our evidence tells us that investing in these places will create jobs, boost trade, enable much needed housing growth, improve safety, reduce carbon emissions, improve air quality and make our networks more reliable for people, businesses and freight.

1. According to analysis of 2018 mobile phone data of journeys between Coventry and Leicester

Continued long-term thinking

This plan focuses on what our evidence base tells us are our most immediate connectivity needs for the region and those which we believe are the most certain at a time of great uncertainty. However, we are a long-term strategic planning body and as such, we must continually look beyond our most immediate needs. The planning work we've been doing on our strategic corridors has reinforced that these are vitally important links if the region is to grow economically, productively and sustainably. However, getting them to the point where they provide the kind of service needed will be a long-term process, requiring significant and sustained investment.

Our long-term goals are to ensure that connectivity across the region provides the service needed for our strategic objectives to be met. But how that service need is met will be an evolving question. Technology development, social and consumer behaviour, planning policy and carbon commitments (to name a few) will all impact on the specific strategic connectivity investment needs of the region. We will continually evolve these, improving our evidence base and ensuring that the best decisions are made.

Working your way around our plan

Our plan is structured as follows:

Chapter 1 provides an introduction to our plan. It describes why now is such an important time for infrastructure investment and why investment in the Midlands is crucial. It sets out who Midlands Connect is, what we do and the purpose of this plan.

Chapter 2 sets the scene for this plan. It looks back to our 2017 strategy, summarising the basic components we have continued into this plan and what we have achieved since it was published.

Chapter 3 summarises the 'building blocks' of our updated plan. This discusses the three grand challenges faced by the Midlands, the objectives we have put in place to help understand how our strategic transport network can meet these challenges and the connectivity problems that we need to fix.

Chapter 4 explores in detail the three grand challenges faced by the Midlands. These are levelling up, decarbonising transport and growing a resilient economy. It also identifies the strategic connectivity improvements needed to meet these challenges.

Chapter 5 sets out our priorities for providing the level of strategic connectivity needed across the region to meet the challenges we face. In identifying our priorities, this chapter focuses on two things, reflecting our role and remit from government:

- To prioritise what the region wants from strategic national funding pots for rail and road investment.
- To help support our partnership to collaborate and 'work at scale' to develop transport-related solutions to the challenges that we face, including ways to connect people and businesses in the Midlands through pan-regional infrastructure.

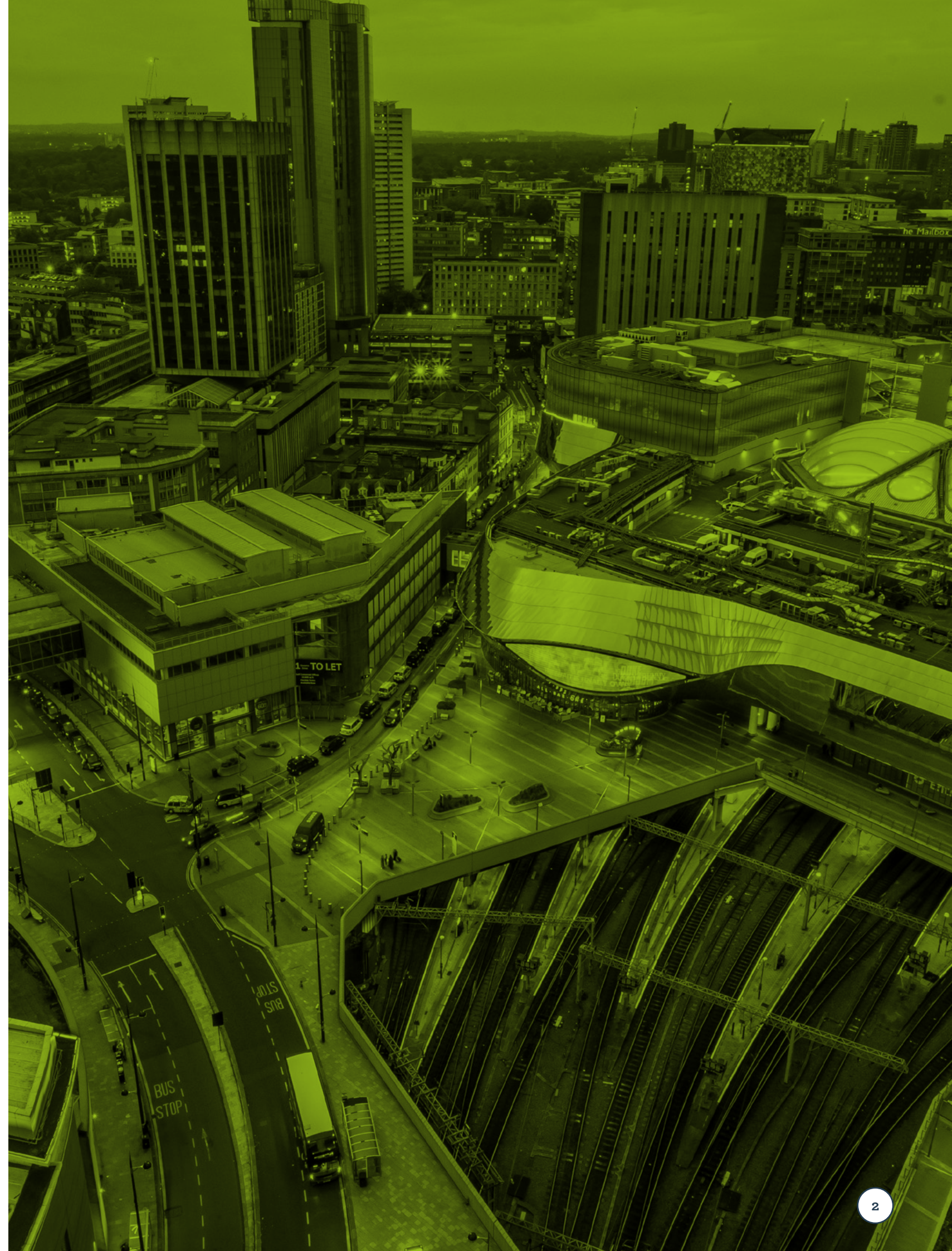
Chapter 6 sets out the steps we want to take to accelerate delivery of our priorities. It includes information on how we will work together as a partnership to ensure delivery and effective decision-making, how this plan will be funded and how we will ensure that we, and our partners, have the capacity and capability to deliver this plan.

Chapter 7 indicates that this is not the end of the process. This plan will be further enhanced by a series of supporting publications over the coming months. These are summarised in this chapter.



1

Introduction: a crucial time for infrastructure investment



1. Introduction: a crucial time for infrastructure investment

Now is an important time for infrastructure investment. The UK is facing a complex set of challenges. It is essential we secure our status as a global trading hub post-Brexit. We must also tackle the growing and deep-rooted scale of inequalities in the UK and address the threat of climate change. At the same time, the country has been in the midst of an unparalleled economic crisis caused by the Covid-19 pandemic.

The government recognises the role that infrastructure can play in meeting these challenges. In its National Infrastructure Strategy (NIS)² it has committed to building the infrastructure the country needs, both to reduce the long-standing inequalities between different parts of the UK and to meet net zero and climate change commitments.

The NIS recognises that in recent years, various governments have spent heavily on the rail and road networks of London and the south-east, investment that will serve the UK's economic engine well for many years. But, in the period covered by the NIS, the government is committing to significantly shift spending to the regions and nations of the UK.

Now is therefore an opportune moment for us to refresh our strategy, as the government seeks to “build back better” and “create the world-class infrastructure needed across the whole of the UK”. We want to ensure this plan sees the Midlands become a valuable partner in helping the government meet its primary challenges of levelling up, decarbonisation and supporting the nation's post Covid-19 recovery.

“For decade after decade, governments of every political stripe have failed to invest enough in the UK's regions and nations. It is one of the reasons why the quality of our national infrastructure has fallen behind that of other countries.”

Boris Johnson, Prime Minister, Government National Infrastructure Strategy.

1.1 The case for infrastructure investment

Our transport and infrastructure networks join us together. We all use them – to get to work, school, go shopping, see the doctor or visit family. We all need them - to move the goods and materials that we need. Businesses need them - to access labour, suppliers and markets.

Well-developed transport and digital networks allow businesses to grow and expand, enabling them to extend supply chains, deepen labour and product markets, collaborate, innovate and attract inward investment. It is a key factor in determining where firms choose to locate and grow, and people's ability to access resources.

However, strategic connectivity does more than just facilitate economic activity. It can also help deliver better social outcomes for people and communities. It does this by facilitating improved accessibility, social inclusion, resilience and wellbeing. High-quality national and regional transport networks between our major cities and towns, sustainable mobility within major urban areas and improved connectivity to often marginalised communities in coastal and rural areas are fundamental to levelling up.

But, if unchecked, infrastructure improvements can have significant impacts on the natural environment and on carbon emissions. There is an increasing awareness of the need not only to minimise these impacts but also to consider how such projects can be a catalyst for providing new and improved environmental outcomes.

“High quality infrastructure is crucial for economic growth, boosting productivity and competitiveness. It helps connect people to each other, people to businesses, and businesses to markets, forming a foundation for economic activity and driving down the costs of trade.”

Government National Infrastructure Strategy.



Investing in the Midlands is important to the UK

The Midlands is an extraordinary place. It lies at the centre of the UK, stretching from Lincolnshire on the east coast to Herefordshire in the west and from Staffordshire in the north-west of the region to Worcestershire in the south-west. We have everything from the birthplace of the industrial revolution at Ironbridge to the Staffordshire Potteries, the home of Shakespeare in Stratford-upon-Avon and the outstanding nature reserves of Lincolnshire and Derbyshire.

With a population of 10.7 million people, 5.3 million jobs and an annual economic output of more than £257 billion (2019), the Midlands forms a significant part of the national economy. The region has a population greater than our devolved nations combined. It accounts for a quarter of all UK manufacturing jobs and is the UK's largest logistics hub, whilst also being home to a significant professional and financial services sector. The long-term economic success of the region therefore matters to the nation as a whole.³

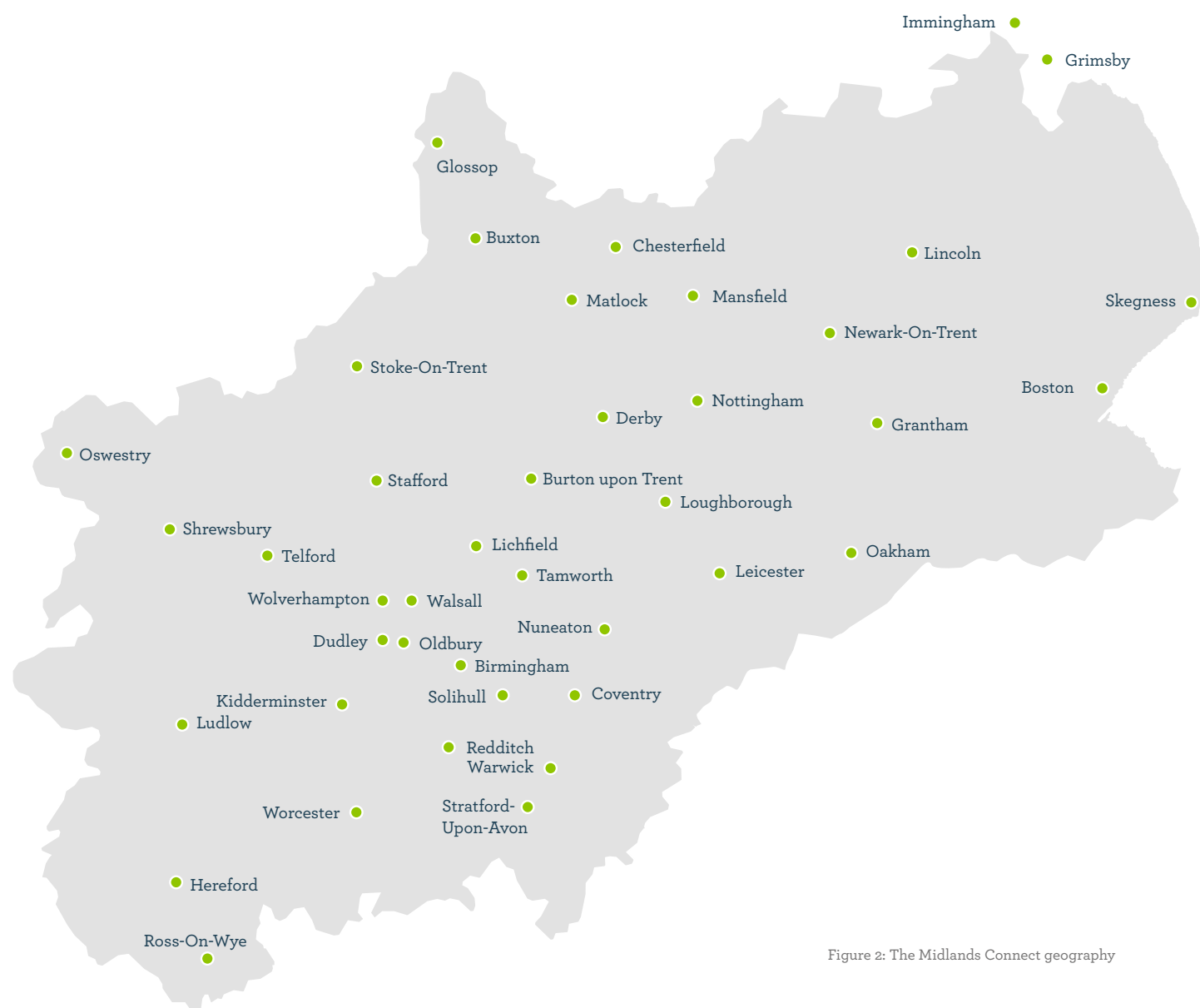


Figure 2: The Midlands Connect geography

The importance of our transport network

As the Midlands sits in the middle of the country, many journeys need to travel through the region, as well as to and from the area itself. We recognise that our transport networks are vital to the economic prosperity of the UK, and that we need to plan improvements that will maximise benefits nationally as well as regionally.

At a national level, the region is crossed on the north-south axis by multiple motorway corridors (mainly the M1, M5, M6, M40 and M42). We also boast the only toll motorway in the country, with the M6 toll. The region also contains three nationally significant rail corridors (the West Coast, Midland and East Coast mainlines) and from 2029 onwards, the Midlands will also be at the heart of Britain's new high-speed railway.

In the freight sector, we are the UK's logistics hub, strategically best placed to move the nation's goods. These goods are vital for all sectors of our economy, from complex manufacturing supply chains and domestic goods to sectors that move the food and drink needed to feed the nation. We are also home to many of the country's resources, including the raw materials needed to build the country's essential infrastructure, be it railways, roads, hospitals, banks or schools.

We have important international gateways at Birmingham International Airport, East Midlands Airport (just awarded freeport status and the largest air freight terminal outside London) and the strategically important Humber ports lying on the edge of our region (also awarded freeport status).

Our regional transport pedigree reflects our position at the heart of the UK's transport network. The region boasts automotive excellence at Jaguar Land Rover's world headquarters in Whitley and leading edge high-tech automotive innovation at Motorsport Valley. Birmingham hosts the nation's rail hub at New Street station, and development of the HS2 station at Curzon Street will create widespread reimagining of a large quarter of the country's second-largest city. Derby is synonymous with rail engineering excellence, hosting Alstom's headquarters. The Derby Railway Engineering Society is providing an active forum for people across the rail engineering sector. Half of UK research in the transport sector takes place within the region.⁴

Building on this pedigree and our locational advantages, Midlands Engine has identified improved transport infrastructure as one of four strategic opportunities. By improving connectivity we can enable the region to achieve the levels of productivity required to close the economic prosperity gap between itself and the rest of the country.⁵



1.2 Who we are

Midlands Connect is a voluntary partnership and the Sub-national Transport Body for the Midlands. We plan for the strategic connectivity needs of people living in, working in, and visiting the Midlands. We do this by providing a clear set of strategic transport improvement priorities for the region, as well as by supporting national and regional collaboration and innovation to develop solutions to the challenges we face.

Founded in 2014, we are an organisation run for our partners. Our partnership comprises the 22 local transport authorities in the East and West Midlands, business and stakeholder groups via local enterprise partnerships, chambers of commerce, National Highways, HS2 Ltd, Network Rail and the government. Figure 3 shows the partners that we work with at a national, regional and local level.

The journeys we make, and the connectivity needs of our businesses, do not always sit neatly within single local authority boundaries. Our key strength as a partnership is that we fill the gap between national government and local authorities. We act as the glue that bonds our national and regional transport infrastructure and policies to local population and business needs. This helps ensure all local authorities have the opportunity to align with government priorities.

Our partnership enables us take a ‘One Midlands’ approach that provides one voice to the government and other funding bodies on our short and long-term regional transport investment priorities. The power of the Midlands speaking with one voice has already been effective, with funding secured to develop key long-term infrastructure priorities, such as Midlands Rail Hub (MRH). This project will ensure we have sufficient rail capacity to move people and freight as we look towards 2030 and beyond. It is currently expected to drive £500 million of additional revenue for industry and a further £500 million of wider economic benefits due to the substantial improvements to connections between major cities in the region.⁶

By continuing to support collaboration across the Midlands, we can give our region the best possible chance of a fairer, greener and more resilient

economy. At the same time, we must make sure our short-term transport priorities are part of a Midlands (and UK) wide plan to reduce carbon emissions and support a green industrial revolution.

We have the freedom to look beyond political and spending review cycles, providing a long-term plan for the Midlands’ strategic transport needs. This means we can think about longer-term investment needs and whether new funding approaches are needed to achieve the catalytic change we believe is possible within the Midlands.



Midlands Connect & Midlands Engine	Airports	Shire & Unitary Authorities	West Midlands Combined Authority (WMCA) Councils	Non WMCA City Councils	Chambers of Commerce	Local Enterprise Partnerships	Government Agencies	Government Departments
Midlands Connect	Birmingham Airport	Derbyshire	Birmingham	Derby	Black Country	Black Country	Great British Railways	Department for Transport
Midlands Engine	East Midlands Airport	Herefordshire	City of Wolverhampton	Leicester	Coventry & Warwickshire	Coventry & Warwickshire	National Highways	Department for Business, Energy and Industrial Strategy
		Leicestershire	Coventry	Nottingham	East Midlands	Derby, Derbyshire, Nottingham, Nottinghamshire (D2N2)	HS2	Department for Levelling Up, Housing and Communities
		Lincolnshire	Dudley	Stoke-on-Trent	Greater Birmingham	Greater Birmingham & Solihull	Network Rail	
		Nottinghamshire	Sandwell		Herefordshire & Worcestershire	Greater Lincolnshire		
		Rutland	Solihull		Lincolnshire	Leicester & Leicestershire		
		Shropshire	Walsall		Shropshire	The Marches		
		Staffordshire	West Midlands Combined Authority		Stoke & Staffordshire	Stoke & Staffordshire		
		Telford & Wrekin				Worcestershire		
		Warwickshire						
		Worcestershire						

Figure 3: The partners that we work with



1.3 What we do

Our core function

Our primary mandate from our partners and the Department for Transport is to give clear priorities for investment in:

- **The railway:** currently managed by Network Rail (and others), ultimately transitioning into Great British Railways, subject to legislation
- **The Strategic Road Network:** including motorways and trunk roads managed by National Highways
- **The Major Road Network:** including the other key routes on our road network that connect important economic centres, managed by local authorities.

Our investment priorities contribute towards the development of a robust, evidence-based transport infrastructure pipeline for the region which can help deliver our regional and national ambitions. But it also provides greater certainty: for investors in the region, for the supply chain, for our local authority partners and in helping build an understanding of the future skills needed to develop and deliver the infrastructure the region needs. The rail and road network that makes up our core remit is shown in Figure 4 below.

Legend

- Pan regional rail network
- Strategic and Major Road Network
- Midlands Connect area

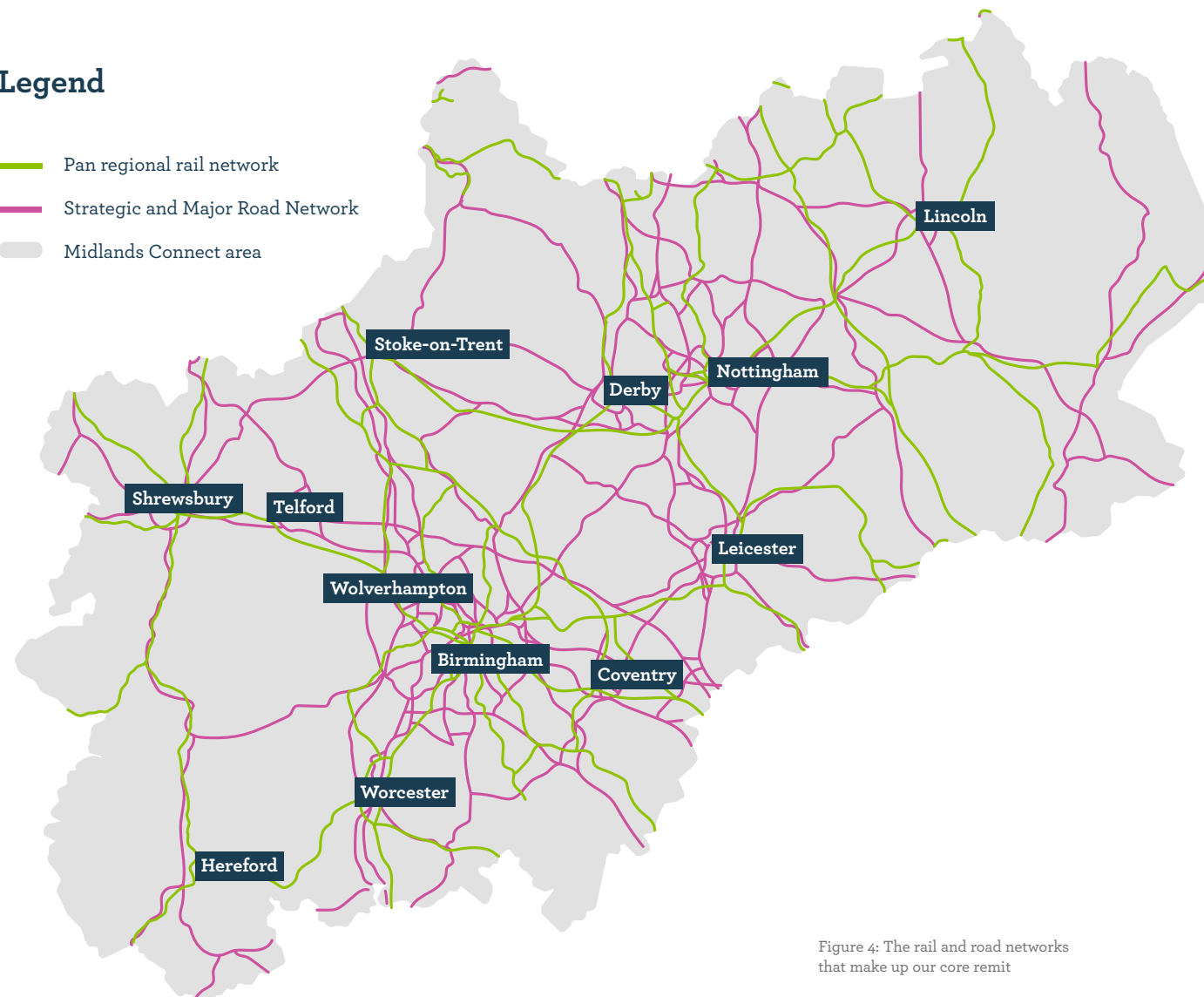


Figure 4: The rail and road networks that make up our core remit

Establishing areas of regional collaboration and innovation

Over the last three years, we have expanded upon our core functions, identifying areas where we can support local authority partners to work at scale across the Midlands. These areas have initially come from small research projects that have focused on specific problems. The recommendations have often explored how improved cross collaboration across the region can help develop transport-related solutions to the challenges we face. Our work in these areas includes thinking about the timelines for, and de-risking the roll-out of, new transport-related technology.

Currently these collaboration areas include:

- The future of rural mobility
- Accelerating the take-up of alternative fuels, including electric vehicle charging infrastructure and fuels for freight and logistics
- Improved smart ticketing and payment mechanisms
- Improving regional capacity and capability to bring forward new infrastructure and transport technology solution ideas.

Our local authority partners will always be the ones to develop and deliver the schemes and policies that are most important to them; indeed, we have showcased some of their great work throughout this plan. Our aim is to help our partners think strategically about what's next for them, learn from each other, share best practice and reduce risk when developing solutions. By doing so, we are building strong working relationships with and between partners, providing the space for collaboration and shared learning to take place across the region and ultimately uniting the full power of the Midlands.



1.4 Our Strategic Transport Plan

This plan is first and foremost a refresh of our 2017 strategy. **It builds on our original strategy⁷ and doesn't replace it.** Our priority areas were clear in our original strategy, and we have since explored them in enough detail to thoroughly understand their costs and benefits. Our evidence base is much stronger, our understanding of our needs is deeper, and our short-term priorities are much clearer. Having completed this research, this plan now sets out a clear set of strategic transport infrastructure priorities for the region.

But the world is dynamic and rapidly changing. Our short-term priorities represent the infrastructure enhancements we believe will be required, even accounting for current uncertainties around travel demands and economic growth. Beyond these priorities, we recognise our longer-term needs will need to be regularly reviewed, and the exact nature of what is needed could well change.

We will therefore be agile, reviewing and evolving our plan as we explore future uncertainties and consider the demand to travel in the medium term and post Covid-19. In addition, through monitoring how our travel needs are changing in response to issues such as climate change and technology, we will review and adapt our plan to ensure it is fit for purpose and that it embraces new challenges and opportunities. Our approach will be open and honest. We will not be afraid to say that something is no longer needed or that some objectives will require difficult choices to be made; we will ensure that we get things right for the Midlands.

It is important to note that this plan only covers the remit of Midlands Connect. Our plan is not intended to be a holistic regional transport strategy. Transport planning for the region is undertaken at several different levels, with clear lines of responsibility between different parties. Figure 5 on the opposite page presents how these different parties perform different functions.

This means that strategies for important aspects of transport planning, such as local trip making, land-use planning, local public transport, behaviour change campaigns, and active modes, sit within other plans and strategies from across the region.

It is imperative, however, that these strategies and plans from across the region work together to achieve the overarching objectives of this plan. The relationship between the strategic transport network and layers of the transport network overseen and managed by other bodies (such as National Highways, Network Rail and HS2 Ltd for national connectivity, and our county and district partners for local connectivity) is essential in optimising the movement of goods and people.

Our plan aims to strengthen the pan-regional strategic transport network and provide a consistent strategic framework within which our partners can plan their own investments on local transport networks. This will ensure that connectivity at all levels is seamless and that sustainable choices are easier to make for end-to-end journeys.

Our journey doesn't stop here. This plan will be supported by the publication of more detailed documents covering a number of topic areas. These documents are described in Chapter 7 of this plan.

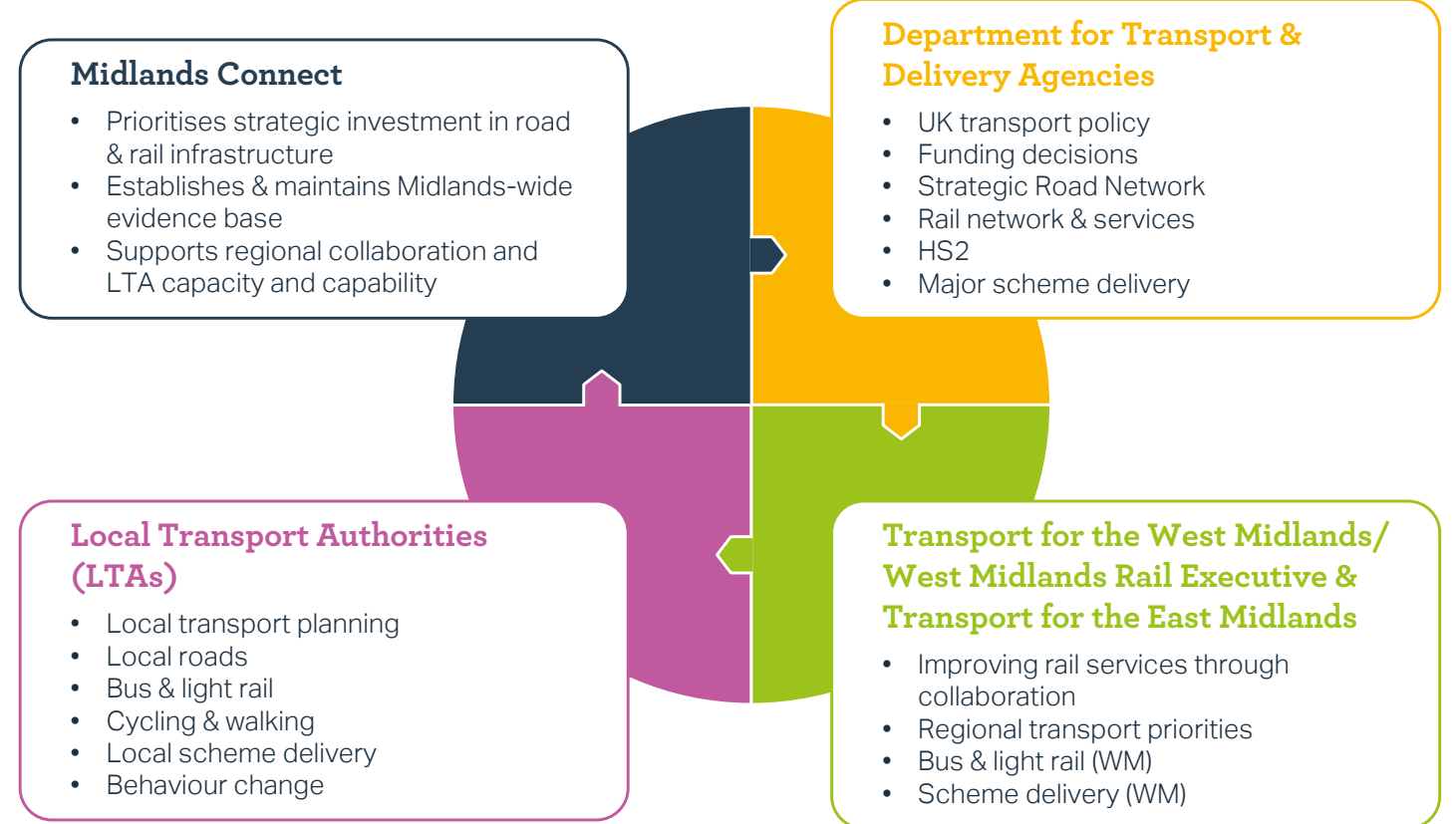


Figure 5: Roles and responsibilities for transport planning, policy and delivery in the Midlands



2

Setting the scene: our 2017 strategy



2. Setting the scene: our 2017 strategy

2.1 At a glance

This chapter looks back at our 2017 strategy, describing the core themes that underpinned it and our achievements over the last five years. Our core themes were:

- The establishment of a spatial framework for strategic transport investment based on four economic hubs and six intensive growth corridors (explained further in Section 2.3)
- The need to enhance east-west connectivity in the Midlands
- Conditional outputs to:
 - Achieve direct, fast rail links across our region
 - Ensure we have sufficient rail capacity to move people and goods
 - Provide improved journey time reliability on our roads
- Make the most of HS2
- Improve digital connectivity
- Improve access to international gateways.

Our achievements since 2017 include:

- Developing our Midlands Engine Rail programme into the region's vision for transforming strategic rail connectivity
- Securing funding for the Midlands Rail Hub
- Identifying a series of priorities for the region's Strategic Road Network (SRN) and seeing several included in the National Highways RIS 2 programme
- Helping our partners to prioritise 'shovel-ready' schemes on the region's Major Road Network (MRN)
- Galvanising the Midlands region around the need for HS2 to be delivered in full. Whilst the Integrated Rail Plan (IRP) has scaled back the original plans for HS2, we believe that the 'one voice' approach of the Midlands has been fundamental in securing high speed connectivity to the West and East Midlands and between Birmingham and Manchester
- Working with our partners to deliver a number of research, collaboration and innovation workstreams.

2.2 Background to our first strategy

Our first Midlands Connect Strategy set out an ambition to turn untapped economic potential in the Midlands into real growth. Our Chairman Sir John Peace said: "We believe that investing in this region's transport can benefit the whole country and create a positive ripple effect to boost the development of industry, skills and housing."

The strategy aimed to build on HS2 as a transformational investment in rail and to complement this with wider investment in road and rail alongside digital connectivity.

Our strategy was built on a strong understanding of the changing economic geography of the Midlands. This was informed by the strategic economic plans developed by our local enterprise partnerships, independent economic analysis, and engagement with the private sector through a comprehensive business survey.

We identified how transport connectivity supports economic growth in different sectors and locations across the Midlands - and importantly how and where it acts as a barrier to growth.

Our Economic Impacts Study (2015) underpinned the rationale for our first strategy. The study showed the economic potential of the Midlands through testing the impacts of 10% and 20% reductions in generalised journey times for key journeys in the forecasted years 2026 and 2036.

The background to our original strategy, published in 2017, is still relevant now.

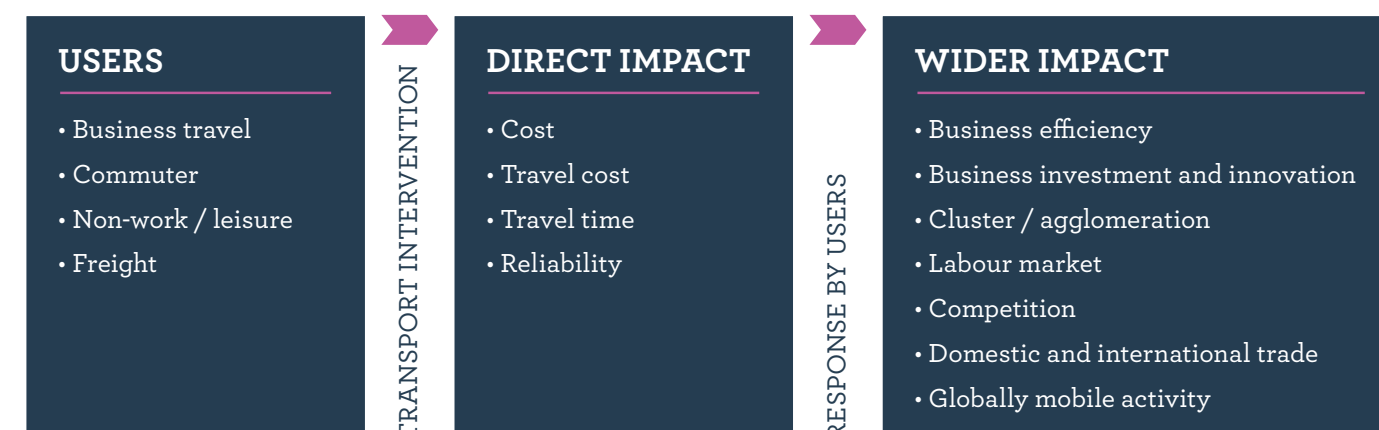


Figure 6: Transport and economic impacts (Source: Midlands Connect 2017 Strategy)

2.3 Key themes of our 2017 strategy

Hubs and corridors

Our 2017 strategy was built on an understanding of how the region could utilise improved strategic connectivity to raise productivity and stimulate economic growth. We developed a spatial framework for investment based on four strategic economic hubs and six intensive growth corridors, which are critical to both the Midlands and the UK as a whole (as shown in Figure 7). The basic principle was to better connect

economic hubs with each other and to the wider UK, enabling the region to increase productivity. Cutting across this was the emphasis to enhance east-west connectivity in the Midlands. Our national road and rail networks are predominantly north-south focused. Many of our proposed interventions are aimed at meeting this need. **Our hubs and corridors have not changed since our earlier work. They remain the core principle by which we examine and develop the major transport infrastructure needs of our region.**

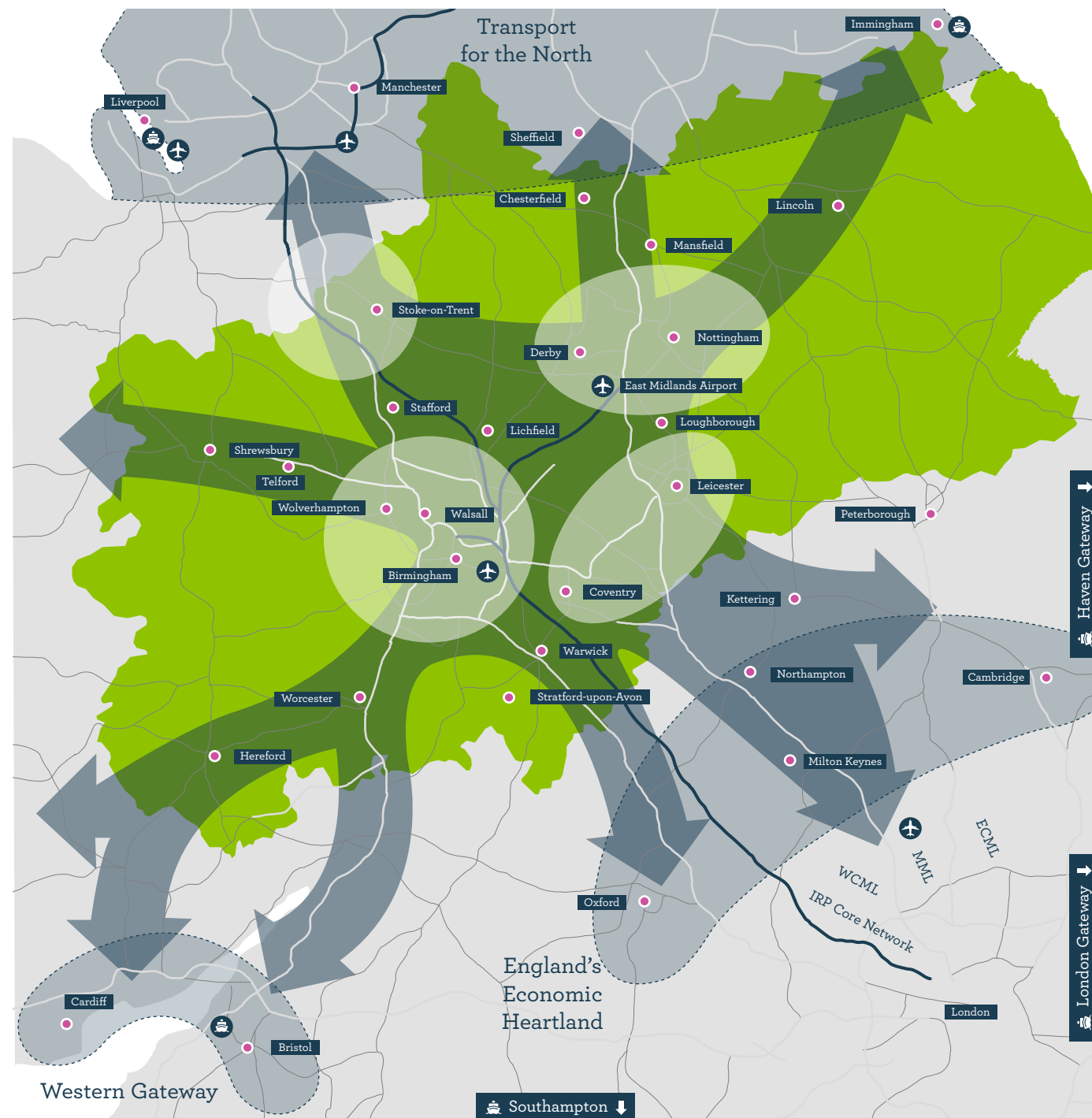


Figure 7: Midlands Connect hubs and corridors

Setting conditional outputs

We distilled the complex needs of strategic rail and road connectivity in the region into four high-level targets, or conditional outputs, for transport (as shown in Figure 8). Our ambition for rail is to have direct, fast links across our region and to ensure we have sufficient capacity to move people and goods.

For roads, reliability is the most critical factor. You should know how long it will take you to travel, regardless of the time or day of the week.

These conditional outputs have driven our technical work since 2017. They have been used to ensure our option development ‘aims high’ and focuses on transformational improvements as the starting point for our business case work.

Since we published our strategy, we have been examining in detail how we achieve these outputs in order to connect each of the hubs both to each other and to the important external connections depicted by our corridors.

While we are focused on achieving transformational impacts, we are pragmatic and committed to ensuring value for money for every pound spent. If a lower cost solution is found that achieves a better balance of cost, deliverability, environmental impact and benefits (for example, coming down to an average of 60mph on a rail scheme), we will support the most appropriate solution for each specific location.

Making the most of HS2

A focus of our 2017 strategy was to make the most of HS2 by; ensuring as many parts of our region as possible could access it, developing growth strategies around stations and utilising the new capacity to run additional services, making full use of the new HS2 lines and our existing rail networks.

Improving digital connectivity

We also recognised that digital connectivity is very variable across the Midlands, in both rural and urban areas and impacts home-working and business activities. This has since become even more important following the Covid-19 pandemic.



Highway Journey Times

“Journey Times should be reliable for people and freight”

The journey time (in normal conditions) should be **no more than 20% higher** than the average journey, any time, everyday.

60 mph



Highway Journey Times

“To achieve a mile a minute on the Strategic Road Network”

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



Rail Capacity

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

Off peak

Everyone gets a seat

Peak

No more than 20 minutes standing

Freight

Sufficient rail freight capacity



Rail Services

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

Key centres served by direct service. Journeys with end to end **speeds of 70mph** where possible

Figure 8: Midlands Connect 2017 Strategy conditional outputs

Improving access to international gateways

Finally, our strategy recognised the importance of improving access to our international gateways, including our major ports, airports and new opportunities such as inland ports and freeports. This remains fundamental to our long-term economic strategy in a post-Brexit world.

Moving forward from 2017

Figure 9 represents the long-term infrastructure programme set out in our 2017 strategy. Our work since has focused on examining the needs and opportunities identified in more detail and considering external changes, including Brexit and a greater understanding of climate change.

Developing our programme of technical work since our 2017 strategy has given us a conveyor belt of projects at different stages of development for future investment. The culmination of this work is the set of short-term strategic infrastructure priorities summarised at the start of this plan.



Partner showcase: Stoke-on-Trent Council

Local transport strategy and light rail

In the short term, the delivery of a transport strategy for Stoke-on-Trent will address a range of issues across the city. In the long term, light rail remains key for Stoke as a viable sustainable form of public transport. Midlands Connect is working with the council to incorporate its aspirations for light rail into the strategic study work we are conducting on the A50/500 corridor.

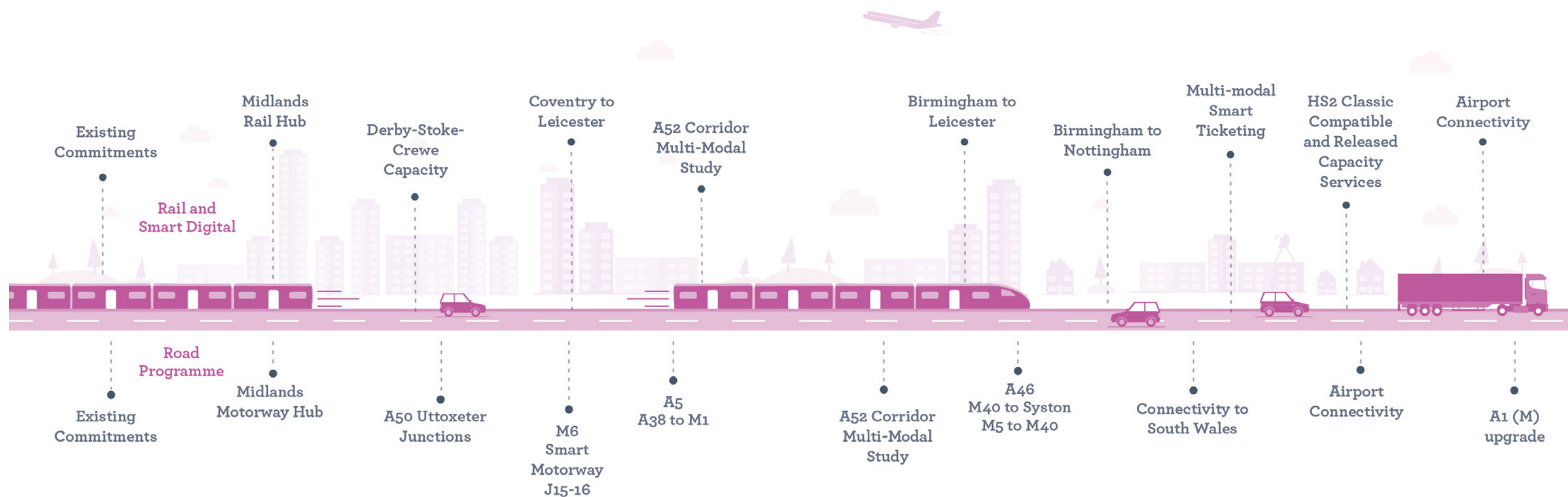


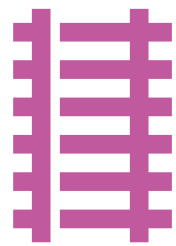
Figure 9: Midlands Connect 2017 Strategy implementation timeline

2.4 Our achievements since 2017



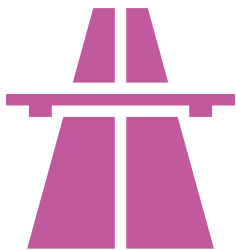
Securing funding for Midlands Rail Hub

In June 2019, after two years working with Network Rail and other partners, we submitted the Strategic Outline Business Case for Midlands Rail Hub to the Department for Transport (DfT). Following this, the scheme was awarded £20 million of funding for the next stages of its development. The Outline Business Case is due for completion in late 2022, which will help determine how to move the project forward to final design and delivery.



Midlands Engine Rail

In September 2019, we evolved our strategic rail corridors programme into Midlands Engine Rail (MER) as the umbrella for the overall regional rail programme which first emerged in our 2017 strategy. MER is now gaining status as the region's vision for transforming pan-regional rail connectivity and is supported by partners from across the region. The Midlands Rail Hub is the flagship MER project, but only part of it.



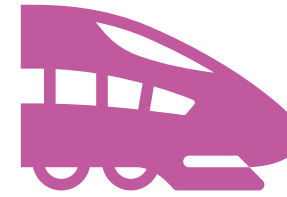
Preparing for the next ten years on the SRN

Our initial work in 2016-2017 identified a series of regional priorities for the next infrastructure enhancements needed on the region's SRN. A number of our priorities were identified and committed to in the DfT's Road Investment Strategy (RIS) 2 programme.⁸ In addition to including specific schemes in the RIS programme, the DfT also acknowledged our work to promote the region's transport corridors as important mechanisms for economic growth and productivity. Our groundbreaking work looking at the A46 as a Trans Midlands Trade Corridor has been recognised in RIS2.



Major Road Network/Large Local Major scheme prioritisation

Following the announcement of the DfT's MRN fund in late 2018, Sub-national Transport Bodies were tasked with prioritising 'shovel-ready' schemes which could be funded and constructed within the 2020-2025 period of MRN1. After gaining the consensus of the partnership, we submitted a list of seven MRN schemes and three Large Local Majors (LLM) schemes. At the time of publishing this plan four of our MRN/LLM schemes have now been granted MRN Programme Entry status and received development funding from the DfT.



HS2

Working with stakeholders from across the country, we proactively enabled regional support for, and commitment to, the full delivery of HS2. The IRP has scaled back the full HS2 proposals, but our regional collaboration has played a key role in securing commitment to high-speed connectivity to the West and East Midlands and between Birmingham and Manchester.



Collaboration and innovation: working with our partners

In addition to progressing the infrastructure priorities in our first strategy, we have also been helping the region by delivering a number of research, innovation and collaboration workstreams. These include:

- Working with Transport for West Midlands and Nottingham City Council to develop a new 'tap and cap' smart ticketing proposal, which would enable users to hop from train to bus to tram on any operator using their bank card and just pay a single daily fare
- The development of a Future of Rural Mobility Toolkit for rural authorities to understand how transport, technology and service provision can be reimaged in a rural context
- Working with the freight and logistics industry to understand the trajectory for shifting heavy goods vehicles and vans to alternative fuels and to understand the new infrastructure required in the region to support this
- Working with local authorities to identify ways in which they can work together to accelerate delivery of electric vehicle charging infrastructure.



3

Looking forward to a new plan



3. Looking forward to a new plan

3.1 At a glance

As the crossroads of the UK for both road and rail, the Midlands and its strategic transport network has a pivotal role to play in driving and maintaining the nation's economy, levelling up the Midlands and the country and achieving net zero emissions.

To help meet these challenges, our partnership has set a series of objectives for the strategic transport network. These include being ready for HS2, improving access to opportunities for all, integrating our local and strategic transport networks, providing fast, reliable and resilient connections, positively contributing to the achievement of net zero and minimising other environmental impacts from infrastructure.

However, our strategic transport network doesn't always work. In order to meet our objectives, we have regional connectivity problems that we need to solve:

- East-west connectivity is poor
- Our rail offer to anywhere other than London is poor
- Our roads are unreliable
- We have significant and specific rural transport challenges

- We need to decarbonise our transport network
- We need better integration between all aspects of our transport network
- We need to improve digital connectivity
- Connecting to international gateways has become even more important since Brexit
- We must respond to the opportunities and challenges from the Covid-19 pandemic.

The challenges we face, our objectives and our connectivity improvement needs are introduced in this chapter.

3.2 Our updated plan

Compared with 2017, the region and the country are now in a very different place due to several external factors:

- The large and growing scale of inequality in the UK and the role of improved connectivity in the government's plans to level up the UK
- The harmful effect climate change, mainly caused by CO2 emissions, is having on our planet, and transport's contribution towards these emissions
- Embracing a new economic world as we move outside the European Union
- Increasing recognition of the role that digital technology can play in changing our economy and opening new and cleaner connectivity opportunities
- The economic impact of Covid-19 and the potential changes in travel behaviour that may occur following the pandemic.

As we have developed our plan with partners, the consensus on the overarching mission statement is that we should be building back better from the economic impact of Covid-19, but in a way that creates a fairer, greener and stronger Midlands. The building blocks of our updated plan are shown in Figure 10. These are:

- The **three grand challenges** faced by the Midlands – and the rest of the country
- The **objectives** our partners have set for our plan to ensure it can help meet these challenges
- The improvements that need to be made to **regional connectivity** if we are to achieve our objectives.

These challenges, objectives and regional connectivity needs have informed the priorities we have identified in Chapter 5 of this plan.



Figure 10: The building blocks of our updated plan




3.3 Three grand challenges

To achieve our vision of a fairer, greener and stronger Midlands, we have identified three grand challenges that strategic transport investment must help tackle.

These challenges are at the heart of the government's National Infrastructure Strategy (NIS) and are explored in more detail within Chapter 4.


- 1** Addressing inequalities nationally and across the Midlands to help level up the region and the UK
- 2** Decarbonising transport and adapting to climate change
- 3** Driving a resilient economy



FAIRER

1. Levelling-up and strengthening the region and UK

- Ready for HS2 and maximising its opportunities
- Enhancing quality of life for Midlands residents
- Integrating with local and national networks to allow end-to-end journeys



GREENER

2. Decarbonising transport and adapting to climate change

- Positively contributing to the 'Net Zero' target by 2050
- Ensuring resilient networks
- Minimising environmental impacts from delivering new infrastructure



STRONGER

3. Driving resilient economic growth

- Providing fast, reliable connections to allow Midlands businesses to grow
- Enabling population and employment growth

Figure 11: Our three grand challenges and the objectives we will use to guide the development of this plan

3.4 Our objectives

Figure 11 shows the three grand challenges that our plan will focus on and the objectives our partners have set to ensure the strategic transport network in the Midlands can help respond to these. These objectives build on our 2017 strategy but have been expanded to fully consider the importance of decarbonising transport and ensuring resilient economic growth. We have taken into account recent shocks such as Covid-19, but also longer-term uncertainties around issues such as climate change, international trade and housing supply. These grand challenges and objectives provide the strategic framework for this plan and form the basis for the evidence we have examined to prepare it. Our objectives are summarised in Figure 11.

Fairer: levelling up the region and the UK

In order to help level up the Midlands and the UK, we will ensure our strategic transport network in the Midlands:

- Is ready for HS2:** we want the connectivity provided by our regional transport network to enable the Midlands to exploit the economic and regeneration potential of new high-speed rail. HS2 will be used as a catalyst for inclusive prosperity and opportunity across the Midlands
- Enhances quality of life for residents of the Midlands:** we want a smart, low-carbon strategic transport network that supports inclusive economic prosperity, improves quality of life and provides accessibility to employment, services and leisure activities for all
- Integrates with local and national networks to allow end-to-end journeys:** we want to work with national and local partners to identify the infrastructure and future mobility services needed to improve integration between strategic and local transport infrastructure, providing for seamless, end-to-end journeys.

Greener: decarbonising transport and adapting to climate change

In order to decarbonise transport and adapt to climate change, we will ensure our strategic transport network in the Midlands:

- Contributes to achieving net zero carbon by 2050:** we want to help businesses and local authorities of the region to work together, with government, to identify how the whole transport sector can decarbonise. We have a strong role to play, but the responsibility for policy making and implementation of this objective lies with others
- Is resilient to climate change:** climate change is already happening and we are experiencing more extreme rain, heat and cold as a result. This impacts on our transport infrastructure and we want to ensure it is resilient to these changes. This also affords opportunities to coordinate planning and investment across multiple areas, such as by integrating flood defence plans with upgrades to transport infrastructure
- Minimises the environmental impact of delivering new infrastructure:** we want to work with partners to set standards and expectations for how delivery bodies build and operate infrastructure in the region. These standards should ensure development leaves the natural environment and biodiversity in a better state than before.

Stronger: driving resilient economic growth

Recent events such as Covid-19 have demonstrated the importance of ensuring resilience to external shocks to the economy. Uncertainty around issues such as climate change, housing supply, future jobs and skills and how the global economy changes poses further threats to our economy. To build a resilient future economy, we must ensure our strategic transport network in the Midlands:

- **Provides reliable connections:** we want our strategic road and rail networks to provide guaranteed journey times, enabling businesses in the Midlands to access skilled workers and reduce the costs of accessing supply chains and national and international markets

- **Enables population and employment growth:** we want strategic transport investment to accelerate the delivery of planned housing and employment growth and unlock potential additional growth as part of a wider transition to net zero.

In delivering these two objectives, our strategic transport network can help drive the immediate economic recovery from Covid-19 and ensure we provide resilience against future economic 'shocks'. At the same time, it will be important to understand long-term changes in travel behaviour brought about by changes to the economy, how we live and work, and how this may affect the types of strategic transport infrastructure investment we need.



Partner Showcase: Black Country Transport

Black Country multi-modal corridors:

The Black Country has an ambitious 'Connected for Growth' strategy. £350 million of a £1.2 billion 'ask' looks at multi-modal corridors across the region, including the A454 in Wolverhampton, the A461 in Dudley and the A41 in Walsall. In Sandwell, the priority is enabling local, regional and national traffic movement on the M5 Junction 1. The £1.2 billion plan will create 1,600 new jobs, over 28,000 new homes and contribute significantly to the ability of the West Midlands to achieve net zero by 2041.

Partner Showcase: Solihull Metropolitan Borough Council

Improved bus connectivity:

The local centres in Solihull need to be better connected. The council would like to see significantly improved bus services in terms of quality, frequency and priority between the UK Central Hubs (HS2 Interchange Station/NEC/Birmingham Airport), Solihull town centre, Blythe Valley Business Park and Knowle/Dorridge.



3.5 The problems we need to solve

If we are to be successful in improving strategic connectivity across the Midlands, we need to understand where we are starting from.

Our regional connectivity needs

Our objectives highlight the outcomes our region is seeking from an improved strategic transport system, but they don't tell us the problems we need to fix in order to achieve them.

The UK Government's Industrial Strategy⁹ explains that strong local economies around the world tend to share some key attributes; they have a good supply of skilled labour, they are well connected and have land available for homes, offices and factories and they have rich innovation ecosystems, often built around a university. Whilst the Midlands has many of these characteristics within individual areas, transport connections in the region are often too slow and provide an unreliable service. This means that we do not maximise the benefits of connecting our businesses and people across the region.

The dispersed nature of the Midlands population makes it more expensive for people, goods and ideas to move around, holding back innovation and making it harder for people to find jobs that match their skills. Ultimately, this lowers productivity and wages.¹⁰ The distribution and density of the region's population makes connectivity even more important and yet many of our most important road and rail connections are failing us.

- In 2019, there were over 33 million hours of delays across the motorway network in the Midlands¹¹
- It takes over four hours to travel approximately 140 miles from Lincoln in the north-east of the region to Hereford in the south-west by train - more than four times longer than it would take to travel a similar distance from London to Birmingham once HS2 opens

- In the North, the two biggest city economies (Manchester and Leeds) enjoy connections of five trains per hour, taking 50 minutes each. In the Midlands, our two biggest cities (Nottingham and Birmingham) are connected by just two trains per hour, taking more than 70 minutes. These city pairs are almost identical distances apart
- In many cases, travelling to London is easier than across the region. For example, there are no direct trains between Coventry and Leicester, with a journey time of around an hour (with a change at Nuneaton) to travel just 29 miles.¹² Passengers can travel to London in the same amount of time, despite the journey length being 94 miles. Just 3% of people travelling from Coventry to Leicester do so by train, whereas approximately 59% use the train to travel to London
- Our poor east-west connections don't stop at our railways. There is currently only one full dual carriageway standard road (with grade separated junctions) that traverses just a small section of the Midlands, linking west to east - the M42/A42 corridor which links Birmingham to Nottingham. This is compared to the M5, M6, M1 and M42/M40, all of which run north-south as continuous full motorway standard links from one end of the region to the other.

We have many challenges to overcome to achieve our objectives and this will require all partners and stakeholders to work together. The challenges we need to overcome can be summarised through nine 'regional connectivity needs'. These are shown in Figure 12 overleaf.



Figure 12: Our key regional connectivity needs

Improved east-west connectivity

Our first strategy identified that the key to a more productive Midlands was to improve the connectivity between east and west. That remains vital today if we are to grow a stronger, more productive and resilient economy.

Ensuring fast and reliable connections to international gateways

The Midlands is one of the largest exporting regions in the UK, and our businesses need good access to external markets. In achieving that, we can build on what we're good at, helping to grow our economy and level up our region. The designation of two freeports in the Midlands (Humber Ports and sites around East Midlands Airport) are an indication of how important exporting our goods and services are to our economy.

A competitive pan-regional rail offer

The rail offer from most of our cities to London is generally good (with notable exceptions such as Hereford and Worcester). Average speeds by rail to London from Coventry and Leicester are 86mph and 93mph respectively. From Hereford and Worcester, average speeds by rail to the capital are 49mph and 54mph respectively.¹³

There are other pockets of good performance on our rail network: the fastest rail journey time between Birmingham and Derby (33 minutes) compares very favourably to the fastest highway journey time between these two cities (55 minutes); while travel between Birmingham and Coventry on our rail network can take as little as 19 minutes, compared to a fastest journey time of 35 minutes by road.

However, on several key links either within the Midlands or beyond our area, the speed and frequency of our rail offer is poor. In addition to the poor rail connectivity between Birmingham and Nottingham and Leicester and Coventry identified above:

- It takes nearly 90 minutes to travel between Birmingham and Hereford
- It takes nearly 50 minutes to travel between Derby and Stoke, with passengers often having to change. The average speed of trains on this route is 36mph
- The train between Nottingham and Lincoln takes nearly one hour.

If rail is to be a genuine option ahead of road for passengers and freight and play a strong part role in decarbonising how we move, it has to offer a far better service than it does today.

Making our roads more reliable

The Midlands has a competitive advantage in a lot of industrial sectors simply by being in the middle of the country. Industries that rely on good road connectivity to the rest of the UK often locate here. In order to keep that competitive advantage, grow those industries and help them be more productive, we have to provide a faster and more reliable network that is well connected to international gateways and freight clusters.

Solving rural transport challenges

A lot of emphasis has been given to the role of cities in delivering levelling up, decarbonisation and economic growth, but rural authorities have been missed somewhat. 58% of our area's population live outside of the main cities and rural areas need to be supported to deliver on all of our overall objectives. Taking into account the way that people access services and how organisations provide them, using digital means to support physical infrastructure and reducing the need to travel forms part of our focus.

Improving digital connectivity to reduce the need to travel

In a Midlands Connect poll of residents in September 2021, 80% of respondents indicated they would be willing to take fewer trips by either staying at home or meeting virtually to reduce their carbon footprint.¹⁴ The increased use of digital means of communication and ways of working during the pandemic has shown us what is possible and how we can rethink the need for travelling to and for work (and for other needs). It is vital we don't consider physical movement alone when we discuss our strategic connectivity needs.

Decarbonising transport

All long-term planning must address how to eliminate carbon emissions and meet interim targets for their reduction. The Midlands is no exception and faces significant challenges, including the significant proportion of transport emissions from road-based transport, high emissions in rural areas of our region and how to encourage electric vehicle use in areas that rely heavily on on-street parking.

Responding to the impacts of Covid-19

The pandemic requires that we need to understand; what part transport connectivity can play in helping the regional economy bounce back from the shock and the role it can play in providing resilience to potential future 'shocks'; and secondly how changes in work and travel patterns might affect the future demand for travel.

Better integration between local, regional and national transport networks

The people and businesses that use our transport networks make no distinction between what is 'local' and what is 'strategic' infrastructure; to them there are only roads and railways. As such, the planning we target at large, regional infrastructure needs has to be more integrated with what local authority partners are planning for in the same geography. For example, a better integrated public transport network in the Midlands can help facilitate modal shift from road to rail.

¹³. See 12 for rail journey times presented in this section
¹⁴. Midlands Connect poll of Midlands residents (undertaken by Censuswide), September 2021



3.6 Fix the Midlands, fix the nation

The emergence of more Sub-national Transport Bodies since we published our original strategy in 2017 has meant that we are now able to collaborate with other regions to understand the connectivity challenges we face at both national and regional levels.

We are keen to progress discussions alongside our partners and stakeholders on how transport linkages can be improved across the UK, particularly in the context of delivering key national and regional priorities to level up the UK and boost its global impact.

The strategic highway and rail networks passing through the Midlands are critical to supporting the needs of the entire UK economy. A number of our strategic rail and road priorities that are discussed in Chapter 5 will help to support improved UK connectivity. This includes those set out below.

HS2 and the Integrated Rail Plan (IRP): the proposals put forward in the IRP will improve connectivity between the Midlands and London, the North West, Yorkshire (via an upgraded East Coast Main Line plus potentially other options that emerge from further investigation into how to get HS2 trains from the East Midlands to Leeds), the North East and Scotland. They will provide a low-carbon alternative to domestic air travel and release capacity on the West Coast mainline to further enhance connectivity. HS2 investment at Crewe could also improve rail access for people living in North Wales (via the North Wales Main Line) and additional connectivity between England and Wales and onward to the island of Ireland.

Midlands Engine Rail (MER): our plans for the Midlands Rail Hub (MRH) will improve connectivity across the region but also better connect the professional services sectors of South Wales and the Midlands through enhanced rail services. We're also building on our MER proposals by working with other Sub-national Transport Bodies to develop plans for improved rail connectivity between our region and economic centres elsewhere. Building on HS2 and the proposals in the IRP, our initial rail corridor focus will be on East Midlands – Manchester, Leicester – Leeds, East Midlands – Cambridge, Birmingham – North West and connections to immediate markets towards London, such as Milton Keynes.

Rail electrification: as part of the proposed nationwide rolling programme of electrification, we are supportive of short-term priorities identified for both the East and West Midlands. Connecting London, Bedford, the East Midlands and Sheffield, electrification of the Midland Mainline has long been a priority for the Midlands. This will deliver faster journeys for communities along the route, as well as support the decarbonisation of the rail network. In the West Midlands, shorter sections of electrification will connect wider routes to enable more strategic connectivity for passengers and freight, including more of the routes to ports at Felixstowe and Southampton.

Improving our strategic road network: as part of our strategic road corridor programme, we are already developing long-term plans for the A46, A5, A50/A500 and A1 that will improve cross-boundary road connectivity. We also want to work with other Sub-national Transport Bodies to look at other cross-boundary road linkages. Further investigation work will initially focus on the A15 from Peterborough to Hull, the A49 from Cardiff to Manchester via the Marches and the A14 from Felixstowe to the M1.

Access to airports: our range of strategic highway and rail schemes will improve surface access to our international gateways at Birmingham and East Midlands airports and the onward domestic connectivity they offer.

Supporting freight across the UK: connecting the country's international gateways (our airports and ports) and freight clusters through fast and efficient freight connectivity will require investment in the Midlands. We need to take a cross-boundary approach to thinking about where key freight and logistics sites should go. We also need to work with other Sub-national Transport Bodies to identify and improve capacity pinch points throughout the UK, for example at Ely for rail freight travelling from Felixstowe to the Midlands and the North. Improvements to the strategic transport networks in other parts of the country can affect freight movements through the Midlands. For example, improved east-west connectivity along the M62 corridor could increase the trend whereby larger unitised cargo is being shipped through the Humber ports as opposed to

more southerly ports. We are also collaborating closely with government and other Sub-national Transport Bodies to develop a UK-wide view of the alternative fuels infrastructure needs of the freight and logistics sector across all modes.

Maximising the opportunities of freeports: with the announcement of the government's preferred locations for freeports, there is an opportunity to exploit the two new freeport proposals that directly serve the Midlands, increasing both the cross-boundary movement of goods and international exports from the region. A Humber Freeport would rely on good access to the East Midlands, Humberside and Doncaster airports to maximise the opportunities for goods distribution across the UK. There is also the proposed East Midlands Freeport, on sites close to East Midlands Airport, which is the largest air freight terminal in the UK. This site is already strategically located, with opportunities to strengthen the existing road and rail freight infrastructure, thereby improving connections to other parts of the country, including seaport-based freeports.



Figure 13: Geographical coverage of Sub-national Transport Bodies



4

The Midlands as a place: fairer, greener and stronger



4. The Midlands as a place: fairer, greener and stronger

4.1 At a glance

This chapter explores the three grand challenges we face.

Fairer: levelling up the Midlands

The Midlands matters:

- We have an economy the size of a small country and a population greater than our devolved nations combined
- We account for a quarter of all UK manufacturing jobs. We are home to the largest number of medical technology and device companies in the UK and are the UK's largest logistics hub
- Over 100,000 people are employed in professional and financial services in Birmingham, and in Nottingham the sector employs over 70,000 people
- Pace is gathering in the region around rich and diverse specialisms in low carbon energy, based on historic sector strengths and wide-ranging natural assets.

Nevertheless, there is a significant gap between the productivity of the Midlands and the rest of the country, part of which is due to the poor transport infrastructure in the region.¹⁵

Regional connectivity need:

Throughout this chapter we use icons to identify the key regional connectivity improvements needed to help meet the challenges described.

Greener: decarbonising transport and adapting to climate change

The threat of climate change is now well established. Transport contributes 27% of the nation's carbon emissions and is now the biggest single contributor.¹⁶ In the Midlands:¹⁷

- Road transport generates 96% of carbon transport emissions
- Heavy goods vehicles (HGVs) make up a higher proportion of transport emissions than elsewhere
- More carbon is emitted in shire county areas than in our cities
- Journeys of over 10 miles in length contribute 66% of carbon emissions from cars.

Whilst the government has already created net zero commitments, it now needs to work with industry, stakeholders and the public to eliminate carbon from transport.

Stronger: driving resilient economic growth

Covid-19 has caused hardship for individuals, businesses and communities. Wider challenges such as climate change, international supply chains and access to labour will make our economic future more uncertain. We must understand how infrastructure can be used to stimulate our regional economy and support long-term resilience to change. We must also understand the impacts of the pandemic, particularly in terms of how people connect and move about, and build them into our planning for infrastructure - our early analysis suggests that overall transport demand could recover to pre-pandemic levels (2019) by between 2030 and 2034. As such, we must continue to plan for a continuing growth in travel demand but seek to manage that growth to ensure that the negative impacts of congestion and emissions are mitigated.

4.2 Fairer: levelling up the Midlands and the UK

Levelling up has become the central message of this government, with the Levelling Up White Paper published in early 2022. The Levelling Up White Paper was published to demonstrate the government's commitment to ensuring that areas and people are no longer left behind and that everyone feels they have access to opportunities.

Our definition of levelling up

As we see it, **levelling up occurs on three levels: national, regional and local.**

Levelling up nationally involves addressing the imbalance between London and the South East and the rest of the country. In transport terms, this will be achieved by improving strategic connectivity, journey times and reliability to enable increased opportunity, productivity improvements and economic linkages through supply chains. Enhancing infrastructure will stimulate private investment, enabling the Midlands' economic sectors to integrate into the national and global economy.

Following Brexit, a 'Global Great Britain' will require better connectivity to key ports and airports, including maximising the benefits from new freeports. In the context of a different international trading landscape, greater investment will be needed to secure the confidence of key sectors such as automotive and manufacturing (both of which involve high levels of exports to Europe), which support many of the region's jobs and smaller businesses. Evidence from the Midlands Engine indicates a significant gap between the economic prosperity of the Midlands and the rest of the country. In 2017, gross value added (GVA) per capita¹⁸ in the Midlands was nearly £22,000, which represents 92% of the England (minus London) average. If this gap was closed, the Midlands economy would generate an extra £20 billion each year.¹⁹

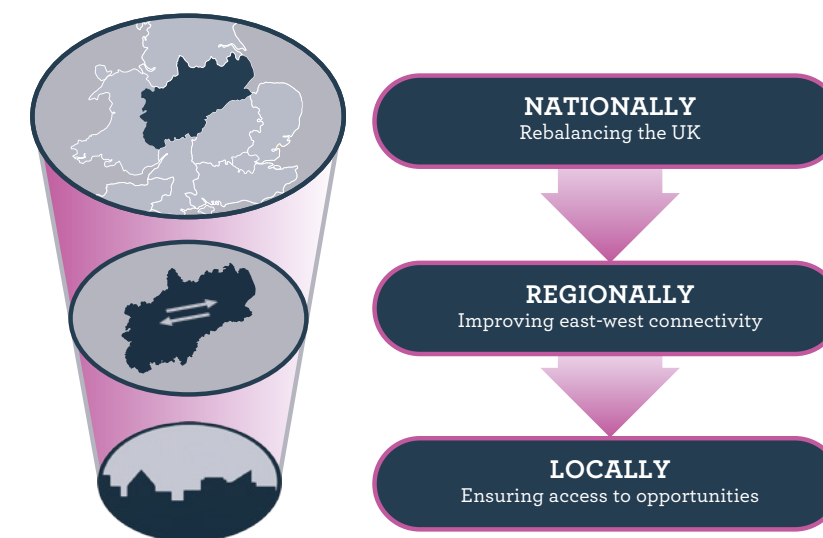


Figure 14: Our view is that levelling up occurs at three levels: national, regional, and local

Regional connectivity need:



Fast and reliable connections to international gateways

The Midlands Engine reports that productivity is the key factor explaining the GVA per capita gap in the Midlands. In the region, productivity performance compared to the national average improved slightly after the 2008 recession but has remained relatively static since 2013. By 2017, productivity in the Midlands was 94% of the England (minus London) average (or 82% if we compare it to all of England).

Transport infrastructure has been identified as one of the four main barriers to achieving the levels of productivity required to close the gap between the region and rest of the country. The connectivity, journey time and reliability improvements enabled by transport investment could drive productivity improvements by ensuring good access to supply chains and expanding customer and labour markets.

At a regional level, levelling up involves linking all our areas into national strategic transport networks and our main economic centres, reducing economic isolation and spreading the tentacles of growth to all corners of our region.

The Midlands' economy has several sectors that rely on transport and connectivity in one form or another. Improving the service our networks provide

“Addressing regional disparities is part of our objective to support sustainable economic growth across all regions of the UK. This means supporting faster growth in low productivity regions and balancing this with maintaining the economic performance of high productivity regions.”

NIC, 2020.

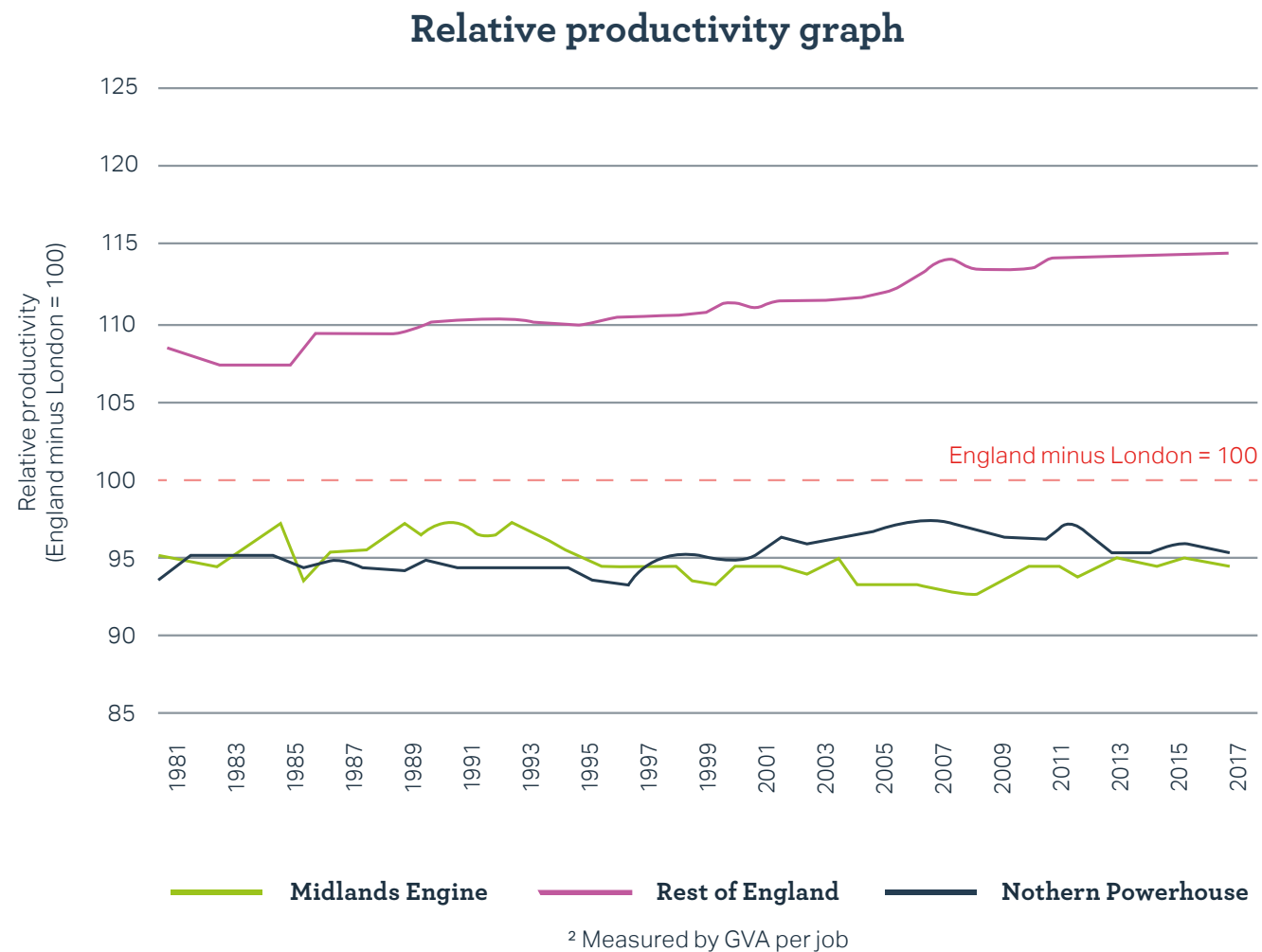
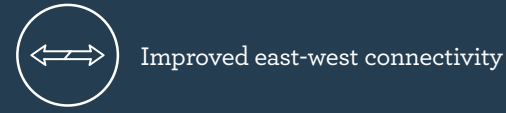


Figure 15: Relative productivity (Source: Cambridge Econometrics calculations, ONS)

Regional connectivity need:



to businesses (by ensuring good access to supply chains, customer markets and labour) at a regional level drives clustering effects and productivity benefits. In doing so, we make places more attractive for investment and can cut the productivity gap, driving jobs growth and improving prosperity across the region.

Levelling up locally is about our local authority partners working to ensure better connections to and from localised areas where economic isolation, poor social mobility and deprivation are hindering opportunities.

Our research indicates that the Midlands performs poorly overall when it comes to social mobility, calculated using a variety of measures including the quality of schools/educational institutions disadvantaged children attend, the grades they receive and wages they ultimately command. The majority of districts within the Midlands fall into the bottom 30% of authorities when it comes to social mobility in England. Within the Midlands Connect area 18% of districts are in the bottom 10%, with a further 21% within the bottom 10-20%.²⁰ This is presented spatially in Figure 16 (page 43), with areas of poor social mobility defined as ‘cold spots’.

Poor transport accessibility is a factor in social mobility performance. The social mobility index report²¹ identified that higher performing districts benefitted from excellent transport links with short access/egress times to local train stations.

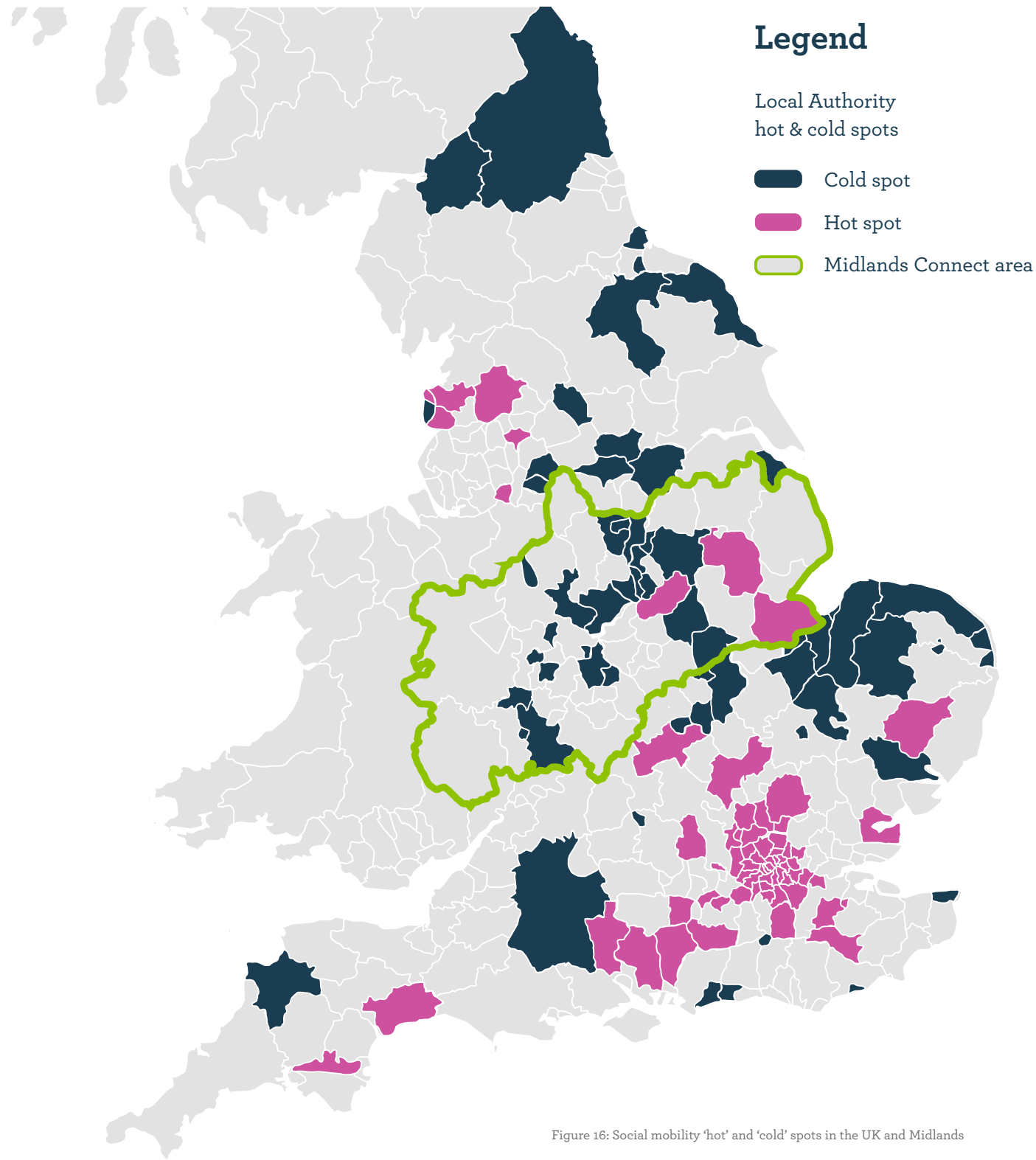
Within the Midlands, we have undertaken some initial work looking at access to both higher and further education by public transport. There was a noticeable trend between how much choice a district had and their performance on the social mobility index, where higher choice generally equalled a better social mobility rank.

Figure 17 (page 44) demonstrates that areas like Birmingham, which perform well on the social mobility index, have more further education choices within a 1 hour time band via public transport, compared to those areas that perform poorly such as Derby and Stoke-on-Trent.

Our remit largely covers the first two levels at which levelling up occurs, with local authorities responsible for identifying how to improve local accessibility to opportunities. However, we want and need to be part of the local accessibility discussion - ensuring that the national, regional and local networks are well integrated is a key part of levelling up locally. Initially, we will do further work to look at how the infrastructure investment pipeline outlined in this plan impacts on transport choice, accessibility and social mobility, particularly in rural areas, and feed this into our business cases for the major infrastructure priorities we are promoting.



20. How Strategic Connectivity Facilitates Social Mobility in the Midlands, Midlands Connect internal research, 2021
 21. The Social Mobility Index, Social Mobility & Child Poverty Commission, 2016



Time periods	Birmingham	Derby	Nottingham	Rutland	Sandwell	Stoke-on-Trent	Wolverhampton
Less than 120 minutes	95.00	95.00	59.00	48.00	91.00	35.00	71.00
Less than 90 minutes	69.00	50.00	44.00	28.00	68.00	18.00	49.00
Less than 60 minutes	35.00	12.00	22.00	8.00	34.00	11.00	17.00
Less than 45 minutes	20.00	5.00	14.00	3.00	16.00	7.00	7.00
Less than 30 minutes	8.00	2.00	7.00	1.00	5.00	3.00	2.00
Less than 15 minutes	1.00	0.00	1.00	0.00	0.00	1.00	0.00

Figure 17: Public transport access to further education by local authority and journey length

Describing our economy

To level up the national economy, our regions need to understand their strengths and develop economic growth plans that build on those strengths. Midlands Connect's role is to then identify the transport and connectivity needs of different industrial sectors to

ensure that we are planning network needs according to the specifics of our economy. Our region's sectoral strengths include those set out below; each has connectivity needs, both physical and digital. By understanding these needs and promoting the infrastructure requirements that meet them, we will be able to improve productivity across the region.



Sectors relying on efficient road networks



Manufacturing

Our manufacturing sector accounts for a quarter of all UK manufacturing jobs and production. The advanced manufacturing heartland in the central Midlands area is home to leading companies such as Jaguar Land Rover, JCB, Toyota, Rolls-Royce and Alstom. Our road corridors are vital, supporting access to customers, supply chains and international gateways for these businesses.

In the ceramics industry we have over 350 businesses in North Staffordshire, accounting for 32% of all UK ceramics businesses and 60% of all jobs. The industry is worth around £650 million to the economy, while related tourism in Stoke-on-Trent attracts over four million visitors and generates over £850 million per annum.

Regional connectivity need:



Making our roads more reliable



Food and drink production

We have strong food and drink production in locations such as Burton upon Trent and Leicester, together with clusters of food-related farming in Worcestershire, Herefordshire, Shropshire and Staffordshire. Lincolnshire has the highest concentration of food production and agritech in the Midlands and is home to over 60 fish-processing-related companies which process 70% of UK fish. These sectors need reliable transport links for supply chains and customer markets to maintain their competitive advantage.

Regional connectivity need:



Making our roads more reliable



Mineral extraction

Mineral resources make an essential contribution to the country's prosperity and quality of life. Sand and gravel, which account for about 40% of national aggregate production, is used primarily for construction. In the Midlands, important mineral extraction sectors include those associated with the quarrying of ornamental and building stone, limestone, gypsum, chalk and slate, the operation of gravel and sand pits, plus the mining of clays and kaolin.

These sectors employ large numbers of people in the Midlands, particularly in areas of the East Midlands. They play a crucial role nationally in providing the raw materials to build the country's essential infrastructure. These sectors require efficient and reliable transport connectivity from the Midlands to all different parts of the country.

However, the minerals industry does have some negative impacts on transport, particularly where large lorries and equipment have to use small, local roads to access and egress quarries.

Regional connectivity need:



Making our roads more reliable



Freight and logistics

Freight is particularly important in the Midlands; the freight sector in the region plays a crucial role in powering the UK's logistics network, exporting £43 billion worth of goods to 178 countries.²²

Our economy is a significant generator of freight movements and our location means the region is the home of many freight-related businesses and those that rely on the supply chain.

However, our strength in freight means that this sector represents 21% of carbon emissions from surface transport in the Midlands, compared to around 17% nationally.²³

Regional connectivity need:



Fast and reliable connections to international gateways

Regional connectivity need:



Decarbonising transport

Regional connectivity need:



Making our roads more reliable

Sectors needing fast, reliable and frequent rail services



Professional services

Over 100,000 people are employed in business, professional and financial services in Birmingham, including companies such as Deutsche Bank; 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 have a presence in the city. However, as described in our first strategy, the Midlands is underrepresented in terms of professional services and accounts for only 11% of UK professional services GVA showing the potential for growth in this sector. While technology will play an increasing role in the business connectivity needs of this sector, agglomerations will still need to be created and deepened for productivity to increase. This sector requires strong city-to-city rail links, both within the region and to external markets, as well as commuter rail networks to service staffing needs.

While increased home and remote working may reduce the number of trips made per employee, over time the growth in total job numbers will mean future demand will exceed pre-pandemic levels. Effectively, the density of jobs per hectare will be higher, with only a proportion of employees being there at any one time.

As we cover in more detail in Section 4.4, some initial work indicates it could take ten years before we see increases in rail demand exceed pre-pandemic levels. Prior to Covid-19, passenger conditions were already unacceptable on many peak services with severe overcrowding. This 'lag' could be helpful economically, as it allows time for infrastructure development and delivery to catch up with the increases in demand.



Medical and life sciences

The Midlands 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 centrepiece at BioCity, to Birmingham, with the newly opened Institute for Translational Medicine.

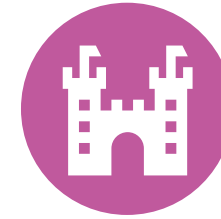


Regional connectivity need:



Establishing a competitive pan-regional rail offer

Sectors needing bespoke approaches to transport



Visitor economy

The recent upsurge in domestic tourism, whether through city breaks or visits to more rural areas, provides a unique opportunity for the Midlands to realise its potential as a visitor destination. Locations such as the Peak District, the Lincolnshire Coast, Stratford-upon-Avon's Shakespearean heritage and the Staffordshire Moorlands have excellent potential to develop their local economies while also providing timeless experiences and contributing to low carbon travel. The attractiveness of our major cities for short breaks means we need to consider this market when planning rail improvements between urban areas.

However, we are aware that the current transport infrastructure frequently constrains peak demand, and current transport planning struggles with seasonality. We will work with partners to address this and support the sector.

Regional connectivity need:



Better integration between local, regional and national networks



Rural economies

Within our region, 15% of people in the West Midlands and 27% of people in the East Midlands live in truly rural areas.²⁴ The make-up of rural communities and businesses in the Midlands is different to more urban areas, as are the transport and access issues they face. Specific challenges in rural areas include:

- Poor public transport connectivity in rural areas reinforces the use of cars and results in overall trip distances being much longer
- Transport-related carbon emissions in rural areas are a disproportionate part of the overall transport emissions in the Midlands²⁵
- Average weekly transport costs are higher in rural hamlets and isolated dwellings when compared to urban areas, and rural areas are on average nearly twice as far from their nearest services than urban areas.

The changing economic geography brought about by Covid-19 has also increased the focus on the specific economic needs of rural areas with regards to transport. A different approach is required in rural areas. Exploring this, and the role of new technology solutions, such as Mobility as a Service (MaaS), will help address the challenges identified.

Regional connectivity need:



Solutions to rural transport challenges



Our economic opportunity

In its prospectus for the Forum for Growth in December 2020, the Midlands Engine set out a portfolio of more than £17 billion worth of investment opportunities.²⁶ These included:

- Continuing to exploit the opportunities of Coventry City of Culture
- The Commonwealth Games taking place in Birmingham in 2022
- The East Midlands Development Corporation
- A £381 million investment opportunity in Stafford Station Gateway
- A further £500 million opportunity at Rugeley Power Station
- An investment potential of £1 billion in the South Derby Growth Zone
- £1 billion of investments across Leicestershire
- Investment opportunities of £2 billion at the UK Central Hub and HS2 Interchange in Solihull
- £350 million at Birmingham International Station
- Huge development opportunities around the ports of Grimsby and Immingham
- Creating a new Ceramic Valley Investment Zone in Staffordshire.

Our 2017 strategy identified wider growth sites across the Midlands that this plan will continue to support in addition to the above. As we develop more detail on specific schemes or initiatives, we are working with the Midlands Engine to update and enhance our understanding of growth opportunities, including new initiatives such as the Constellation Partnership spanning areas of Staffordshire and Cheshire, gigafactories and freeports. For example, our work on the A46 corridor is deepening our understanding of the growth potential along the whole corridor and how transport investment can accelerate delivery of this growth.

²⁶ Midlands UK Forum for Growth, Midlands Engine, December 2020

Maximising the opportunities of freeports

Freeports in the UK are special economic areas where customs rules do not apply until goods leave the freeport. Although 'freeport' has become a buzzword in recent years, it is not a new concept; indeed, the first freeports in the UK opened in the 1980s.

Freeports are now being re-introduced by government to bolster economic performance and support regeneration around ports or airports. While in the designated freeport zone, any goods that arrive in the UK are not subject to tariffs or charges. Tariffs are payable if the goods are moved to elsewhere in the UK, but not if they are moved overseas. The zone can extend up to 45 kilometres from the port/airport. The government has also confirmed that employers in freeports will be able to pay reduced national insurance rates for new employees. The government has established a number of objectives for freeports.²⁷ They should:

- Be a national hub for global trade and investment
- Stimulate innovation by focusing on private and public sector investment in research and development
- Create new markets for UK products and services and drive productivity improvements, bringing jobs and investment to freeport regions
- Promote regeneration through the creation of high-skilled jobs linked to the areas around them, ensuring sustainable economic growth and regeneration for communities that need it most.

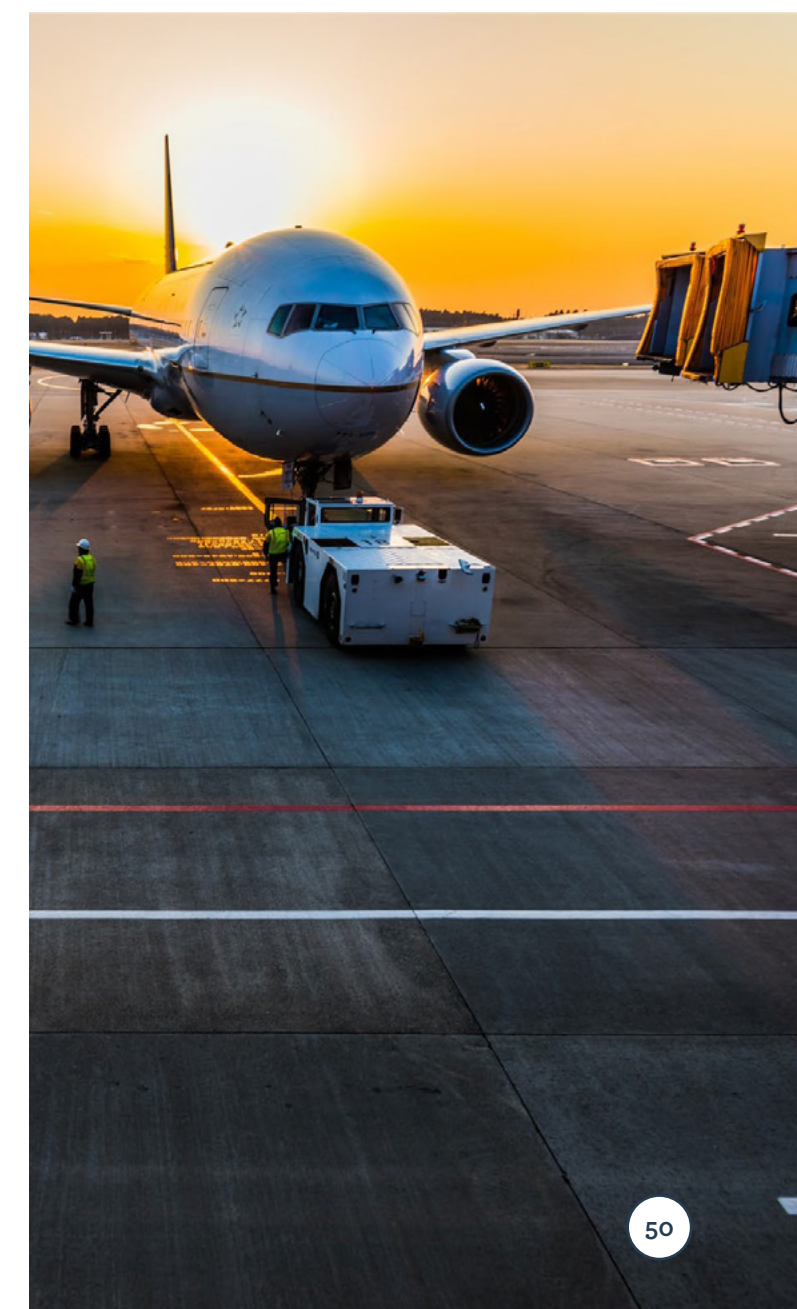
The government is hopeful that local economies will grow as tax measures drive private investment, carefully considered planning reforms facilitate construction and infrastructure is upgraded in and around freeports.

²⁷ UK Government policy on freeports, Briefing Paper, House of Commons Library, 2021

In its spring 2021 budget, the government announced eight new freeports. This includes two in the Midlands:

- The maritime-based Humber Ports, including Immingham
- The air-based East Midlands Freeport with three interconnected sites at East Midlands Airport, Ratcliffe-on-Soar Power Station and the East Midlands Intermodal Park at Willington, adjacent to the A38/A50 interchange and the North Staffordshire rail corridor.

The next steps for the freeports are to agree the details of their business cases with government before going operational. Further details on our two freeports are set out below. As proposals for each of these develop, we will work with partners to understand and champion the needs of each site from a strategic transport perspective in order to maximise the economic opportunity for the region.



East Midlands Freepport

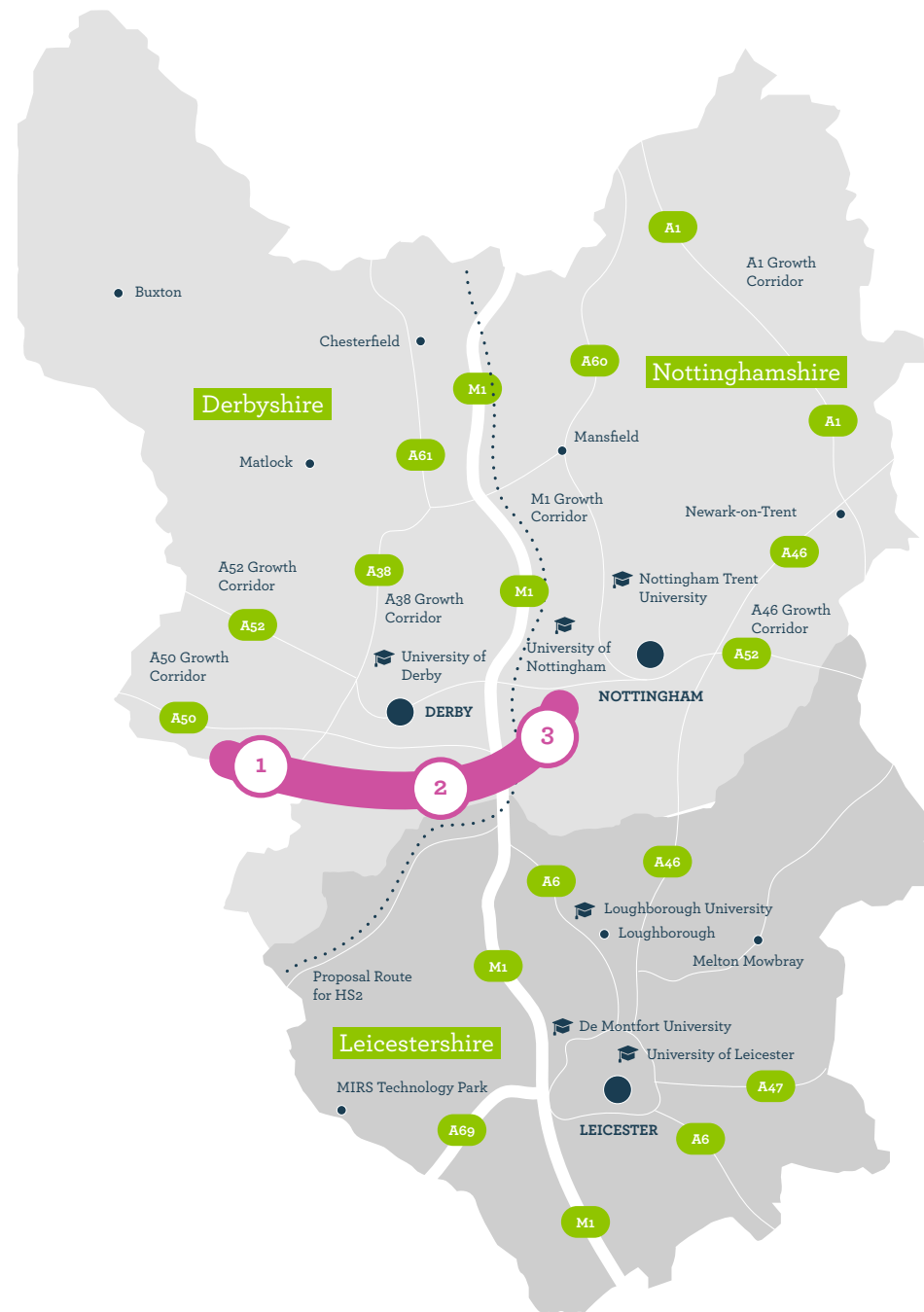
As the UK's only inland freepport, the East Midlands Freepport (EMF) will drive economic regeneration across the East Midlands. Underpinning this is a unique and world-leading combination of partners focused on creating thousands of jobs, boosting skills and accelerating the region's commitment to decarbonisation and net zero through low carbon energy investments.

Already home to world-leading multinational companies and East Midlands Airport - the UK's busiest 'pure' cargo airport - EMF is uniquely placed to capitalise on the region's unrivalled commercial and industrial strengths:

- Advanced manufacturing, automotive and logistics
- Multimodal transport connections covering air, rail and road
- Once-in-a-generation investment in infrastructure
- Leading higher and further education institutions.

Straddling three East Midlands counties, EMF features three main sites: the East Midlands Airport and Gateway Industrial Cluster in North West Leicestershire, the Ratcliffe-on-Soar Power Station site in Rushcliffe in Nottinghamshire, and the East Midlands Intermodal Park in South Derbyshire. The sites are strategically located with strong existing road and rail freight infrastructure connecting them to all other parts of the country, including seaport-based freepports. There is significant room for growth across the sites, accelerating regeneration, increasing skills and training opportunities and helping to level up some of the UK's most deprived areas.

Source: East Midlands Freepport



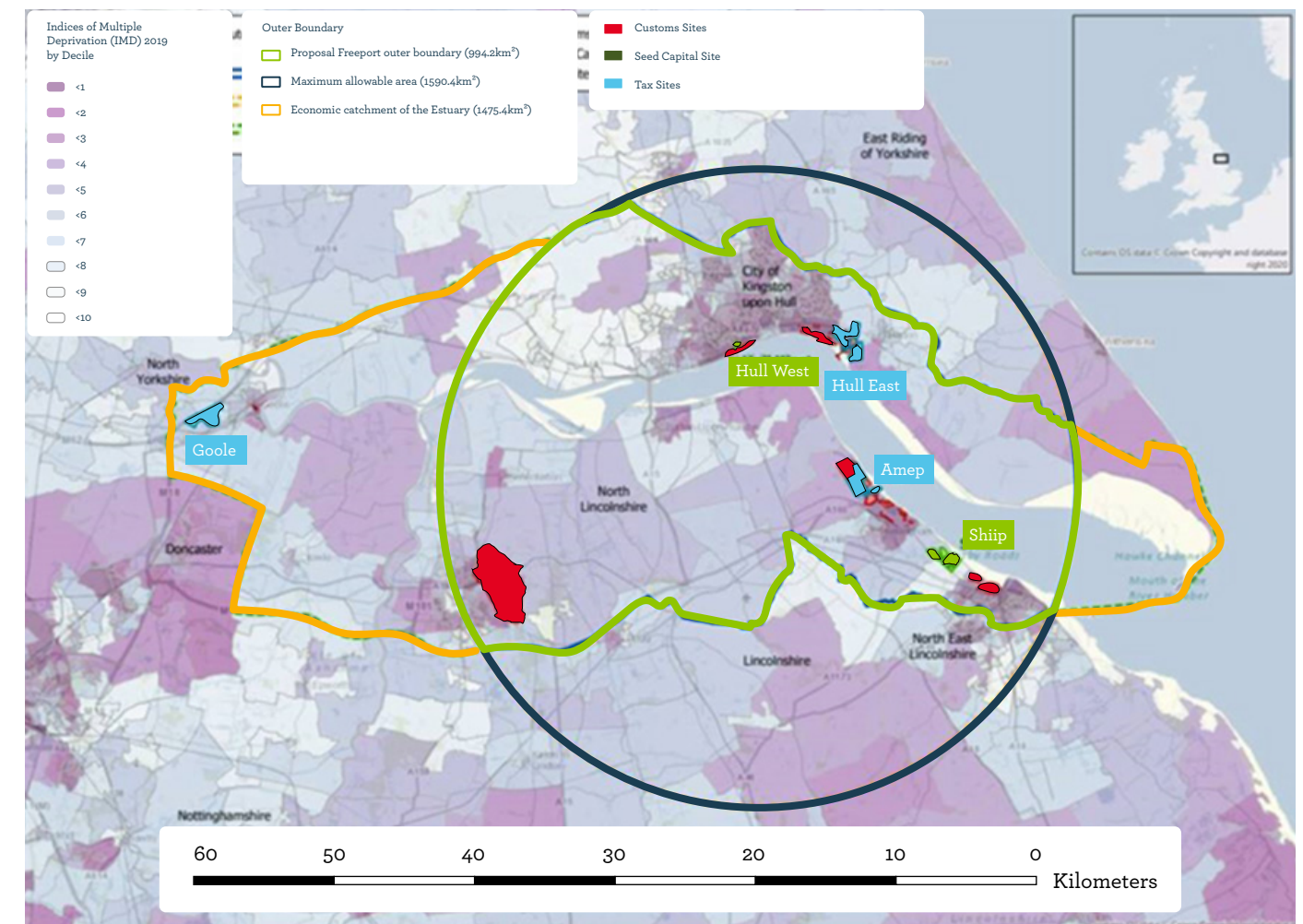
Humber Freepport

The Humber ports of Goole, Grimsby, Hull, and Immingham currently account for 23% of all goods travelling through English ports, adding £7.6 billion to the UK's gross domestic product (GDP), and support around 35,000 regional jobs. With freepport status, these four combined areas will encourage more businesses to use the Humber as their dedicated logistics port for customs processing, with the incentives of paying reduced VAT, employment tax, discounted business rates, and a reduction in stamp duty.

With good access to Humberside Airport, the A1, the East Coast Main Line and food clusters in the south, Greater Lincolnshire's ports and logistics sector accounts for over 25% of UK rail freight, connecting to the major energy and manufacturing providers in the north and offering significant opportunities as the UK gateway to the Midlands Engine and Northern Powerhouse.

Now that the freepport bid has been approved, the Humber Freepport also aims to contribute to, and establish, new innovation in another of the Greater Lincolnshire Local Enterprise Partnership's key priority sectors: decarbonisation and clean energy. The Humber estuary and surrounding coastline are already connected with at least 25% of the energy produced for the UK, and ultimately both the county and the country could benefit further from utilising the area's growing offshore wind farms to contribute to decarbonisation.

Source: Greater Lincolnshire Local Enterprise Partnership



Improving our digital infrastructure

Regional connectivity need:



Improved digital connectivity to reduce the need to travel

Our digital infrastructure is also a major area of focus, leveraging learning and innovation from the West Midlands 5G (WM5G) test bed to ensure the pan-regional connectivity that will enable and accelerate growth. Good digital connectivity is a vital tool to help reduce the need to travel. This will be necessary if we are to meet climate change targets. It is also vital to help future technology opportunities around connected and autonomous vehicles. We will work with others, such as the Midlands Engine and West Midlands 5G on this issue.

The whole of the Midlands Engine is in the vanguard of pioneering innovation. Figure 18 below summarises some of our region's main strengths and sectors when it comes to driving innovation that will enhance our international offer as part of the Midlands Engine Internationalisation Strategy.²⁸ This aims to increase the value of our international activities by £26 billion by 2030. The government's Levelling Up White Paper

also announced an 'Innovation Accelerator' in the Midlands, one of three in the country that will receive a share of £100 million funding.

Low carbon levelling up

The Midlands Engine has produced a Midlands Ten Point Plan for Green Growth²⁹ that indicates the key innovation areas for the Midlands economy to exploit. This plan commits to creating at least 196,000 high-value, high-skilled jobs above the government's business-as-usual forecasts to boost productivity and generate a further £24.2 billion for the region's economy by 2041, while reducing CO2 emissions by 36%. From a transport perspective, the plan sets out to: map and futureproof the region's charging and refuelling infrastructure; develop a regional battery electric vehicles (BEVs) and charging and refuelling skills strategy; and develop and promote the Midlands Engine as a centre of excellence for BEVs and charging and refuelling technologies.

Our plan will support these efforts. By working with our partners we can also help plan, develop and deliver the transport conditions that will enable low carbon innovation areas in the Midlands to reach their full potential.

Linking our plan to regional economic growth

The government's Ten Point Plan for a Green Industrial Revolution³⁰ sets out the approach to build back better, support green jobs and accelerate our nation's path to net zero. Furthermore, the government's policy for levelling up says that, as well as no area being left behind, no area should experience levelling-down.³¹ As such, it will be important for economic growth to be driven at a faster rate than the government's business-as-usual economic forecast and faster than its international counterparts, in particular to address the trade impacts of Brexit.

As a result, as well as working with Midlands Engine to develop future economic scenarios that can level up the Midlands, we will also work collaboratively to develop an economic, skills and transport narrative and evidence base that can show how to accelerate economic growth by helping partners achieve greater agglomeration effects and better focus on skills and innovation best suited to their circumstances.

Accelerating economic growth through agglomeration effects will be achieved by better connecting businesses to other similar businesses and a wider labour market. For England, efforts should focus on bringing the eight city regions to a similar level of growth as Greater London,³² a key aspiration driving economic growth in the Midlands. As such, our plan focuses on delivering a modern, reliable and high-speed rail network to connect the Midlands' city regions and hinterlands to other city regions and London. Furthermore, the government's levelling up agenda supports the least accessible communities with much improved digital connectivity³³ to ensure that people who wish to work remotely can and to ensure that such people stay and spend local, and so support the broader local economy.

Accelerating economic growth will also be achieved through targeted innovation, enabled by developing skills and economic centres around niche specialisms.

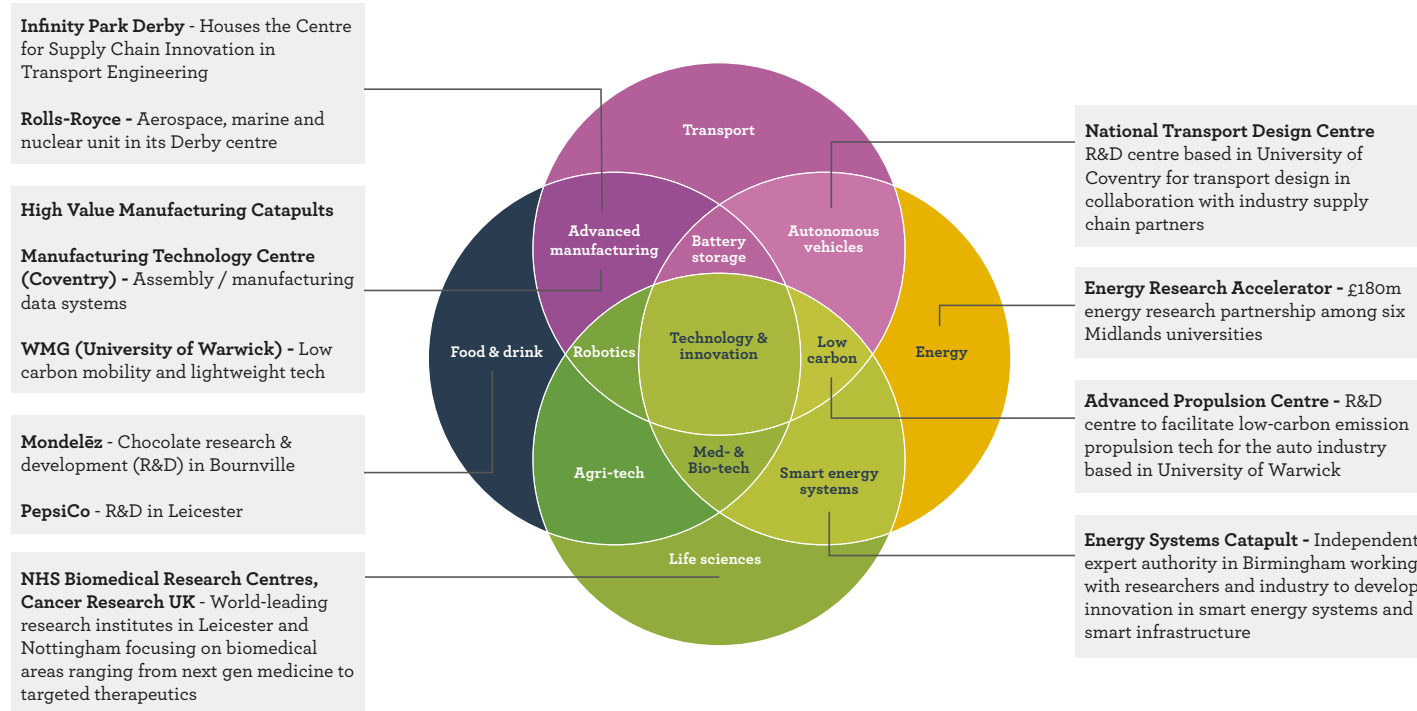


Figure 18: Midlands Engine innovation areas (Midlands Engine Internationalisation Strategy 2019)

28. Midlands Engine Internationalisation Strategy, Midlands Engine, 2019

29. Ten Point Plan for Green Growth in the Midlands Engine, Midlands Engine, 2021

30. The Ten Point Plan for a Green Industrial Revolution, HM Government, 2020

31. Levelling-Up the United Kingdom, Department for Levelling-Up, Housing and Communities, February 2022 32. See 31 33. See 31



Levelling up investment

Our region's transport infrastructure has suffered decades of underinvestment. In 2018-2019, the East Midlands region had the lowest spend per head on transport at £268. The West Midlands was the fifth highest at £467; however, both regions were below the UK average of £481.³⁴

To level up our region, we need an even greater injection of investment, beyond simply matching the

UK average. This would enable our economy to catch up more rapidly and help to rebalance the UK economy. We want to have this conversation with government and welcome the recently announced initiative to appoint levelling up directors that will act as single points of contact for local areas. Our aim is to demonstrate a strong case for investing in the Midlands, unifying our voices to convey to the government not only how much investment our region needs but what that investment should focus on.

Transport spend per head by region and country (2016 - 2021)



Figure 19: Transport spend per head by region and country 2016-2021 (Source: HM Treasury 2021)

34. Transport spending in north of England less per head than London, BBC News, 4 December 2019

Partner Showcase: Nottingham City Council

Integrated ticketing:

Integrated ticketing in Nottingham will encourage more people to use public transport, and the more modes of transport and opportunities offered, the quicker this will be achieved. The City Council is working to ensure that these schemes can be rolled out to reach as many people as possible.



Partner Showcase: Nottinghamshire County Council

Robin Hood Line Extension:

Extending the Robin Hood Line north of Mansfield to Shirebrook would improve connectivity across the north of Nottinghamshire. Improved rail connectivity would enable towns like Ollerton and Edwinstowe to become more desirable, encourage businesses to invest and create lasting jobs and new homes.



4.3 Greener: decarbonising transport and adapting to climate change

The threat of climate change

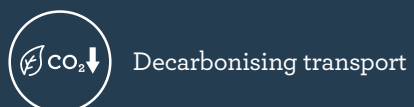
The threat of climate change is recognised internationally and well established in UK government policy. With the Paris Agreement of 2015, the UK joined 196 other parties in committing to limit global temperature rises to below 2°C higher than pre-industrial levels and to try to limit this to 1.5°C. These pledges were renewed at the COP26 event in Glasgow during 2021.

To deliver on the Paris Agreement, in 2019 the UK Government declared a climate emergency and committed to reducing greenhouse gas emissions by 100% compared to 1990 levels by 2050, achieving net zero emissions.³⁵ In the Midlands Connect area 68% of our partner local authorities have also declared climate emergencies, with a range of targets for when they will achieve net zero emissions.³⁶

It is now up to national and local governments to work with industry, stakeholders and the public to provide the detailed carbon pathways required to meet these targets. This will include the assumptions around transport and the funding and legislative frameworks needed to meet them.

The publication of the Department for Transport's (DfT's) Transport Decarbonisation Plan³⁷ has gone a long way to establishing how carbon will be eliminated from transport. However, many of the details are yet to be determined because in some cases the envisioned technological solution does not yet exist.

Regional connectivity need:



Decarbonising transport

Understanding the transport carbon 'problem' in the Midlands

To reduce carbon emissions from transport in the Midlands, we need to understand the carbon 'problem' in more detail; specifically, what activities or choices are the main drivers of transport carbon emissions in the region? We have analysed transport carbon emissions and found some interesting results. These results will need to be reflected in national and local policymaking. The following findings come from our Carbon Baseline Tool.

Freight is a big part of our transport emissions problem

Petrol and diesel emissions from road transport, particularly cars, account for the vast majority of transport emissions in the Midlands. Changes in emissions are therefore heavily influenced by the make-up of the UK's vehicle fleet.

HGVs account for the second highest proportion of transport emissions. Our Carbon Baseline Tool suggests that, while HGVs account for 17% of transport emissions nationally, the proportion of HGV emissions is higher in the Midlands and could be as much as 21%. This is not surprising: 23% of England's motorway and trunk road network runs through the Midlands,³⁸ providing important links to ports and airports; the Midlands has the UK's highest proportion of warehouse space; and the advanced manufacturing and engineering sector in the Midlands is above the UK average (16.2% of Midlands GVA versus 9.9% UK average).³⁹

The longer distance and heavier weight associated with moving goods can be prohibitive for current battery technology. Finding alternative fuels for freight and logistics is therefore crucial.

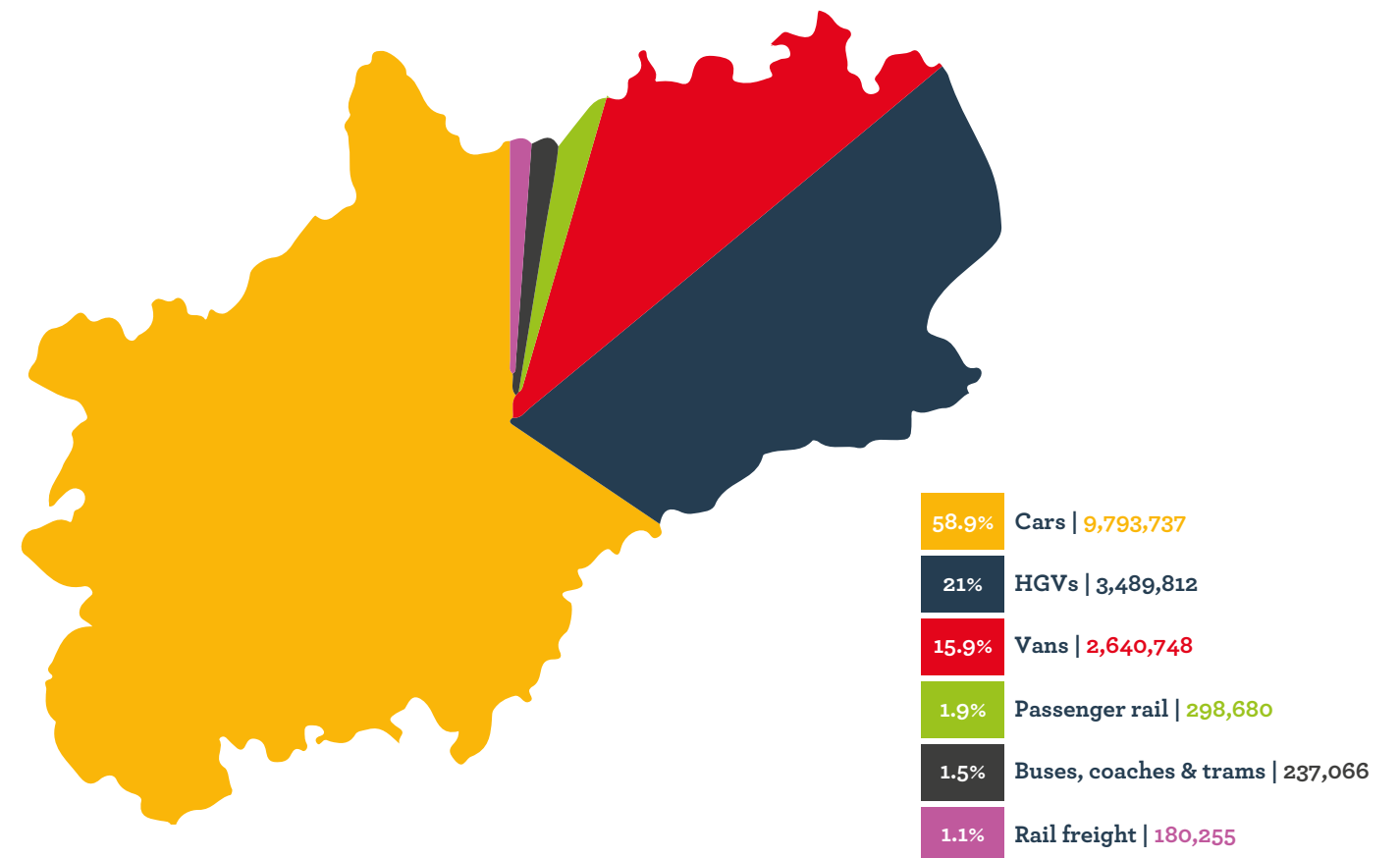


Figure 20: Transport carbon emissions in the Midlands, 2019 (tonnes of CO₂e)



Emissions in shire county areas are significantly higher than in cities

The more predominantly rural local authorities in the Midlands contain 58% of our population, but we estimate that 71% of all road-based transport carbon emissions are generated within their boundaries (as shown in Figure 21). We believe this to be for three main reasons:

- a) The vast majority of the motorway and trunk road network runs through these more rural areas. Emissions per mile are much higher on these roads due to the higher proportion of goods vehicles and longer trip distances. We estimate that as much as 42% of emissions in shire county areas are generated on the strategic road network.⁴⁰
- b) Non-car transport options are poorer in rural areas. The RAC reported that 84% of car drivers in rural areas say they would find it very difficult to adjust to life without a car.⁴¹ This is not surprising given how far residents need to travel to access jobs

and services and lower public transport provision compared to cities. This reliance on cars is growing and places greater emphasis on the importance of emissions in rural areas.

- c) Populations are large and dispersed in rural areas. As an example, Birmingham may be the nation's second city with a population of 1.1 million people, but Staffordshire and Nottinghamshire have comparable population sizes. However, Birmingham's population density is ten times that of those shire areas. Large and spread-out populations create more carbon emissions from movement as people have to travel further to go about their daily lives, for example accessing services, education and work.

Regional connectivity need:

Solutions to rural transport challenges



Figure 21: Estimated Midlands transport carbon emissions by shire and urban areas, 2019 (Source: Midlands Connect Transport Carbon Baseline Tool)

Longer distance trips and emissions

Perhaps the most challenging output from our Carbon Baseline Tool is that we estimate that trips over ten miles account for 66% of emissions from car trips and over 70% of all road-based emissions (when vans and HGVs are included). The pattern differs slightly between city and rural areas, but in both areas a high proportion of emissions comes from longer distance trips.

Many studies and statistics show that short distance trip making is prevalent on our road networks. Indeed, the Transport Decarbonisation Plan places great emphasis on converting short distance car trips

to walking and cycling. However, the 2019 National Travel Survey⁴² shows that while 57% of all car trips may have been under five miles; overall those trips accounted for just 15% of all miles driven. Similarly, in our carbon model, car trips of under five miles account for only 18% of car emissions, matching well with national statistics on how cars are used.

Our estimate suggests that local policies focused on shifting modes, particularly to walking and cycling, will be useful for targeting local congestion and air quality problems, but the bulk of carbon emissions from long distance trips will need to be solved in other ways.

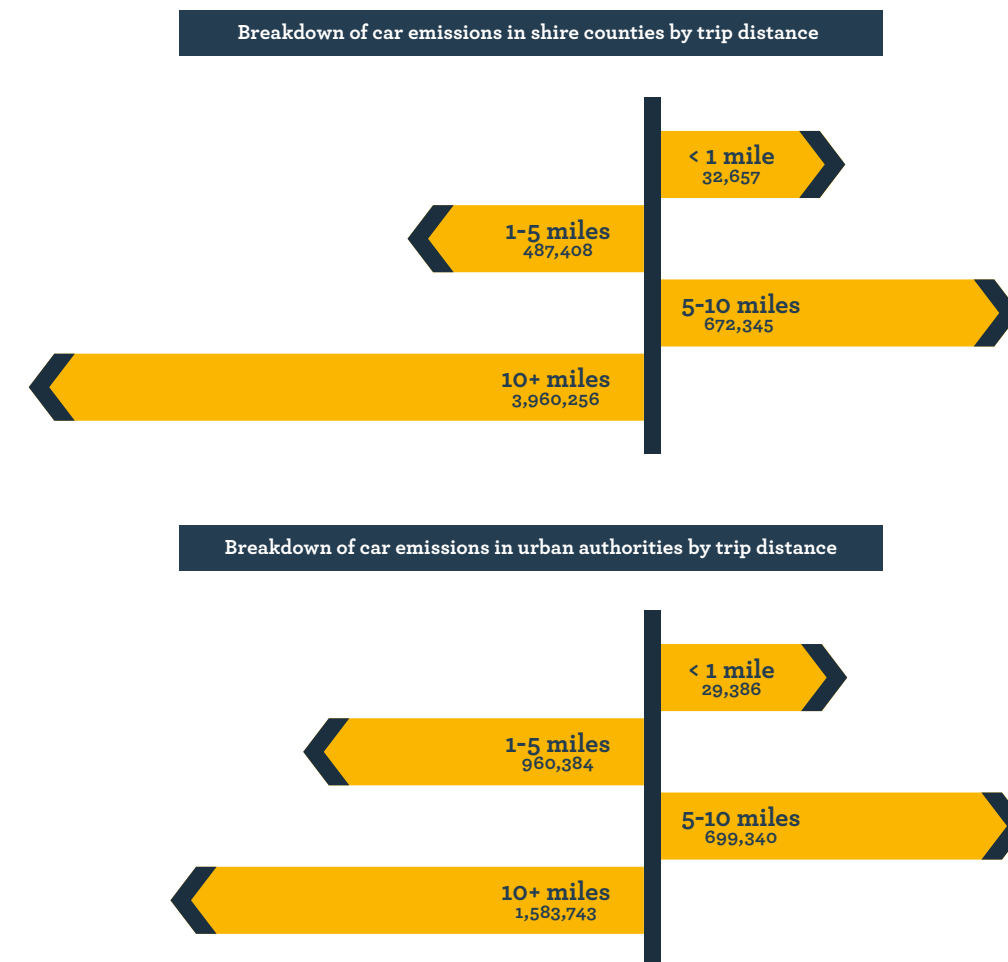


Figure 22: Carbon emissions from cars in tonnes of CO2e, 2019 (Source: Midlands Connect Transport Carbon Baseline Tool)



Cross-boundary carbon emissions



Figure 23: Cross local authority boundary transport carbon emissions, 2019 (Source: Midlands Connect Transport Carbon Baseline Tool)

Local authorities cannot tackle the problem on their own

Ultimately the carbon challenge is one we need to solve together. Figure 23 above shows our estimate that 64% of all 2019 road emissions from transport in the Midlands came from trips that crossed local authority boundaries. Furthermore, our analysis estimates that 15% of 2019 road emissions in the Midlands were from trips which started outside the Midlands but then travelled into or through the region.⁴³

This is tied closely with the finding that longer distance trips create most of our carbon emissions. These longer distance trips are very likely to cross at least one local authority boundary. Decarbonising transport will therefore need all local authorities to work together and acknowledge that the emissions coming from their residents' travel can have a wide impact across the Midlands and beyond.

Regional connectivity need:

Better integration between local, regional and national networks

We cannot rely on simply shifting away from petrol and diesel

As well as looking at our current transport carbon baseline (2019), we have begun to identify what will need to change to meet emissions reduction targets. Perhaps more important than the target of net zero carbon emissions by 2050 is the target to drastically cut the overall amount of carbon emitted between now and 2050.

In their 6th Carbon Budget⁴⁴ (2020), the Climate Change Committee used these two targets to identify a trajectory for carbon emissions from transport. This trajectory requires emissions to be cut by around 50% by 2030.

We examined what we believe to be plausible trajectories for the reduction in carbon from faster or slower uptakes of alternatively fuelled vehicles. The assumptions for the graph shown in Figure 24 come from two studies we commissioned, one which looked at how quickly electric cars may be taken up and one which looked at the challenges and opportunities around shifting the freight and logistics industry to

alternative fuels. Both studies produced slow, medium and accelerated scenarios for new vehicles to make their way into the fleet.

Assumptions for how road use might change over time and how this can be influenced will have a significant effect on these carbon emissions trajectories. Our estimates are built on a background assumption of increasing demand for travel overall and specifically increased road use over time. Based on a single national forecast of traffic growth to 2050, where car kilometres travelled increases by 34%, van kilometres travelled increases by 60% and HGV kilometres travelled increases by 20%, our 'do nothing' scenario (where there is no shift to alternatively fuelled vehicles) estimates that tail-pipe carbon emissions could increase by almost 40%.⁴⁵

Our estimates then show that even if the take-up of alternatively fuelled vehicles is accelerated, it will still not be enough to meet the transport decarbonisation requirements. Firstly, even the fastest trajectory is potentially too slow; at best a 50% reduction is not met until 2034. Secondly, 13% of 2019 carbon levels remain by 2050. The implications from the other

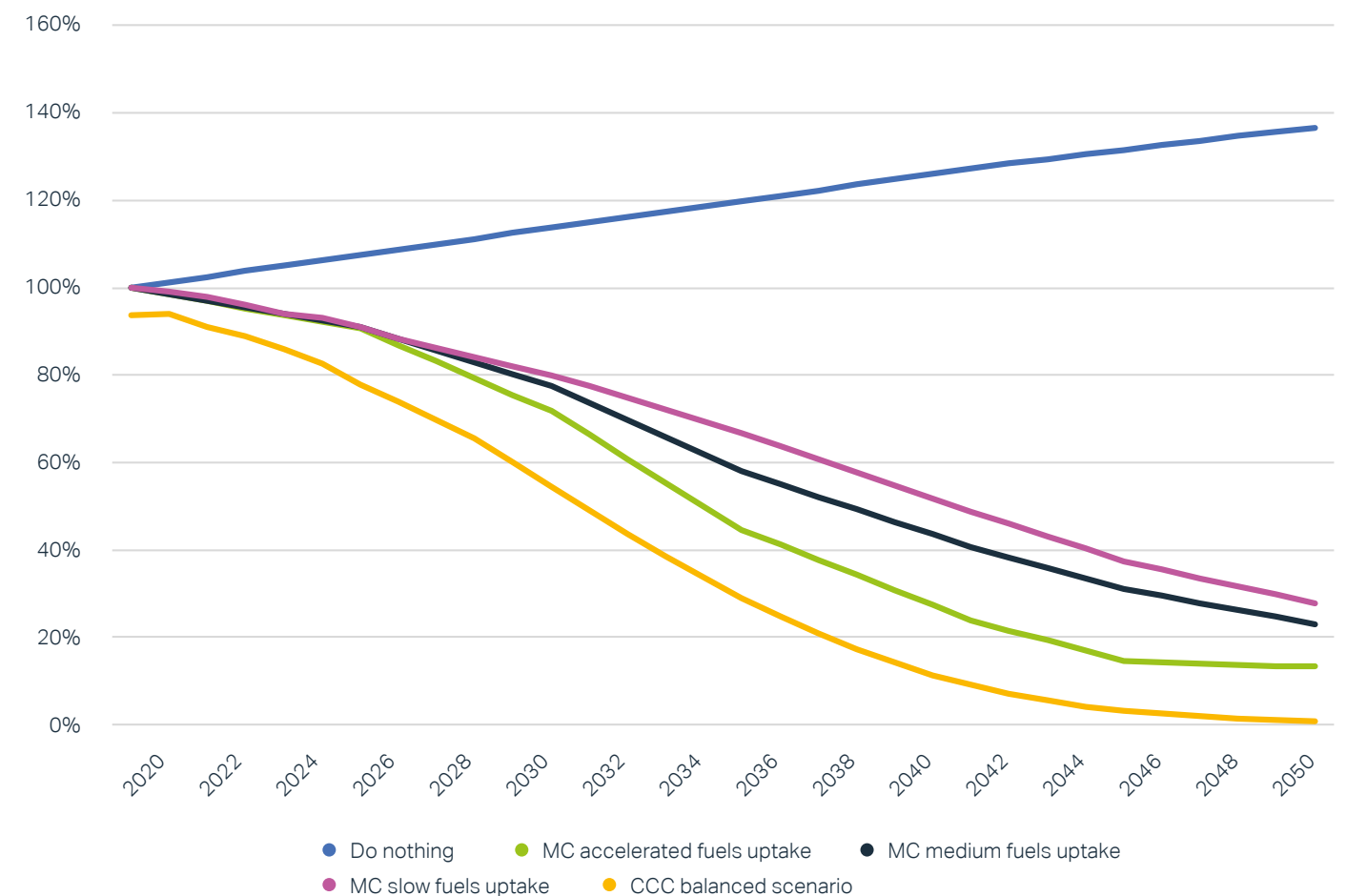


Figure 24: Estimated carbon abatement potential from different scenarios of uptake for non-petrol or diesel vehicles

43. Midlands Connect Transport Carbon Baseline Tool, Midlands Connect, 2019.

44. Sixth Carbon Budget, Climate Change Committee, 2020 45. Based on modelling undertaken for the Midlands Connect Transport Carbon Baseline Tool. This was based on validated transport models in the region using National Trip-End Model (NTEM) growth projections.

two scenarios, which assume a slower take-up of alternative fuels, naturally show an even greater challenge to meet net zero targets. If we accept that even if there is a rapid shift to zero or ultra-low emission vehicles, it is not likely to be a 'magic bullet' fix for meeting carbon reduction requirements in the Midlands, then other initiatives have to come into play.

One of the most obvious is to encourage a significant shift from car journeys to more sustainable modes of transport to manage the forecast growth in car, van and HGV kilometres travelled over the period. This has been a long-held aspiration; however, approximately 80% of all person kilometres travelled in the region were by car/van before the pandemic, and this has remained fairly constant for at least the past 15 years.⁴⁶ It is against this backdrop that local and national bodies must find more radical ways to influence which mode people use or how much they travel at all.

To make this shift, there is no doubt that mass-transit solutions, particularly in cities, will need to be revolutionised. However, as we have presented above, focusing on localised journeys and providing alternatives for short distance car trips can only achieve so much to reduce carbon. Most emissions from cars come from journeys made to locations far from home.

Given the impending tax revenue gap as a result of increased numbers of electric vehicles (which do not generate fuel duty revenue), the government will need to reconsider how future road maintenance and improvements are funded. Although this will be led nationally, we are keen to ensure local and regional inputs and will work with our partners to develop evidence on the potential policy outcomes that could be supported by any changes.

Decisions and policies such as these will need to be taken at a local or national level. The Transport Decarbonisation Plan sets out how local authorities will need their Local Transport Plans to "set out how local areas will deliver ambitious quantifiable carbon reductions in transport, taking into account the differing transport requirements of different areas."⁴⁷ We can support our partners in these areas by providing an evidence base to demonstrate how different policies might impact carbon emissions.

Transport problems don't always need transport solutions. Reducing the need to travel can play a major part in reducing car trips. A factor in either reducing the need to travel completely or at least reducing the distances people travel is land use policy. Getting sustainable development right and linking it up with the right kinds of transport infrastructure will be critical to reducing the distances people travel by car in the region. For example, the concept of a '20-minute neighbourhood' is one where people can access everyday services a maximum of 20 minutes by foot from their front door.⁴⁸ This idea has a growing following and could significantly reduce car use for both existing and new communities.

The pandemic has also taught us that digital connectivity is vital to reducing our need to travel. Covid-19 has demonstrated the possibility of digital connection, localised living and travel substitution. High quality, reliable digital infrastructure is now unlocking new and previously unimaginable ways of working, and it is now essential to facilitating public services, including healthcare and education. The government's Levelling Up White Paper states that the UK will have nationwide gigabit-capable broadband and 4G coverage by 2030, with 5G coverage for the majority of the population.⁴⁹

Commitment:
We will publish a **Decarbonisation Policy Toolkit** by the end of 2022. This will provide evidence to our local authority partners on the decarbonisation approaches they could use in their local plans and pathways.

Whilst Midlands Connect is focused on regional-scale transport needs, we can't ignore these other issues. We are working with other bodies, such as our local authority partners, the Midlands Engine and West Midlands 5G to understand how their plans may impact on the demand for travel in the future.

Providing low emission choices for pan-regional journeys

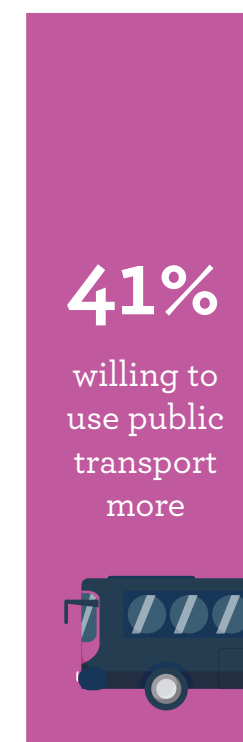
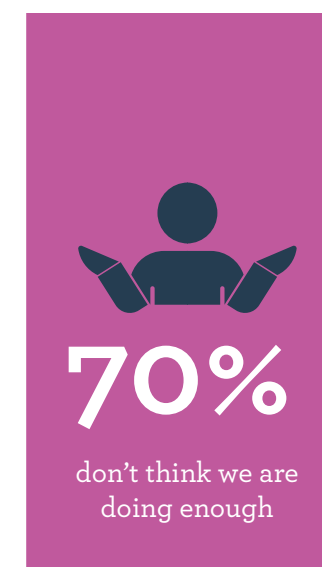
Our aspiration is for our Midlands Engine Rail (MER) programme to have a dramatic effect on how people and businesses make pan-Midlands journeys. Our evidence demonstrates that the current offer for passengers and freight to move around the region by rail is poor. Our programme seeks to provide a step-change in the regional rail network and offer in order to drive a modal shift from road to rail. In addition, we support Network Rail's proposed rolling programme of electrification to help decarbonise the railways. Electrification of the Midland Mainline is a key priority for the region as part of this programme.

However, in order to be successful, MER must be integrated into local transport networks for first - and last - mile parts of the journey to make MER more accessible, and give the opportunity for end-to-end, pan-regional journeys to decarbonise. We will work closely with local authority partners to ensure this regional and local network integration happens.

Regional connectivity need:
Establishing a competitive pan-regional rail offer

Regional connectivity need:
Better integration between local, regional and national networks

Polling of Midlands residents by Midlands Connect shows that the public are concerned about the challenge of climate change and the pace of change. But encouragingly, it appears they are willing to consider playing their part in the behavioural changes required.⁵⁰ This is welcome. We all know that there are significant costs associated with reaching net zero, but the cost of inaction is much higher. A recent Office for Budget Responsibility report showed unmitigated climate change resulting in "debt spiralling up to around 290% of GDP thanks to the cost of adapting to an ever-hotter climate and of more frequent and more costly economic shocks."⁵¹





Adapting to climate change

People and businesses depend on our infrastructure every day. However, this infrastructure is increasingly vulnerable to climate change risks, both directly and indirectly. The second Climate Change Risk Assessment, published in 2017⁵² identifies the key climate risks to infrastructure, including from groundwater flooding, coastal flooding and erosion, embankment failure, high winds and lightning,

as well as cascading failures from infrastructure interdependencies.

In its 25 Year Environment Plan⁵³, the government committed to ensuring that all policies, programmes and investment decisions consider the possible extent of climate change this century. We are starting to look at how our most important strategic transport corridors could and should be future proofed for the effects of climate change.



Partner Showcase: Coventry City Council

Very Light Rail:

Delivery of the Very Light Rail project in Coventry will provide a decarbonised, attractive, mass transit system serving the city, a solution that could be used in other Midlands cities. The intention would be for the vehicle and associated infrastructure to also be designed and built within the Midlands, thereby promoting green economic growth.

Partner Showcase: Birmingham City Council

East Birmingham Major Scheme:

East Birmingham has great potential for growth and investment in the coming years. Birmingham City Council has identified many opportunities, from HS2 and associated public transport improvements, to new housing and improved neighbourhood facilities.



4.4 Stronger: driving resilient economic growth

Covid-19 has demonstrated the importance of ensuring economic resilience to external shocks. Uncertainty around issues such as climate change, housing supply, future jobs and skills, and how the global economy is changing poses further threats to our economy.

Identifying short-term economic needs from the pandemic

Covid-19 caused hardship for individuals, businesses and communities across the country. It led to a large increase in joblessness and a high level of economic uncertainty. GDP began to recover in the second quarter of 2021, when growth was 4.8%. Growth continued in the third quarter of 2021, but at a slower rate of 0.6%. At that point in 2021, the economy remained 0.6% lower than before the pandemic.⁵⁴

The economic recovery from Covid-19 has perhaps been quicker than many anticipated. However, it still has a long way to go, particularly in light of emerging variants. In addition, the impacts of the pandemic and, indeed, how quickly sectors, areas and people have been able to recover, have not been spread evenly through society.

In the Midlands, Covid-19 has blighted our economy, strangling output more than elsewhere in the country. Whilst retail and tourism have been hit everywhere, the Midlands has also suffered acutely at the heart of its economy – advanced manufacturing and engineering. This economic sector makes up more than 16% of economic output in the Midlands, compared to less than 10% nationally⁵⁵ – and it relies on international trade and global supply chains. Economic lockdowns have resulted in global supply shortages, and these hit the sector hard. There are also few opportunities to work from home and making workplaces Covid-19 safe has constrained output as working practices and shift patterns have had to change. Besides specific economic sectors, it is the region's cities and poorer areas that have suffered the most as a result of the pandemic.

Regional connectivity need:



Respond to the impacts of Covid-19

The pandemic has also generated unintended consequences that transport investment can seek to address in areas such as the housing market. Data from the Office for National Statistics (ONS) reports median house prices by region and local authority as follows:⁵⁶

- Across England, house prices increased by 13.2% between June 2020 and June 2021
- Prices increased by an average of 15% in the West Midlands and 14.3% in the East Midlands
- There are significant geographical variances, with a 9% increase in house prices in Birmingham and increases in the region of 24.7% in the Derbyshire Dales; smaller increases in house prices of 7.8% were seen in Herefordshire and Lincoln.

More recent data from Nationwide suggests that this upward trend continued in the third quarter of 2021, which saw growth of approximately 10% across the Midlands, broadly in line with England-wide increases (year-on-year).⁵⁷

High prices are expected to continue in the short to medium term: demand is outstripping supply for housing in many areas. This presents an affordability challenge to many households and may reduce the region's ability to attract people to live here. Investment in transport can bring forward development sites and reduce supply pressure in the market.

However, the economy is increasingly experiencing inflationary pressures, with the latest Office of Budget Responsibility forecasts (October 2021) indicating that inflation for 2022 is expected to reach 4.4% (more than double the Bank of England's target). This will create pressure on both the cost of living and potentially the affordability of infrastructure.

Infrastructure investment and long-term economic resilience

Efficient, reliable and sustainable connectivity is key to a strong and resilient economy. Given the large-scale shock to the economy there may be a policy imperative for infrastructure investment to serve as a driver to reignite the economy. Transport schemes may achieve this in different fashions: some may generate more employment during their development, design and construction, whilst others may help expand access to housing, but also employment, anchoring the regeneration of areas that have experienced decline.

The importance of a regional pipeline of transport infrastructure investment

Our emerging infrastructure priorities pipeline is summarised at the start of our plan. If funded, the pipeline will deliver improved connectivity between the West Midlands and the South West and East Midlands through enhancements in rail capacity in the bottleneck area of Birmingham.



It will also improve the quality and reliability of road connections along the nationally and strategically important A46, A5 and A50/500 corridors. This will again allow improved east-west connectivity but will also improve reliability and support the nationally important freight movements through and in the region.

Government policy allows for “a long-term funding guideline for public investment in infrastructure of 1% to 1.2% of GDP, including existing government funding commitments such as HS2.”⁵⁸ In addition, the government’s Build Back Better Growth Plan⁵⁹ promises to “redress Britain’s historic underinvestment in infrastructure, with £600 billion of gross public sector investment over the next five years, so our United Kingdom becomes a truly connected kingdom”.

Taking the government’s target funding envelope, allowing for non-transport expenditure and applying this to the Midlands suggests infrastructure expenditure of between £2.9 billion and £3.8 billion per year in 2021-2022, rising to between £4 billion and £6.8 billion per year by 2034-2035.⁶⁰ The profile of total anticipated expenditure on identified major projects in the region (including committed schemes and the infrastructure priorities identified in this plan) is shown in Figure 25.

More specifically, we have considered three scenarios, shown in Figure 25 (dotted lines). Scenario 1 is based on the Midlands being allocated a share of infrastructure investment consistent with historic trends. Scenario 2 is a forecast based on 1.2% of the Midlands regional economic output (GVA). Scenario 3 is based on an allocation of infrastructure investment of 1.2% of national GDP apportioned regionally by head of population, which could be seen as a ‘levelled up’ scenario.

The funding envelope in Figure 25 shows all three funding scenarios rising over time due to anticipated future growth in GDP, while identified project expenditure (in the coloured bars) declines as projects further in the future have yet to be identified. Even accounting for the strategic rail and road priorities identified in this plan, we do not have enough schemes in our pipeline to meet what the NIC believes to be the right investment portfolio of transport infrastructure (even against the lowest scenario). It should be noted that the planned and proposed infrastructure spend in Figure 25 includes

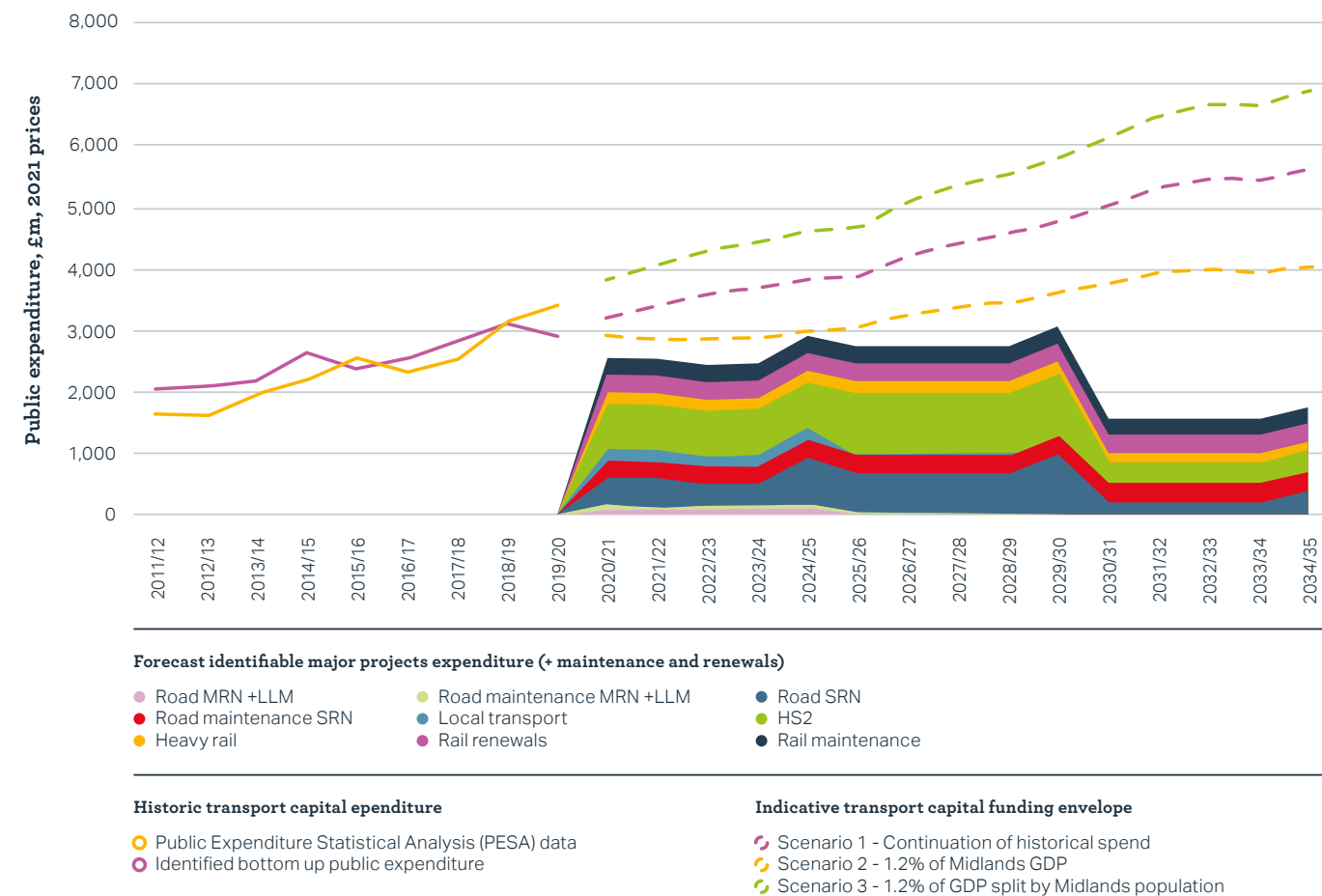


Figure 25: Potential future funding scenarios and pipeline projects in the Midlands, 2021 prices

initial insight into changes to the HS2 network published by the Department for Transport in its Integrated Rail Plan (IRP) in November 2021. The full implications of the IRP may take some time to be fully understood and therefore these should be viewed as somewhat provisional figures.

This highlights the importance of identifying the priorities we have set out in this plan as a means to develop a strong pipeline of investment opportunities. Crucially, this analysis shows the need to support the supply chain: from scheme development and design through modelling and appraisal to delivery and build. In terms of the skills required, construction and engineering skills could be in particularly short supply. Increasing the capacity of this sector to accelerate infrastructure delivery will require upskilling and training new people to come into the sector.

In the short term, the pipeline is particularly undersupplied at the moment to deliver ‘shovel-ready’ schemes on a short timescale. To aid economic recovery, focusing on local complementary measures that help realise the benefits of longer-term strategic investment (including the priorities in this plan)

may be best to support employment in the shorter run. This includes addressing the local highways maintenance backlog and quicker wins such as active travel interventions.

In the longer term, by identifying, developing and managing a pipeline of transport infrastructure investments, we can provide the confidence that the industry needs to maintain and develop the skills required.

By doing this, we can also create jobs. New guidance from government suggests that investment designed to meet local economic objectives will require place-based economic analysis.⁶¹ The pipeline of infrastructure priorities we are promoting will have what the Treasury Green Book describes as “a focus on a specific part of the UK”.⁶² This means that we will be better able to articulate the local imperative for these schemes to stimulate our regional economy.

The refreshed Green Book goes further; the guidance now allows for regional specific multipliers to be applied in business cases. This is a vitally important step as it will enable the specifics of our region to be brought out in how we present business cases

58. National Infrastructure Assessment, National Infrastructure Commission, 2018
59. Build Back Better: our plan for growth, HM Treasury, 2021

60. Research undertaken by Midlands Connect into historical infrastructure spend in the Midlands and forecasts based on National Infrastructure Commission publications
61. The Green Book (2020) (Annex 2), HM Treasury, 2020
62. The Green Book (2020), HM Treasury, 2020

to government. Rebalancing the economy may also deliver wider national benefits by avoiding expenditure in more crowded areas. It also enables us to estimate the job creation effects from the construction of the schemes in our emerging programme.

The employment multipliers referenced in the Green Book imply that each additional local construction sector job will support a further 1.3 jobs in total. If we apply the employment multipliers referenced in the Green Book to our emerging infrastructure priority pipeline, this implies that an average of around 11,000 local construction and supply chain infrastructure jobs could be supported each year in the Midlands

in delivering this pipeline. These jobs are likely to generate around £300 million of additional wages to the Midlands per annum.⁶³ These are professional roles with average wages estimated to be approximately 20% higher than the national average.

We are therefore working to understand how each scheme we promote may contribute to this stimulating effect, and in particular whether it does so either in locations worst hit by the pandemic or by supporting industry sectors also hit hard. Where we believe schemes may have this effect we will promote them for funding earlier.

Partner Showcase: Worcestershire County Council

Redditch Rail Quarter:

The area surrounding Redditch train station is ready for development. Worcestershire CC have identified that investment in this area will release space for housing and employment, improve access into the town centre and encourage rail travel.

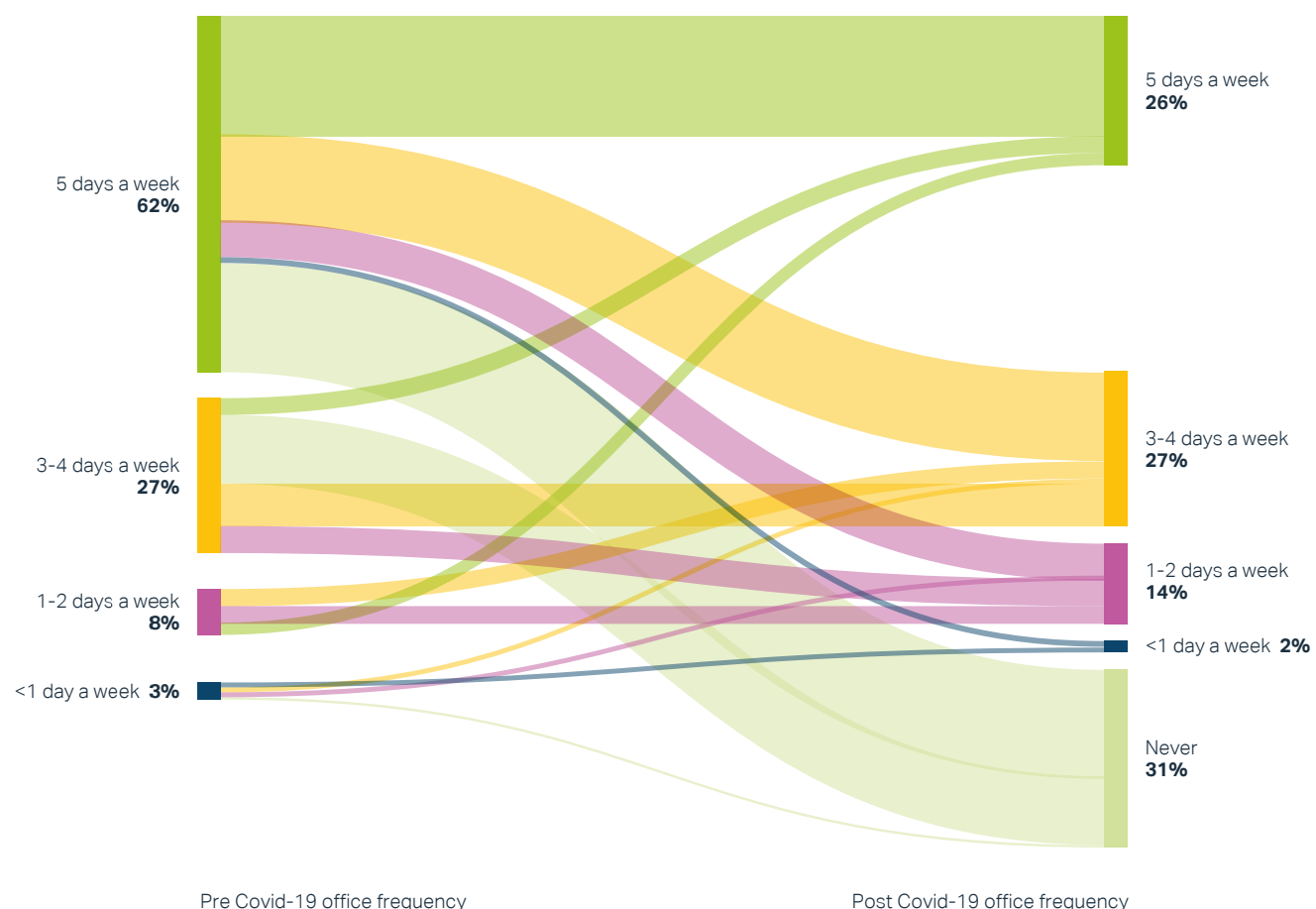


Figure 26: Employee preferences on working from their office (Source: Systra)

How demand for travel may change and implications for our business cases

The pandemic has undoubtedly accelerated an existing trend in increased flexible working, in terms of both when and where people work.

ONS data from 2019 suggested that 27% of people in the UK worked from home at some point; whereas the same data from 2020 showed that this figure had increased to 36%. This means that only just over a third of workers are in jobs where homeworking is possible and three quarters of those were already working from home to some degree before the pandemic.

These impacts will also be felt differently in different places, depending on the proportion of jobs that can be undertaken from home. For example, in the Midlands Connect area, the average number of people who had worked from home at least part of the time in 2020 was 32%, compared to the UK average of 36%. Furthermore, there are some significant differences within the region; in Warwickshire, for example, the figure was 48%, but in Sandwell only 17% of residents worked from home during the height of lockdown. Clearly, the impacts of homeworking on demand for transport and road use will vary from one location to another.

Regional connectivity need:

Respond to the impacts of Covid-19

Independent research undertaken by consulting firm Systra provides insights into what the impacts of lockdown working practices might be on demand for travel. They undertook a national survey (see Figure 26) during the early stages of lockdown where just over 450 office workers responded to a question about how often they used to go to an office and how often they would like to return to an office (noting that their desires might not be aligned with what their employers would want them to do, but this might also change over time).

Systra then took the results of this and other primary research around the increased use of video conferencing for meetings and the impact of increased internet shopping, to look at how the demand for travel may change compared to habits in place prior to 2020.

Their work used a transport demand model that covers a large part of the East Midlands as a representative area and looked at the impacts in 2025 and 2040. Their assumptions based on their own and other surveys, are set out in Figure 27 (page 72).

The graph below in Figure 28 shows the potential change in demand for travel up to 2040. The green line represents the situation had behavioural change caused by Covid-19 not occurred, which shows a gradual increase in transport demand between 2016 and 2040. The blue (normal growth) and purple (low economic growth) lines provide an indication of the potential impact of behavioural changes in terms of working from home, remote business meetings and increased internet use.

The results show that once the initial shock of lockdown subsides, overall demand for travel could come back to a level that is around 8% less than 2019 levels. Road use reduces by just over 7% and demand for public transport reduces by over 9%.

These are significant results and although the reduction in road demand may seem small it could have a disproportionately large impact on congestion levels. This is because the network is often at a tipping point of capacity; a small reduction in demand can have a big impact on journey times and queueing. This reduction in commuting is comparable to the effect of school holidays, where peak-time queues and delays are often substantially reduced when compared against the norm.

However, whilst this is a very positive story, modelling further into the future shows that these effects could be eroded away if we believe traditional forecasts of population, economic activity and car ownership increasing over time.

It should also be noted that the current reluctance to return to public transport has not been included in these potential scenarios. The assumption behind this testing was that demand for public transport and roads will recover at the same rate, whereas in reality we are likely to see more of a road-led recovery initially, which could unfortunately erode away any benefits we may have felt from a reduced overall demand.

Leaving this issue aside for a moment, working on these assumptions, *Systra's* analysis suggests that:

- Overall transport demand could recover to pre-pandemic levels (2019) at some point between 2030 and 2034
- Road use demand could recover to pre-pandemic levels slightly later - between 2031 and 2034 (we know that some peak flows have returned already, but this is primarily because of the reluctance to use public transport, which has not been modelled in this exercise)
- Public transport demand could recover to pre-pandemic levels by the mid-2020s assuming the reluctance to use public transport is overcome quickly.

These effects will not be felt evenly across all parts of our network. Some locations will see demand return more quickly, with the negative impacts of congestion remaining.

Although these results are positive overall, with travel demand potentially going back to what it was around 5-10 years ago, we still had problems on our networks that needed solving 5-10 years ago. Therefore, understanding the pressures on our transport networks and planning for ways in which to keep them moving efficiently will still be vital.

Predicting future demand for transport is a difficult process, with so many uncertainties in people's travel behaviours and responses to the pandemic over time, so these scenarios represent only two possible futures for transport demand.

Lockdowns during the pandemic have created opportunities to establish a new baseline for demand for movement that's lower than it might have been otherwise. However, it is not certain that the benefits of this will be felt in the long term and we cannot be complacent that behaviours will change as dramatically as has been modelled.

These estimates imply that even if we make fewer journeys per household than we did in 2019, there is likely to still be growth in the overall numbers of people wanting to move around the Midlands in the future. The exact scale of that growth is impossible to forecast with any degree of confidence. Careful monitoring of data will be necessary over the next

few years to fully understand how new behaviours are normalised and build those changes into the way we plan for new infrastructure.

There are certainly opportunities for policies at a national and local level, or the adoption of new technologies to further influence the demand for travel and to manage overall growth. This could extend the time it takes for overall demand to return to pre-pandemic levels. However, it is very difficult to imagine a scenario in which the demand for travelling on our transport networks does not increase over time.

“Analysis of comparable historic shocks suggests that short-term shifts in behaviour that occur after disruptive events don’t often indicate the long-term outcome.”
 - National Infrastructure Commission⁶⁴

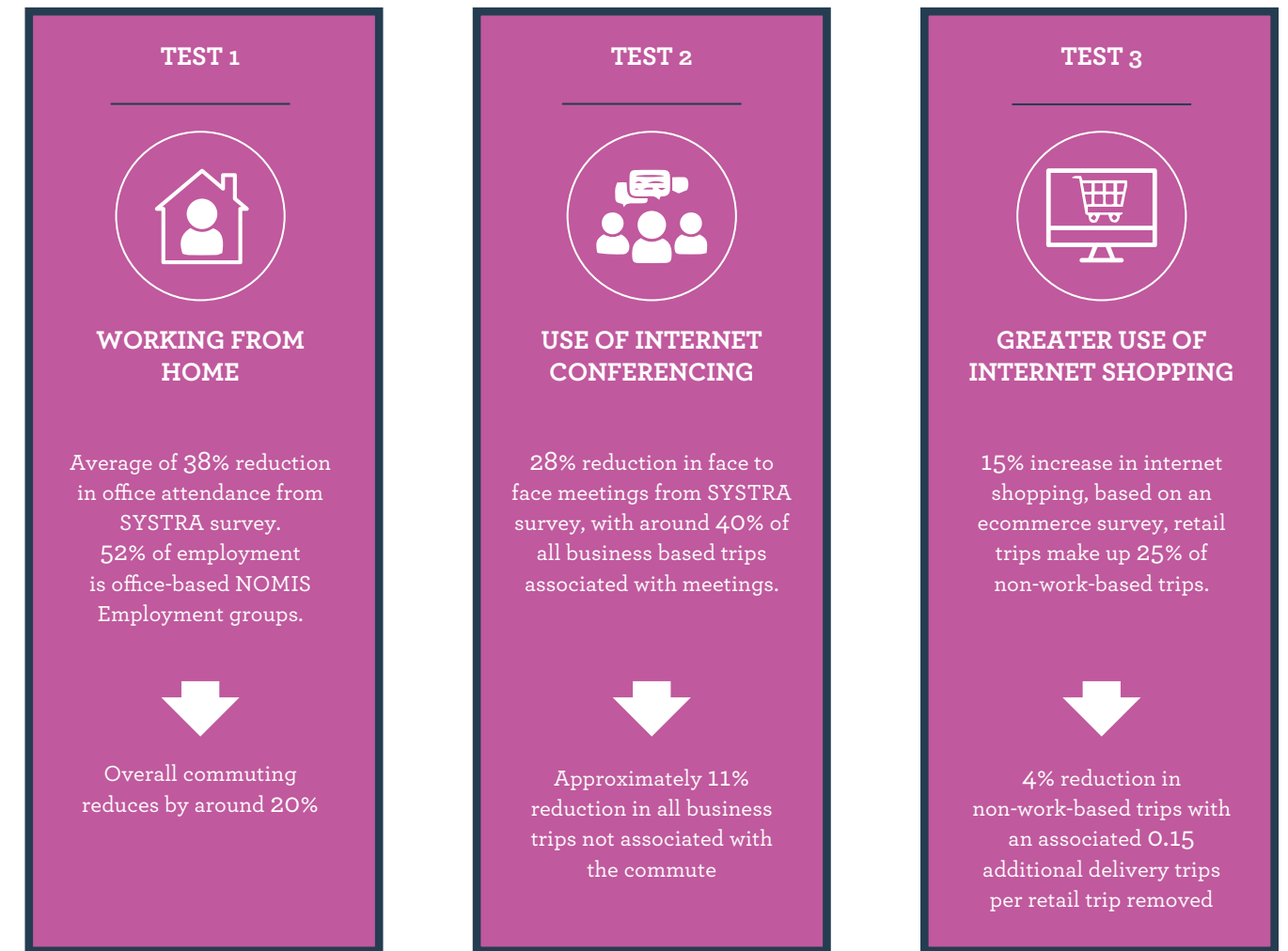


Figure 27: Assumptions for tests of post-Covid-19 transport demand (Source: Systra)

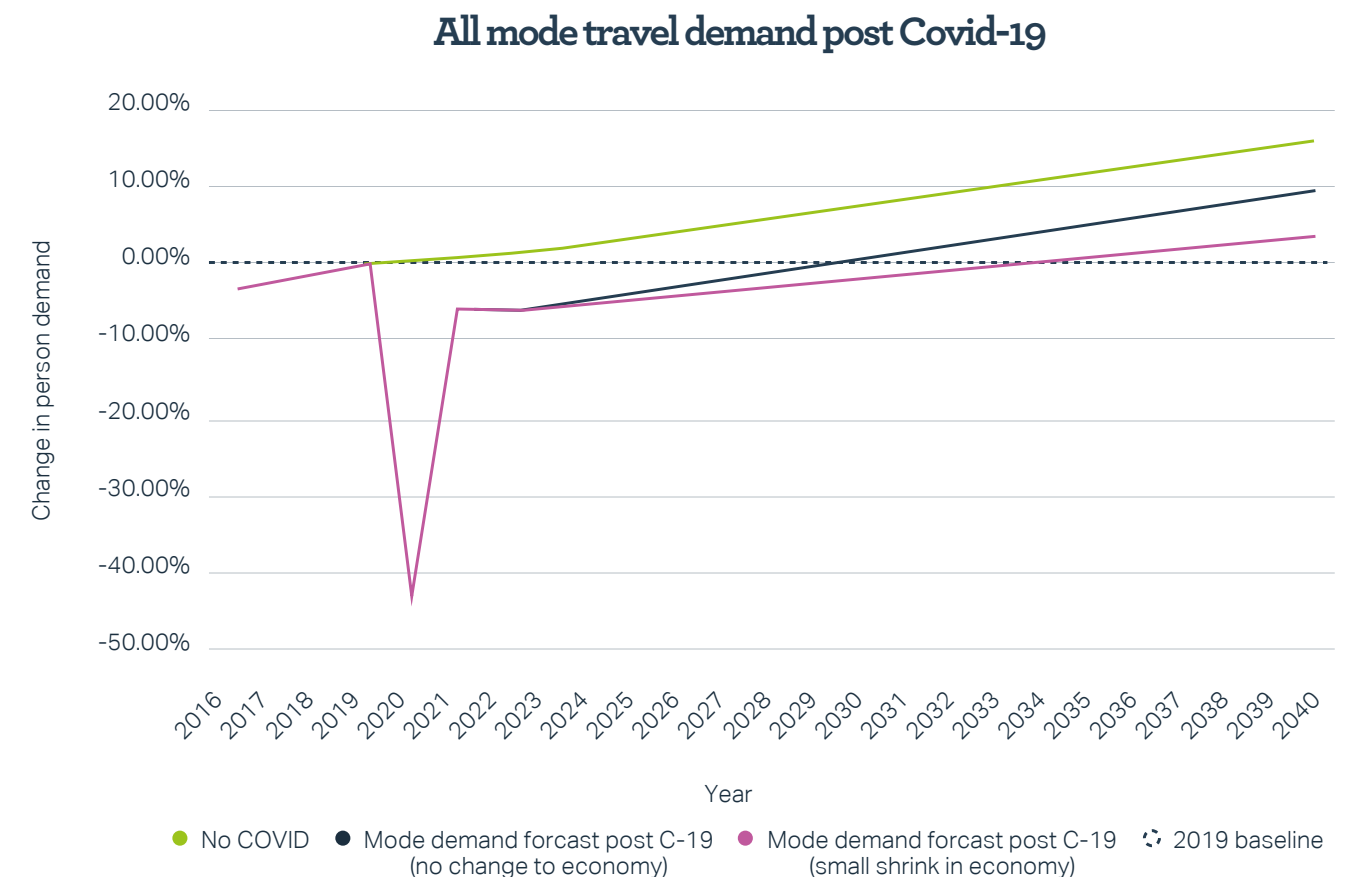


Figure 28: Forecast scenarios for post Covid-19 future travel demand (Source: Systra)

Maximising opportunities, minimising risks

Despite the many difficulties, the initial lockdowns had a broadly positive impact in terms of walking, cycling and 'new mobility' (such as powered e-scooter hire schemes). We need to take that positive from the pandemic and embed such low-carbon transport choices into the economic recovery, particularly in cities, towns and suburbs. A combination of the right investment and policies for shorter journeys, with connections to our rail and bus hubs, presents an opportunity to make sustainable and active transport the most convenient choice.

Regional connectivity need:



Better integration between local, regional and national networks

Figure 29 below indicates that much of that initial take-up of cycling appears to have been lost. However, there must be opportunities to exploit people's experience of cycling more during lockdown and to embed longer-term behavioural changes. Part of our role here is to develop a broad 'access to rail' strategy that in part considers how we can work with partners to encourage more people to access the regional rail system via sustainable transport.

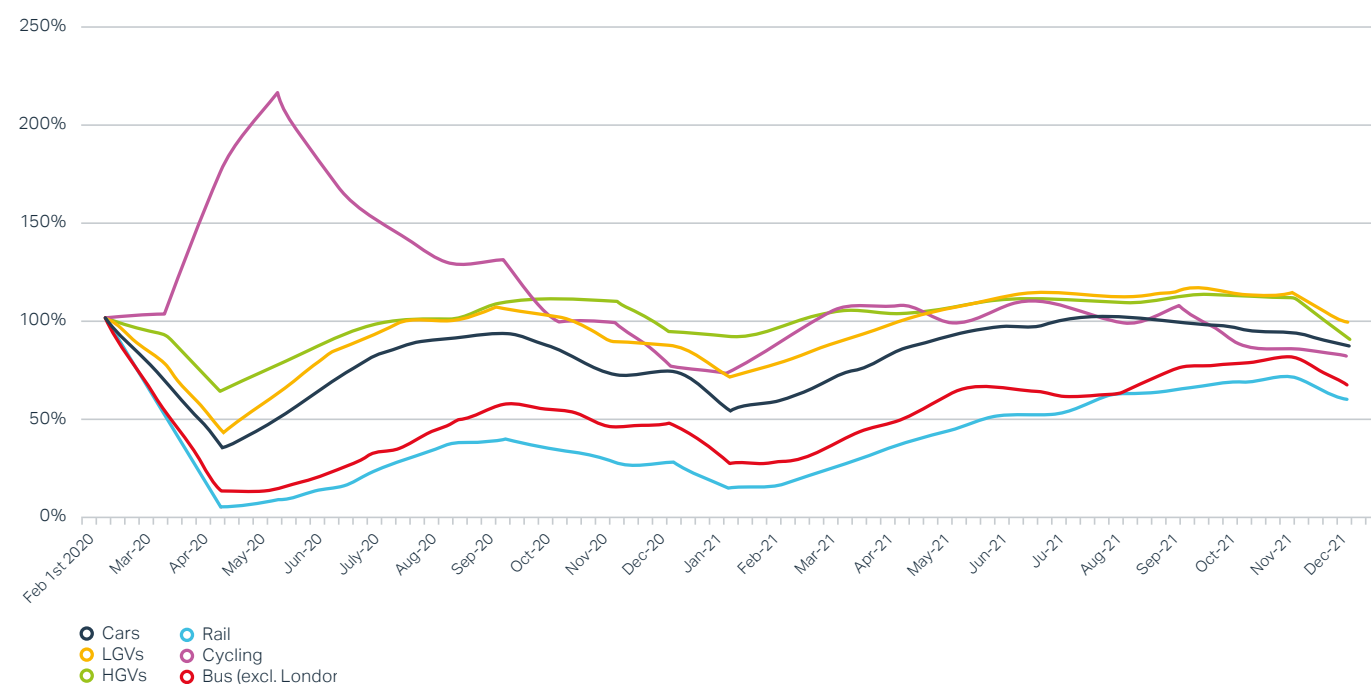


Figure 29: Transport use during Covid-19, February 2020 to December 2021 (Source: Department for Transport)

However, the current crisis has also impacted the commercial viability of public transport, with significantly reduced patronage and capacity. As shown in Figure 29, car use has started to climb back towards pre Covid-19 levels, whereas rail and bus patronage remains relatively low. This presents what we hope is a short-term challenge, but a longer-term threat also exists: the downturn in patronage could reduce the commercial viability for many public transport services. The implications for how we fund rail and rural bus services in particular are stark. The UK government has committed significant resources to supporting train operators since March 2020 in an attempt to help close the funding gap. With the transition to Great British Railways, changes to franchising models will drive a permanent shift in the ownership of commercial risk for less viable rail services. To address that issue, we are working with rural authority partners on rural mobility to understand how we may be able to bring people back to public transport after the pandemic.

We are also building lower patronage forecasts into the business cases we produce for rail schemes to enable us to understand the risks if fewer people use railways.

Regional connectivity need:



Solutions to rural transport challenges



Partner Showcase: Derby City Council

Derby Growth Zone, A50 Infinity Way:

The Derby Growth Zone includes a new A50 junction and link road to Infinity Park Way, which is a key piece of infrastructure that unlocks land allocated for employment and proposed housing planned south of Derby and crossing into South Derbyshire. By improving accessibility to the area, the new A50 junction and link road could enable the creation of up to 5,000 jobs and an annual GVA contribution estimated at £53.6 million. It could also support the delivery of 2,000 houses.

Continuous review of priorities

As discussed above, it may take a decade for overall travel demand to return to pre Covid-19 levels. It should be noted, however, that recovery may not be consistent across our geography. Some areas could see car use return far quicker, or even exceed pre Covid-19 levels sooner, particularly if confidence in using public transport does not return.

It is right that we should question previous assumptions about how the demand for travel might change over time and to build these into our forecasting techniques. In turn, those new forecasts should then be fed into our business cases and decision-making.

The future of travel demand is so uncertain, it is important that we do not lock ourselves into specific priorities. The short-term transport infrastructure priorities we present in this plan are currently our best estimates of what is needed to improve pan-regional connectivity. However, they should be under constant review as we monitor new travel behaviours over the next few years to understand exactly what the 'new normal' is.



5

Our priorities: five key areas



5. Our priorities: five key areas

5.1 At a glance

This chapter sets out our work on improving regional connectivity. Our efforts are focused on five areas:

- Our aspirations for rail
- The development of a future road network that is reliable, resilient and efficient for all
- Helping to move goods
- Responding to the unique transport challenges in rural areas
- Maximising technology-related opportunities to improve connectivity.

In each of these areas, we set out:

- Our priorities for strategic rail and road infrastructure investment
- Transport-related areas and topics where we can work with partners across the Midlands and support collaboration to develop solutions to the challenges that we face.

The decarbonisation of transport is at the heart of our objectives and runs through our priorities. Initiatives to reduce carbon emissions from transport are embedded in each of these five areas.

5.2 Our aspirations for rail

The nation's railways perform a range of different functions, from high-speed connectivity between major cities to an essential lifeline for remote and isolated rural communities. Rail is:

- **Low carbon** – it only contributes around 2% of total surface transport emissions, even with only 38% of the rail network (c. 6,000 route kilometres) being electrified⁶⁵
- **Vital for our regional economic growth aims** - in areas with high levels of road congestion or a poor-quality road network, rail can provide competitive journey times that bring urban centres closer together, driving productivity and economic growth
- **Important for levelling up** - when considered in the context of a holistic public transport network, rail has the ability to provide an accessible and affordable means of transport. This enables all people to make vital journeys to education and work that wouldn't otherwise be possible without access to a car.

Our role in rail

There is a significant opportunity for Midlands Connect, in conjunction with its partners, to create a transport system that is built around the railway. HS2 and Midlands Engine Rail have been planned in conjunction with each other to establish core national and regional rail connectivity. We can widen our scope by working with partners to further enhance connectivity through measures such as improving local public transport, improving accessibility to stations, the use of mobility hubs, and better ticketing. This will ensure the economic and user benefits of the core rail network can be felt and accessed more widely by people living and working across the Midlands.

When asked to consider a range of changes they would be prepared to make to help save the planet, 41% of people surveyed in the Midlands said they would be willing to use public transport more to reduce the amount of CO2 they emit (even if this meant their journey taking longer).⁶⁶

65. Traction Decarbonisation Network Strategy, Interim Programme Business Case, Network Rail, 2020

66. Midlands Connect poll of Midlands residents (undertaken by Censuswide), September 2021



Our rail and public transport programme

Our rail programme has five key parts to it. The following sections discuss our work in each of these areas:

1. Our Midlands Engine Rail (MER) programme, including cross-boundary linkages to areas beyond the Midlands
2. Our role and position on the decarbonisation of the rail network
3. Our plans for rail freight
4. Our progress and proposals on public transport ticketing
5. Improving access to rail, allowing more people to use the rail network.

Figure 30 maps the various elements of our rail programme against our three grand challenges.

Midlands Engine Rail

With the publication of the Integrated Rail Plan (IRP) in November 2021, funding for delivery of HS2 to Birmingham, Crewe, Manchester and the East Midlands was confirmed. This is subject to business cases being developed and approved. The Manchester and East Midlands legs are also still subject to the delivery of separate hybrid bills in the next 3-5 years.

Whilst the publication of the IRP has inevitably had an impact on our plans for MER, we now have a clear baseline upon which to re-scope the elements of MER that require it. We will use this baseline to continue

Meeting our regional connectivity needs:

-  Improved East West connectivity.
-  A competitive pan-regional rail offer.
-  Decarbonising transport

building a robust, evidence-based and deliverable programme of rail investments, focused on the three grand challenges of levelling up, decarbonisation and economic recovery/resilience. The IRP has provided the assurance we need to continue to invest time and money into progressing each component of MER alongside our rail industry partners.

The MER programme has always been designed to complement and build on HS2, spreading the benefits to the whole of the Midlands, adding east-west links, making new connections into the high-speed network and exploiting the capacity HS2 releases for new passenger and freight services. The IRP has not changed this. But this isn't just about the Midlands: sitting at the centre of the country, we're also looking to forge and improve rail connectivity with economic centres located in other regions, such as Leeds and Manchester, Oxford, Bedford and Cambridge, Bristol, Cardiff and Mid-Wales (as specified by the Union Connectivity Review).

While HS2 will deliver faster services to the largest cities nationally, our aim is to link in all the other economic centres of the Midlands through a much-improved regional rail network. This will build on and

trigger economic growth all over the Midlands, giving everyone access not only to the rail services, but also to the socio-economic benefits that are gained as a consequence.

Developing the rail network will encourage a modal shift away from road-based transport, providing a more attractive alternative for more of the region's people and freight to travel by low-carbon means. Rail provides brilliantly for longer-distance journeys (which we know are the cause of the vast majority of carbon emissions) and is a catalyst for the redevelopment of city centres and creation of additional high-density office jobs. Figure 31 shows how HS2 and MER help to connect these city centre locations.

This in turn allows our partners to develop local networks that provide seamless, end-to-end, low-carbon transport. For instance, in both Birmingham and Nottingham, there are trams that stop outside main railway stations, and integrated ticketing options are available using the local smartcard schemes. Similar plans are being developed for Coventry using an innovative Very Light Rail network and across the region, local authority partners have

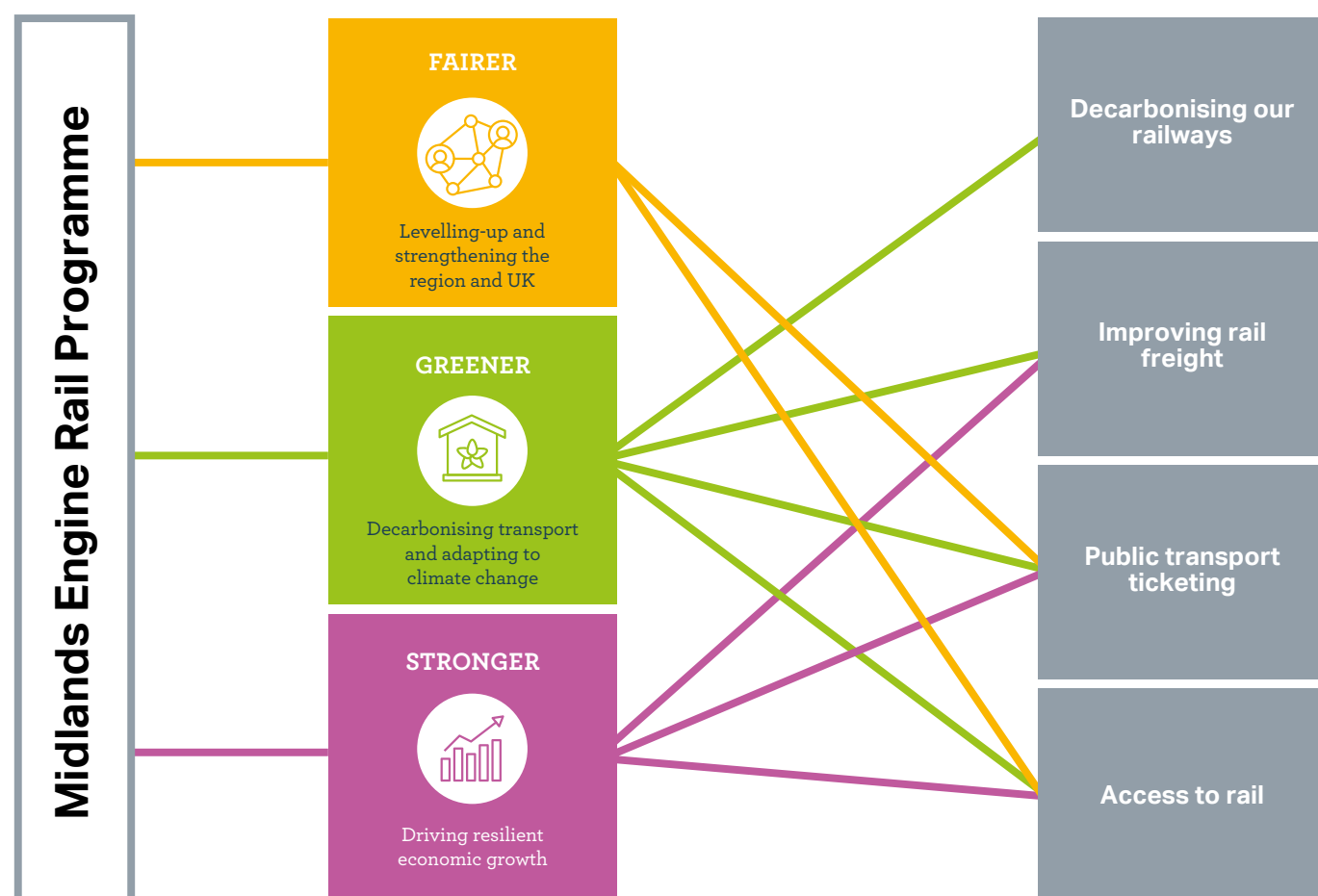



Figure 30: How our rail programme addresses our grand challenges

Legend

-  High density office jobs
-  HS2 services
-  Midlands Engine Rail
-  Midlands Connect Area

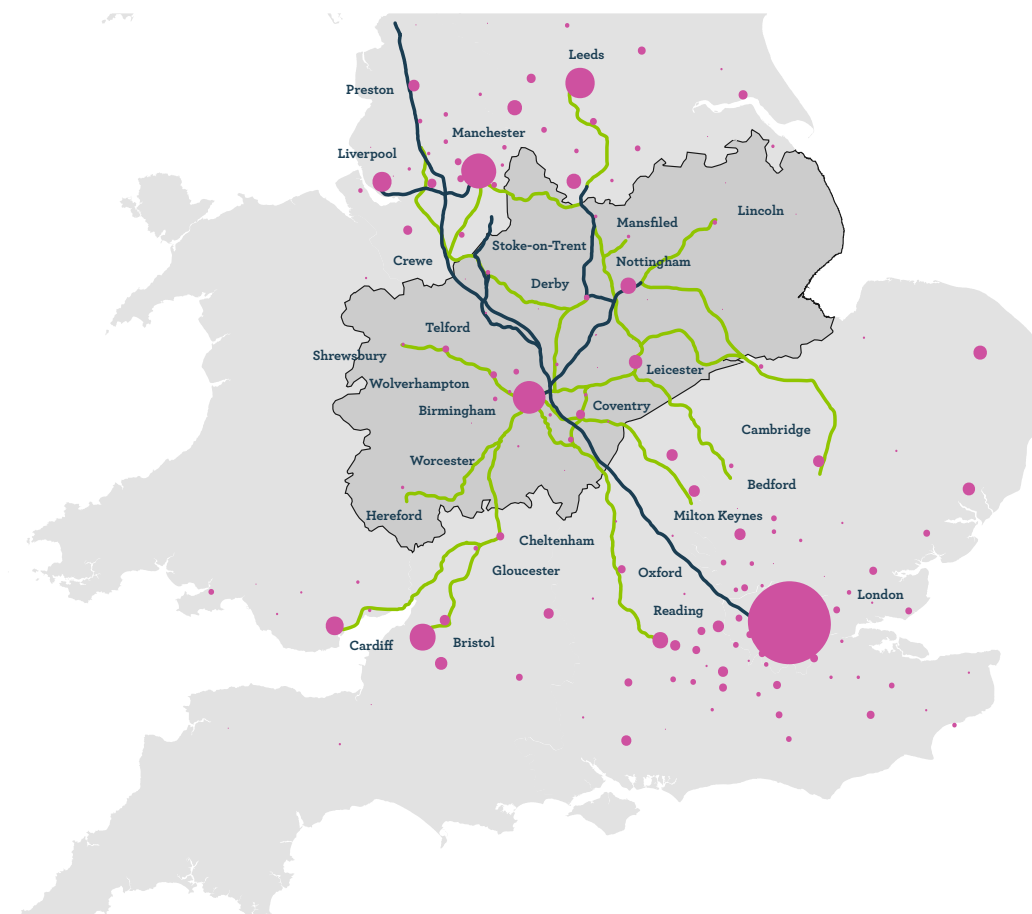


Figure 31: City centres connected by HS2 and MER

submitted their Bus Service Improvement Plans (BSIPs). These local transport networks then provide the basis for housing developments in areas that do not depend on car access, either within existing urban areas or close by. They also improve the social mobility of an area – fundamentally connecting people with education, employment and healthcare.

This development of the rail network is also critical to our recovery post Covid-19. An affordable and deliverable rail programme gives the private sector the confidence needed to develop new offices and grow the Midlands’ business and professional services sector (one of the core economic sectors in the Midlands). As shown in Figure 31, the key office centres and growth sites in the Midlands are located in Birmingham, Nottingham, Leicester and Coventry. Our programme also makes links at a national scale to office centres in Bristol, Cardiff and Reading.

What we’ve done in the last five years

In the five years since our original strategy, where we identified a number of hub-to-hub journey pairs where rail provision was inadequate (see Table 1), the MER programme has evolved into that shown in Figure 32 (page 83).

A number of Strategic Outline Business Cases (SOBCs) have been submitted to the Department for Transport (DfT). This includes an SOBC for Midlands Rail Hub that resulted in us securing £20 million to take our flagship scheme to Outline Business Case (OBC) stage. We continue to work with the DfT, Network Rail and partners on the development of individual MER scheme business cases.

Furthermore, in light of the IRP, the long-term impact of pandemic lockdowns on travel habits and the current funding constraints, the importance of understanding the additional benefits of MER as an overall programme that is delivered in increments is fundamental. As such, we are committed to developing a Programme Business Case for MER to be delivered as soon as possible, by early 2023 at the latest. As well as highlighting the complementarity and interdependencies of the various schemes, this will also set out the programme-wide benefits of MER, covering issues such as decarbonisation, rolling stock and freight.

Since 2017, we have also expanded our work to include the evaluation of cross-boundary routes

Commitment: We will deliver a **Programme Business Case for Midlands Engine Rail (MER)** by spring 2023. This will include a delivery plan that will aim for a first package of MER improvements to be in place by the time HS2 reaches the Midlands (currently 2029). It will also set out our rail position on issues such as decarbonisation, rolling stock and freight.

between the Midlands and other neighbouring Sub-national Transport Body areas, ensuring that important connections aren’t being missed. These have been considered in two ways – those routes and linkages that can be demonstrated to add value to the economy through the analysis of wider economic benefits, plus those linkages that are facilitated through the establishment of HS2 and the additional capacity it provides on both its own network and released capacity on the conventional network. Publication of the Union Connectivity Review in 2021 has also given us a remit to consider the rail links between the Midlands and Mid-Wales, including the lines radiating from Shrewsbury to Crewe, Wrexham, Aberystwyth, Hereford and Abergavenny.

Improved connectivity to Manchester and Leeds linked to HS2, from both the West and East Midlands, are shown to be particularly important. We will also continue to consider links to Cambridge and East Anglia, Bedford and Milton Keynes. With cross-boundary services, the opportunities for improvement are often tied up with bottlenecks outside the Midlands, for instance around Stockport and Ely, so we will continue to work with our neighbouring Sub-national Transport Bodies to collate evidence and look for affordable, value-for-money solutions.

Commitment: We will work with other Sub-national Transport Bodies and Network Rail to develop plans that will **improve rail connectivity between the Midlands and economic centres in other regions**, including East Anglia, England’s Economic Heartland and Wales. In response to the IRP, we will consider in detail how we can best use released capacity to improve connectivity between Birmingham, the North West and Scotland, also collating our own evidence on how high-speed services can link the East Midlands, Yorkshire and the North East.

From/To	London	BHM	NOT	LEI	MAN	LDS	South West	Thames Valley	MKC	East Anglia
Birmingham	Good				HS2	Slow	Slow	Slow	Good	Slow
Nottingham	Good	Slow			Slow	Slow	None	None	None	Slow
Leicester	Good	Slow	Good		None	None	None	None	None	Slow
Coventry	Good	Good	None	None	Slow	None	None	1 tph	Good	None
Derby	Good	Good	Good	Good	None	Slow	Good	Good	None	None
Stoke	Good	Good	Slow	n/a						
Wolverhampton	Good	Good	n/a	n/a						
Worcester	Slow	Slow	n/a	n/a						
Lincoln	Good	None	Slow	Slow						
Shrewsbury	2 tpd	Slow	n/a	n/a						
Hereford	3 tpd	Slow	n/a	n/a						
Telford	2 tpd	Slow	n/a	n/a						

Table 1: An overview of the quality of direct services from Midlands cities to key destinations and corridors in the rest of the country. Tpd = trains per day. Tph = trains per hour.



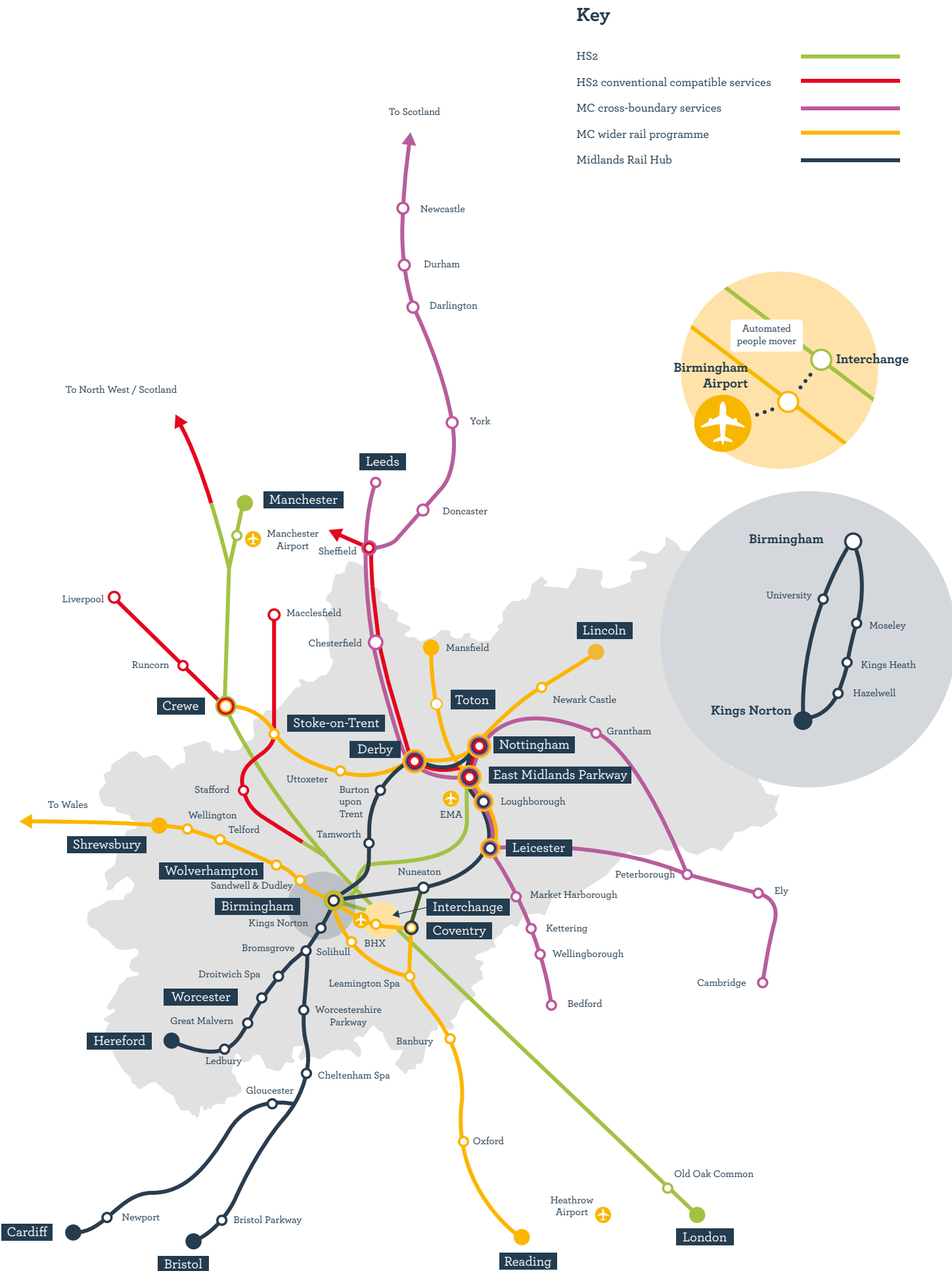


Figure 32: Midlands Engine Rail

The projects that make up MER

Table 2 provides a summary of the projects that make up MER, including the original target outcomes and current scheme status. All projects in this list are subject to funding being provided for both their continued development and ultimate delivery.

MER Project	Original target outcomes	Current Status
Midlands Rail Hub	Up to 10 additional paths per hour into central Birmingham (maximising the benefits offered by the infrastructure required), enabling HS2 connectivity, more and faster journey opportunities from across the Midlands, alongside freight benefits.	<ul style="list-style-type: none"> Rail Network Enhancements Pipeline (RNEP) Decision to Develop OBC in progress Included as a key priority in IRP MRH East business case to be revisited in light of IRP
Coventry-Leicester-Nottingham	2tph direct services between Coventry, Leicester and Nottingham, significantly improving journey times and promoting mode shift.	<ul style="list-style-type: none"> SOBC submitted showing good value for money Wider strategic case for incorporation into MRH to be established
Thames Valley to Midlands / Airport Connectivity	Improved services between Oxford (Thames Valley), Coventry, Birmingham Airport and Birmingham.	<ul style="list-style-type: none"> OBC submitted showing good value for money Wider strategic case for incorporation into MRH to be established
Shrewsbury Corridor	Journey time improvements (short-term) and service frequency improvements, including hourly direct London service (long-term).	<ul style="list-style-type: none"> SOBC in development, focussing on short-term improvements Frequency improvements and London service to take advantage of post-HS2 released capacity
Nottingham-Lincoln Corridor	Journey time improvements (short-term) and service frequency improvements (long-term).	<ul style="list-style-type: none"> SOBC in development, focussing on short-term improvements Industry-wide support for longer-term frequency improvements once case can be made Reference to Newark Flat Crossing in IRP may be beneficial
North Staffordshire Corridor	Service improvements that could include journey time, frequency and/or freight capacity, with the objective of promoting mode shift to align with objectives for parallel A50/A500 corridor.	<ul style="list-style-type: none"> No immediate value for money case for journey time or frequency improvements, but opportunities with HS2 delivery Corridor strategy ongoing considering 'Access to Rail' elements
Access to Toton	Local connectivity package to provide communities with rail and other public transport access to the HS2 station at Toton.	<ul style="list-style-type: none"> IRP concluded that HS2 station would now be East Midlands Parkway, with a local station to be considered at Toton (with 50% private sector contribution) A holistic East Midlands local connectivity package to be developed in partnership with Transport for East Midlands (TfEM) to ensure that all residents have the best possible access to HS2 via city centre stations, East Midlands Parkway and Toton
HS2 Conventional Compatible services	HS2 conventional compatible services to operate Birmingham-Nottingham (HS2 via Toton) and Bedford-Leicester-Leeds (HS2 Toton to Leeds).	<ul style="list-style-type: none"> IRP has adopted Birmingham-Nottingham aspect, via East Midlands Parkway Bedford-Leicester-Leeds to form part of a new study by MC to inform the East Midlands-Leeds route options defined by IRP

Table 2: The projects that make up MER

MER Delivery Plan

As our schemes have developed and a HS2 construction programme has been established, we have begun, in collaboration with key partners such as Network Rail, the West Midlands Rail Executive (WMRE) and Transport for the East Midlands, to set out a likely delivery plan for the MER programme. The delivery plan is broadly constructed around the following four principles (also shown in Figure 33):

- Earliest possible delivery of schemes that are independent of HS2
- Continued development and delivery of our flagship Midlands Rail Hub to build the foundation for wider investment in rail across the region – not just schemes within MER, but other partner aspirations
- Continued development of business cases for the remainder of the MER programme in light of the current fiscal situation. This is to ensure that we have developed schemes ready to respond to any opportunity to make the case for funding as part of future spending reviews
- Later packages linked to the incremental roll-out of HS2 across the region as outlined within the IRP.



Figure 33: Our proposed MER delivery plan is built on four packages



Package 1: Enhancements to existing network

Package 1 of MER represents our most immediate rail priorities for development and delivery. It is split into two sub-packages – Midlands Rail Hub and wider MER. At this stage, we cannot assign specific dates to packages as they are dependent upon funding availability from Treasury to DfT and the development of satisfactory business cases. Our role from here is to make the case for all of these projects and present government with different scales of investment opportunity. Their development and the potential sequencing of delivery will be dependent upon future government decision-making.

As Midlands Rail Hub progresses towards OBC stage, phased priorities are being identified that form a key part of Package 1 of our MER Delivery Plan. These are:

- Early delivery of Snow Hill Platform 4 and Kings Norton-Barnt Green through Network Rail's Project Speed. These two projects deliver additional capacity and improved performance on this critical section of railway, whilst also being enablers to eventually deliver more and faster services to Hereford, Worcester, Cardiff and Bristol.
- Continued development to OBC and Full Business Case (FBC) for the future delivery of all MRH outcomes (including securing the necessary Transport & Works Act Order (TWAO) for interventions in central Birmingham). This provides us with the solutions needed to improve connectivity from Birmingham to Worcester, Hereford, Bristol, Cardiff, Derby, Nottingham, Leicester and intermediate stations. We are committed to working with our partners to continue to make the case for MRH outcomes to be delivered in their entirety, even if this ultimately requires sensible phasing, with some delivered by other projects (e.g. new proposals covering the previous eastern leg of HS2) and depending on what funding becomes available.
- In light of IRP committing to deliver longer-term journey time improvements between Birmingham and Nottingham via HS2 (which will become a journey time of less than 30 minutes), we will make the case for interim journey time improvements on the Birmingham to Nottingham

corridor to achieve some benefits earlier. We will also continue to investigate options for early delivery of journey time improvements between Birmingham and Leicester that can be delivered in advance of the TWAO being in place for the core MRH deliverables.

In the wider MER programme, there are a number of smaller projects that can be delivered as upgrades to existing services on the existing network, and therefore form part of Package 1. In some cases, they provide a phased approach to longer-term aspirations that are HS2-dependent. These are:

- Establishing a direct rail service between Coventry, Leicester and Nottingham. This project is a key enabler of modal shift and specifically supports efforts to level up the cities of Coventry and Leicester.
- Delivering journey time improvements to existing services on the two key corridors of Wolverhampton-Shrewsbury and Nottingham-Lincoln. This will drive mode shift, build patronage in advance of HS2 and provide an opportunity to increase frequency at a later stage.
- Delivering service and access improvements on the North Staffordshire corridor, which could comprise of faster journey times, new rolling stock, new stations and other complementary measures to increase patronage and drive mode shift on the corridor.
- Delivering improved services between the West and East Midlands towards Peterborough, Cambridge and Norwich.

Although not part of the MER programme, we will also be pushing for the delivery of Midland Mainline Electrification and capacity improvements in the Leicester area as part of Package 1 of our MER Delivery Plan. This however should not be done without considering the impact on each other, as well as the links to projects identified within the IRP and our Package 2 and 3 schemes.

We will actively support the journey time improvements on the East Coast Mainline identified within the IRP, particularly any proposals to improve capacity in the Newark area that will help to unlock our Nottingham-Lincoln proposals.

Package 2: Released capacity

This package comprises of projects that are dependent upon HS2 Phases 1 and 2a entry into service, releasing capacity on the conventional network across the Midlands. Specifically, schemes in this package include:

- Thames Valley to Midlands/Birmingham Airport Connectivity, which increases the frequency of services between Oxford and Birmingham, benefiting Leamington, Coventry, Birmingham Airport and Solihull, also improving connectivity with our neighbours in England's Economic Heartland.
- Curzon Street to the North West and Scotland, alongside the optimisation of released capacity on the West Coast Mainline, improving connectivity to Stafford and Stoke-on-Trent.
- Use of released capacity between Birmingham and Wolverhampton to provide an hourly Shrewsbury to London service, including an additional stop at Milton Keynes, also considering options for decarbonising the corridor through electrification or the use of bi-mode rolling stock.

Dependent upon further investigation, there is a possibility for this package to include the introduction of the proposed conventional station at Toton and associated new services on the Maid Marian Line, in advance of HS2 reaching the East Midlands.

Package 3+: Beyond the IRP

In addition to Package 3, our aspiration remains to provide improved connectivity between the East Midlands and Sheffield, Leeds and the North-West, most likely taking advantage of planned improvements to the Hope Valley Line. As well as supporting the Network Rail study detailed in the IRP, we intend to collate our own evidence as to how this may be best achieved. If these interventions are demonstrated to require a high-speed line to Leeds, they will form a Package 4; otherwise we will incorporate them into Package 3 at a later date. The aspiration to provide direct connectivity to Bedford would also be incorporated into this package.

The three packages are illustrated geographically in Figure 34. The actual delivery of any of the schemes is dependent upon future fiscal events and funding decisions, providing us with the budget required to move each scheme through its project lifecycle. We will continue to work closely with industry partners including Network Rail/Great British Railways, DfT and operators to make the best possible case for our priorities.

Package 3: East Midlands connectivity

This package is enabled by the opening of the HS2 line to East Midlands Parkway, Midland Mainline Electrification to allow HS2 services to reach Nottingham, Derby, Chesterfield and Sheffield stations, and assumed changes to the conventional network at Trent Junctions and Nottingham Station. It includes:

- Increased frequency on the North Staffordshire corridor, better linking communities on the corridor with HS2 at both Crewe and East Midlands Parkway (via Derby).
- Increased frequency on the Nottingham-Lincoln corridor.
- Further improvements to local connectivity into HS2 via city centre stations in Nottingham and Derby, and possibly Toton.

Within the timescales associated with this package, we may also be able to utilise released capacity between Birmingham, Derby and Nottingham to improve services at intermediate stations such as Tamworth, Burton upon Trent and Long Eaton. Whilst there may also be released capacity opportunities on the Midland Mainline, it is important that InterCity services continue to operate to retain connectivity for those places in the East Midlands not directly served by HS2 (e.g. Leicester).

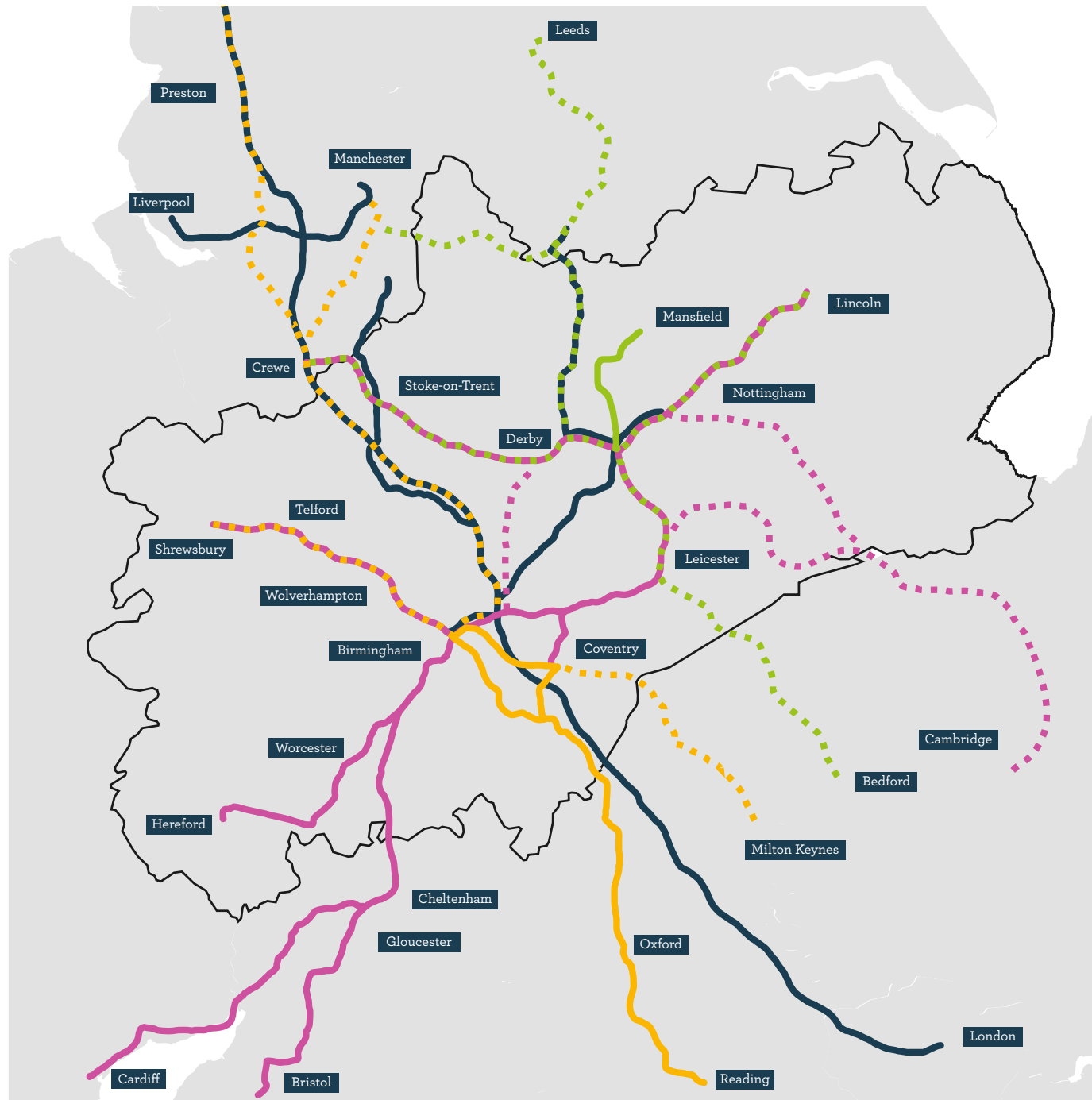


Figure 34: MER packages

Decarbonising our railways

Although rail is a minor contributor to domestic transport carbon emissions, decarbonisation of the rail network still forms an essential part of the government’s Transport Decarbonisation Plan (TDP). Commitments within that plan include:

- To deliver a net zero railway network by 2050, with sustained carbon reductions in rail along the way. The ambition is to remove all diesel-only trains (passenger and freight) from the network by 2040
- To deliver an ambitious, sustainable and cost-effective programme of electrification guided by Network Rail’s Traction Decarbonisation Network Strategy (TDNS)
- To support the development of battery and hydrogen trains and deploy them on the network as it is decarbonised
- To use technology to clean up diesel trains until they can be removed altogether.

Meeting our regional connectivity needs:

Decarbonising transport

Decarbonising rail operations

Network Rail published their interim TDNS in September 2020.⁶⁷ It stated that the most appropriate technology for the vast bulk of the Midlands rail network is electrification – due to a combination of heavy freight flows throughout the region and the strategic nature of many routes. Both hydrogen and battery were identified as alternative options on local and rural routes, where the infrastructure needed for full electrification could not be justified.

Network Rail have been developing a rolling plan of electrification, subject to national decisions on the availability of funding. This has looked at the routes that give the greatest level of carbon reduction. As priorities emerge, including projects such as the electrification of the Midland Mainline and a number of freight route electrification ‘infills’ in the West Midlands, we are generally supportive of the findings.

However, we are also investigating whether hydrogen, battery and bi-mode trains (electric and diesel) could be an interim solution to full electrification in many areas. It could even be a longer-term option if the cost of overhead electrification is deemed to be prohibitive (which may particularly be the case on routes with constrained structures like tunnels and bridges), or if government funding does not become available. We will link our rail decarbonisation work with our investigations into the provision of alternative fuels recharging and refuelling networks.

Partner Showcase: Marches LEP

Improving rail between Birmingham, the Black Country and Shrewsbury:

Services on this corridor are currently slow, infrequent and do not offer the connectivity required to rebuild the economy and generate jobs – in particular, fast connections between the principal urban centres on the corridor and London. Line speed improvements, ideally including electrification of the railway between Wolverhampton and Shrewsbury, and an increased number of services, will enable faster and more reliable journeys, providing benefits to businesses and residents and encouraging more trips by rail rather than road.

67. Traction Decarbonisation Network Strategy, Interim Programme Business Case, Network Rail, 2020

We will continue to examine the evidence and relative merits of different approaches before finalising our position. We are doing this work partly to identify how the railway might be decarbonised more quickly and partly because we know that there is limited funding available for enhancing our railway and full electrification is a very expensive option. We will formalise our position for inclusion in our Midlands Engine Rail Programme Business Case in spring 2023.

If funding is tight, we believe a debate is needed on the best use of available funding. Carbon reduction is vitally important and must commence immediately. Discussions need to be held about whether, in the first instance, funds should go towards programmes which seek to tackle the 2% of emissions attributable to rail, or programmes which seek to shift people and goods from roads, which contribute 96% of carbon emissions from transport in the Midlands.⁶⁸ If there are cheaper, interim solutions to decarbonising the operations of our railway then we may, in specific cases, advocate that funds are directed more at enhancements which make the railway more attractive instead.

Commitment: Throughout 2022, we will continue supporting Network Rail in developing an **evidence base for the prioritisation of decarbonising rail routes in the region**, and subsequently support a rolling programme of electrification that aligns with shared priorities. As confirmed in the IRP, the Midland Mainline will be one of these shared priorities, as will the decarbonisation of the Snow Hill line.

Improving rail freight

Of the 11 Strategic Freight Routes identified by Network Rail,⁶⁹ six pass through the Midlands Connect geography. The Midlands is en route to much of the rest of the UK, principally the links between the North and Scotland, and the East Anglian and South Coast Ports and the South East and South West of the UK. Therefore, rail freight capacity through the Midlands is a vitally important consideration for Midlands Connect and our partners, but also for the wider freight industry.

In parallel with passenger services, our efforts to improve rail freight are focused on two main objectives: mode shift from road to rail and the decarbonisation of existing rail freight markets. These objectives align with the rail freight commitments set out by the government in the TDP:

- To introduce a rail freight growth target
- To incentivise the early take-up of low carbon traction for rail freight.

We have identified rail freight projects that we can progress as a Sub-national Transport Body, as well as those likely to be developed by other organisations that Midlands Connect are supportive of.

Meeting our regional connectivity needs:

-  Decarbonising transport
-  Fast and reliable connections to international gateways

Midlands Engine Rail and freight

The impacts for freight of our Midlands Engine Rail schemes are outlined below:

Midlands Rail Hub: The main rail bottlenecks for freight within the region are at Water Orton (just outside Birmingham) and Leicester. Improvements at these locations would align closely with those required to enable our ambitions for enhanced passenger services in these areas. The scheme currently proposed includes provision for freight growth, with further capacity proposed at Water Orton. The scheme also provides the opportunity to address the Leicester bottleneck, which has been the subject of an industry-wide study (albeit one that is currently unfunded beyond SOBC stage). Once both bottlenecks are resolved, there should be capacity for an additional west-east service to operate on the Felixstowe to West Midlands Strategic Freight Corridor.

Birmingham Airport Connectivity: The proposed additional double-tracking between Leamington Spa and Coventry supports additional capacity for rail freight. Whilst wider measures may be needed to take full advantage of this capacity, including resolving constraints in and around Coventry station,

our proposal will ‘unblock’ one of the key constraints on the network.

Coventry to Leicester/Nottingham: This scheme proposes to introduce a new grade separated crossing at Nuneaton which will dive under the West Coast Mainline. This new infrastructure could provide a key new connection for freight traffic between Leicester, Coventry and the south of England. We have received strong endorsement for this intervention from the rail freight industry.

Birmingham to Shrewsbury/Derby-Stoke-Crewe/ Nottingham to Lincoln: Finally, for the remaining three MER corridors, our business case work takes into consideration the level of freight currently operating on the corridors and future aspirations for growth.

Wider industry rail freight schemes that are important for the Midlands

Our membership of the rail industry’s Strategic Freight Network Steering Group provides excellent visibility of the pipeline of industry freight schemes. The larger, strategic rail freight schemes and studies that are important to rail freight movements through our region include (but are not limited to) those set out below.

Felixstowe to the Midlands and North: A programme business case is currently being developed by Network Rail that will see the route between Felixstowe and the Midlands upgraded to allow for additional freight trains to and from Felixstowe. Specifically, the work is underpinned by the aspiration for Felixstowe to be served by 48 trains per day (per direction). There are several constraints on the corridor – with work currently focused on the Ely area.

Solent to the Midlands: Feasibility work is ongoing by the industry to investigate providing improved links for freight between the Solent and the Midlands. A joint piece of work was undertaken by Highways England (now National Highways) and Network Rail, noting that the A34 highway corridor runs broadly parallel to the railway corridor and also serves the Port of Southampton. There are some interfaces between this work and Midlands Engine Rail – for example the Birmingham Airport Connectivity scheme being a means to remove one of the constraints on the corridor.





Electrification of the rail network: As described above, we are looking forward to working with Network Rail and the rail industry to understand how the recommendations in the TDNS can be implemented, be that through a rolling programme of electrification or by other means.

London Rail Freight Strategy: In 2020, Network Rail published its London Rail Freight Strategy, outlining a programme of enhancements for cross-London freight traffic using the orbital routes – namely the North London Line, West London Line and Gospel Oak to Barking routes. Although distant to the Midlands Connect geography, the capacity for freight to operate effectively through London has clear implications for the Midlands, with corridors such as the West Coast Main Line supporting huge flows of freight to, from and through the South-East.




Trans-Pennine freight improvements: An ongoing piece of work is exploring the capacity for freight to operate across the Pennines. We will continue working with Network Rail and Transport for the North to understand the findings of this work. The Integrated Rail Plan's proposals for further upgrading the Trans-Pennine route will need to be fed into this in order to fully understand the implications for freight routing.

How rail can support our wider freight improvement plan

Beyond the rail-specific schemes detailed above, the rail network in the Midlands has huge potential for contributing to the delivery of our wider freight improvement plan for the region, particularly in areas such as the provision of Strategic Rail Freight Interchanges, increasing urban freight deliveries and maximising the impacts and benefits of freeports. The role of rail in progressing these initiatives is discussed in our freight priorities section.

Better public transport ticketing

Meeting our regional connectivity needs:

-  Decarbonising transport
-  Improving digital connectivity
-  Responding to the impacts of Covid-19

In the Williams-Shapps Plan for Rail,⁷⁰ the government stated its ambition to make journeys seamless across rail, bus, tram and bike. The TDP further supports this by recognising that fares and ticketing are a barrier to modal shift to more sustainable transport. It includes commitments to:

- Work with industry to modernise fares, ticketing and retail sales to encourage a shift to rail and cleaner, greener transport journeys
- Consult on a Mobility as a Service Code of Practice.

In addition, a £360 million commitment is included within the IRP⁷¹ to introduce London-style contactless ticketing across the commuter networks of the Midlands and the North within three years. This is part of government aspirations to bring local public transport connectivity across the country closer to the standards of London.

To attract customers to public transport, the process of planning and paying for a journey needs to be as simple as possible. We need to remove complexity, increase ease of purchase and make ticketing more transparent so that customers know they are always paying the cheapest price for their journey.

Our research locally shows that a number of pan-regional journeys currently being made by private car between the region's economic centres could be faster by train, even with a bus or tram journey at either or both ends. However, a combination of price, ticketing complexity and inconvenience deters many customers from making the switch from the car to public transport.

Ticketing needs to reflect the trend towards increasing flexible work and travel patterns that have been accelerated by Covid-19. For many customers,

traditional weekly or monthly season tickets, based on a 5-days a week commute pattern, no longer represent value for money.

Cashless, touch free payment is now an expectation for many customers and, even before Covid-19, public transport operators had seen significant shift towards smart rather than paper-based tickets. 50% of journeys were made using a smart ticket in 2019, up from 37% in 2018.⁷² Working with our partners, we are undertaking research to ensure we can meet this customer expectation.

Our short-term goal: intra-city or area multi-operator payments

Over the past three years, working closely with Transport for the West Midlands and Nottingham City Council, we have developed a technical solution for a region-wide 'tap and cap' smart payment system for public transport, similar to that used by Transport for London.

This system allows all public transport, including buses, trams and rail journeys to be paid for by a single smart card, bank card, or electronic device, across the whole of the Midlands. The system is termed a regional 'Broker' solution.

This solution will allow daily or weekly fare capping on almost any geographical basis. This means it can be tailored specifically to maximise value for customers and to encourage people to use public transport. So, as well as providing fare capping in single cities or combined authorities, caps can also be applied to pan-regional movements. For example, if data shows that there is strong demand for people to travel between Coventry and Leicester then a daily public transport fare cap can be applied so that people can catch the bus and train, simply tapping their bank card and be confident of being charged the best value fare.

We continue to work with our partners and DfT to understand how this solution might be taken forward in the Midlands or potentially pushed to become a national solution supported by DfT. Midlands Connect would not deliver the solution, there are other organisations who are better placed to do this. Our primary role from here is to work with all local authorities across the region to help ensure readiness to integrate into any scheme which may come forward.

Our longer-term goal: inter-city/area and multi-modal payment options

Our longer-term ambition is to see this idea integrated into local multi-modal ‘Mobility as a Service’ (MaaS)⁷³ offers that could include items like parking, e-scooters and car clubs. Making travel easy to plan and pay for is essential in ensuring sustainable transport is the go-to-choice for as many people as possible.

Through research using mobile phone data, we have identified examples where the car is currently the dominant mode of travel despite potentially taking longer than it would to make the same journey using a combination of train, bus and / or tram. In

order to encourage modal shift for these journeys, we are investigating smart ticketing options that would enable customers to plan and book trips using different transport modes across the Midlands region as easily and cost-effectively as making a journey using only one mode.

Figure 35 shows how multi-modal and multi-operator fare capping could, in theory, eventually be applied on numerous different geographies (shown using dotted lines), including potentially across the whole region. However, there is much work to do to develop operator agreements and put in the necessary card reading hardware. If funded, the idea is likely to start in two or three areas initially and grow from there.

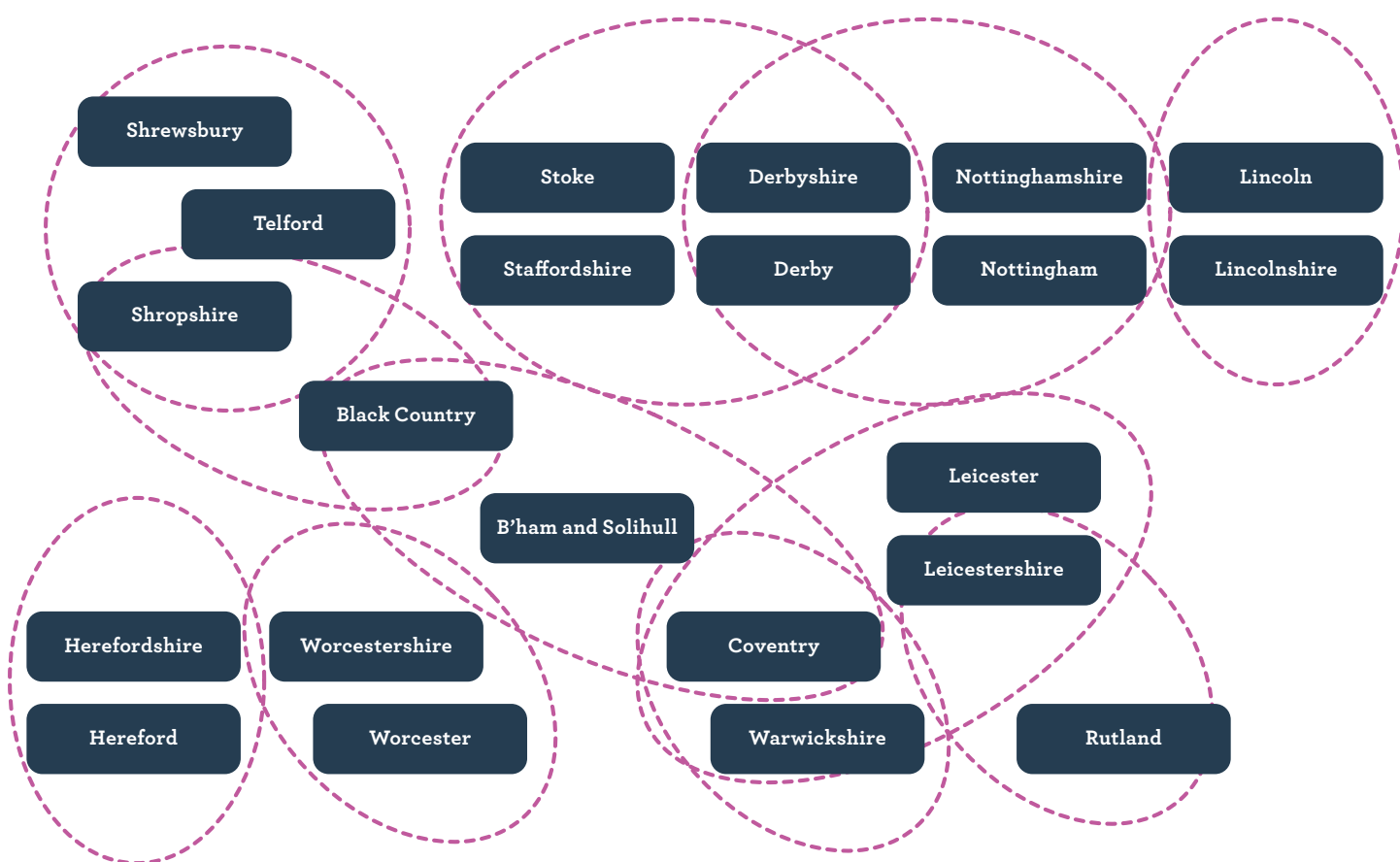





Figure 35: Graphical representation of how the ‘Broker’ could enable daily or weekly public transport fares to be capped at many different geographical areas, depending on passenger demand and operator agreements.

Improving access to rail

Meeting our regional connectivity needs:

-  Better integration between local, regional and national networks
-  Solutions to rural transport challenges
-  Decarbonising transport

Over 80% of the population in the Midlands already live within 5km of a railway station. However, less than 3% of journeys starting or ending in the Midlands are undertaken by rail.⁷⁴ This indicates that there are barriers to people choosing to travel by rail. Research undertaken by Passenger Focus, Moovit⁷⁵ and others has identified the following as some of those barriers: frequency, uncompetitive journey times, reliability and timetable limitations (evening and weekend travel).

MER tackles some of these barriers for most of our city-to-city journeys. In addition, West Midlands Rail Executive and Transport for the East Midlands are developing schemes and specifying requirements through their franchise management roles more locally. Despite this, gaps in service and barriers will remain. Improving access to rail can help identify and solve these barriers.

‘Access to rail’ is about providing improved transport connectivity for those for whom rail is not currently a viable or attractive option. The pan-regional rail aspirations of Midlands Engine Rail will not work if people cannot get to/from the railway. The ‘last mile’ of a pan-regional journey is vitally important.

Many areas with limited access to the rail network in the Midlands are either rural, demonstrate higher levels of deprivation or often both. Some of these locations include Staffordshire Moorlands, Derbyshire (Peak District) and the Lincolnshire coast. Our Carbon Baseline Tool also indicates that these characteristics can lead to higher levels of carbon emissions in these areas. By bringing a higher proportion of the population within reach of rail, we can directly influence the efforts to level up and decarbonise the region.

We are developing an ‘access to rail’ work programme, working with partners to identify what this could most usefully cover. Potential themes include:

- Optimising existing rail assets, including first/last train and service reliability
- End-to-end journeys and first mile/last mile transport mode options
- Station gateways (town and city centre)
- Stations as community hubs (rural): multi-modal interchange
- Transit-oriented development
- The role of strategic park and ride
- New station and line re-openings (Restoring Your Railway)
- The role of bus / coach in the strategic transport network.

We recognise that these themes or policy areas are primarily the concern of our local transport authority partners. However, understanding how they contribute to an integrated strategic transport system and what our role could be to help develop and deliver them is still vitally important.

From talking to partners, initial indications are that we can create a strategic framework that considers access to rail and provides guidance on setting standards for access to rail, thus closing the gap between the rail components of our Strategic Transport Plan and local transport plans. This is endorsed by the government’s TDP which emphasises the importance of improving rail journey connectivity, stating that “ensuring better integration with other local transport services through Local Transport Plans will transform stations into joined-up mobility hubs within local and regional transport networks.”

Optimising existing rail assets

Our aim is to make rail more accessible by providing journey opportunities to the places people want to go, at the times they want to travel. This could include: reviewing evening and weekend timetables, working with Network Rail to review engineering access arrangements and whether there is a case for changing them, and reviewing direct routes and services in light of changing travel patterns post Covid-19, given the observed shift to more discretionary travel. Improving the rail network service to better support the region's visitor economy would be one of the key outcomes of this theme.

The end-to-end journey

Connecting our population to public transport options for regional and national journeys will require a joined-up approach in planning transport across our region. Figure 36 shows how an integrated approach will allow us to cater for the whole end-to-end journey. Measures that could transform end-to-end journeys include:

Mobility as a Service (MaaS): a one-stop shop to plan and pay for multi-modal transport, removing the complicated and fragmented approach we have today.

Dynamic Demand-Responsive Transport (DDRT): flexible routes that give the public access to public transport, either for a whole journey or for connecting to a transport hub for onwards rail, tram or bus connections.

E-scooters: providing an alternative to the car for short journeys and connecting to transport hubs.

E-cargo: exploring how e-cargo can support moving towards micro-consolidation centres to support commercial and home deliveries, reducing the last mile delivery van trips and their associated congestion and pollution impacts.

Data hubs: consolidating all forms of transport data to improve data analytics to inform network management, provide information to travellers, and market research and demand analysis for service providers.

Smart parking: exploiting technology for better management and use of public parking places on- and off-street, including using dynamic pricing and information to encourage or discourage travel depending on wider network and air quality conditions.



Figure 36: End to end journeys

Station gateways

Railway stations are, fundamentally, the places where access to rail is achieved. The look and feel of station buildings and their approaches has been transformed in the last decade, with multi-modal interchanges located as close as possible to station entrances a key aspiration. Devolved funding has been a catalyst for this.

In the Midlands, the transformations of Wolverhampton and Coventry Rail Stations have recently been completed. The Leicester Station Masterplan (funded through the government's Levelling Up Fund) will focus on the pedestrian approaches to the station from the city centre as well as the provision of a significant upgrade to station facilities. Stoke-on-Trent's Transforming Cities Fund programme is centred around improving multi-modal interchange between rail, bus and active modes at both Stoke-on-Trent and Longton Stations.

Significant station investment is now based on the mobility hub/station concept. These hubs can be of differing scale, ranging from modest facilities at a bus stop to a larger scale offer at a major transport hub.

We are creating a classification of the stations across the Midlands to identify the role they currently play, or have the potential to play, within their communities. We will use this to identify strategic opportunities for station investment where the mobility hub concept can contribute to achieving our objectives.



Figure 37: Leicester Station Masterplan visualisation

Strategic park and ride

Whilst our strong preference for providing access to rail is by sustainable modes, there is and will continue to be demand for car parking at stations. We want to identify which stations have the potential to fulfill this role to shorten the portion of pan-regional journeys taken by car.

New stations and line re-openings

The DfT's Restoring Your Railway (RYR) programme⁷⁶ is designed to accelerate plans that could restore lines and stations to communities, including those closed during the Beeching cuts of the 1960s. Through this initiative, programme funding is available to local authorities with MP backing. The money available can be used for schemes that open stations, upgrade freight lines for passenger use, and re-open lines. Many of the current RYR proposals in the Midlands address the decarbonisation and levelling up agendas and/or support new housing growth.

These schemes can have very substantial benefits, but also potentially significant costs. Whilst remaining neutral on the specific merits for any individual project, we have helped provide advice to the promoters, alongside the DfT and Network Rail, on how the schemes might fit into the wider rail network and our strategic plans. As business cases are submitted, we will assess the merits of each scheme in terms of its complementarity with our wider rail and public transport programme.

76. Restoring Your Railway Fund, Department for Transport, 2020

Regional bus and coach services

Despite all the potential aspects of our ‘access to rail’ programme, there will always be parts of the Midlands geography that the rail network will never be able to afford to reach. In these examples, high quality bus or coach services – with minimal infrastructure requirements and cheaper rolling stock - offer a more affordable solution, assuming they can deliver competitive journey times. Relatively large yet deprived towns such as Leek, Coalville and Bourne may be candidates for such services, as are tourist destinations, such as parts of the Peak District. As we build our evidence base, we will work with our partners to identify, prioritise and develop proposals where bus/coach can form part of the strategic transport network.

The role of the bus in improving strategic transport:

A high performing bus network could play a crucial role in filling some of the public transport connectivity gaps that the rail network does not currently provide for. It can also play a crucial role in enabling and improving access to the rail network by improving multi-modal public transport integration.

The region’s bus network, particularly in city and urban areas in both the East and West Midlands has an indisputable, but often undervalued, role in our transport system. It reaches large parts of the region, providing an essential mobility service for people to access employment, education, leisure and other key services and, crucially, allows for integration with other modes of transport.

In March 2021, the DfT set out a National Bus Strategy for England (Bus Back Better) with the aim of delivering better bus services for passengers, through ambitious and far-reaching reforms of how services are planned and delivered. This describes how Local Transport Authorities and local bus operators must work at pace with local communities to plan and deliver a fully integrated service with simple, multi-modal tickets, more bus priority measures, the same high-quality information for all passengers in more places, and better turn-up-and-go frequencies that keep running into the evenings and at weekends.

Government has asked Local Transport Authorities, working with their local operators, to develop and implement Bus Service Improvement Plans (BSIPs) to enable these improvements and set out a vision in each area for delivering the step change in bus services required by the National Bus Strategy. Our partners submitted their BSIPs to government in October 2021.

It is for our local authority partners to take the lead on improving the region’s bus network and bus services. However, working with the DfT and partners, Midlands Connect has identified two ways it can support these efforts: by establishing a regional bus forum, and by developing a pan-regional bus strategy.

A regional bus forum: The DfT has indicated that Sub-national Transport Bodies can play a useful role in helping Local Transport Authorities and operators implement their BSIPs and develop their Enhanced Partnerships (EPs) by establishing Bus Forums (where these do not already exist in a region). The forums will bring together local authorities, operators, business stakeholders and passenger representatives to support Local Transport Authorities in considering how they can use their bus transformation funding efficiently and avoid duplication of effort. We will work during 2022 to establish a regional bus forum in the Midlands. It is anticipated that this forum will be comprised of Midlands Connect partnership members who wish to participate, plus operators and user groups. The remit and objectives of the forum will be established in due course, but amongst other things, we envisage that the forum could help:

- Identify gaps between BSIPs where cross-authority bus services would or could offer an improved service, also establishing the optimum way to deliver these services
- Identify common themes, challenges and opportunities where Midlands Connect’s ability to work across the region can help to alleviate these challenges
- Share best practice between partners and forum members
- Continue ongoing work to plot a course through the industry challenges associated with the development and implementation of multi-modal smart ticketing.

A pan-regional bus strategy: We will use the regional bus forum and the lessons learned from other Sub-national Transport Bodies (namely, England’s Economic Heartland, Peninsula Transport and Western Gateway), to bring together common issues around BSIPs and develop a pan-regional bus strategy for the Midlands. This strategy will outline the role of improved bus services in improving transport connectivity that can be achieved by individual authority BSIPs and will also focus on developing and providing high-quality express bus and coach services in the region (as described above). The strategy will help define Midlands Connect’s longer-term role in buses and support bus and public transport investment decisions at a regional level to complement local investment. The strategy will be an important part of a wider rail and public transport improvement plan. As such, it will provide a clear link to other aspects of our work, including but not limited to our MER and access to rail programmes, as well as our rural mobility hub research.

A detailed plan for improving rail and public transport

Our first strategy introduced the concept of MER, a programme that can transform regional rail connectivity. This Strategic Transport Plan turns that concept into a viable delivery plan, reflecting the progress we have made in the last five years. However, our rail proposals are now about more than just MER. This section has summarised how we can work with our partners to develop a holistic and integrated rail and public transport system in the Midlands, something that can be at the heart of regional levelling up, decarbonisation and growth aspirations.

Commitment: We will work with our partners to develop a **wider rail and public transport improvement plan** that builds on Midlands Engine Rail to support rail patronage growth and modal shift of both passengers and freight across the Midlands. We will publish our plan by spring 2023.



Partner Showcase: Leicester City Council

Leicester Rail Station and Coventry – Leicester – Nottingham rail services:

In order to accommodate increased rail services to Leicester, significant works are needed at the station. Direct services between Leicester and Coventry are an aspiration for both areas.

Partner Showcase: Worcestershire LEP

North Cotswold Line:

The North Cotswold line links Worcestershire with the Thames Valley and onto London. A more frequent connection will allow a more prosperous future for communities along the line.



5.3 Developing our future road network

The total length of the road network in the Midlands is over 7,000km, with the Strategic Road Network (SRN) totalling nearly 2,800km and the Major Road Network (MRN) over 4,300km.⁷⁷ More than 75 billion miles were travelled across our region's road network in 2019.⁷⁸ Over 68% of commuting trips in the Midlands are made by road⁷⁹ and 83% of miles travelled are on our roads⁸⁰.

Several of the region's key industrial sectors, including freight and logistics, retail, manufacturing, and construction, are dependent upon the SRN and MRN to move people and materials. These industries employ large numbers of people across the region.

As described earlier, even in a scenario where we all travel and use cars less at a household level, current national forecasts indicate that the overall growth in population and economic activity will likely lead to an increase in overall travel demand, including the demand to travel by car. Whilst electric vehicles will remove carbon and most particulate emissions at the point of use, they will not reduce the congestion that is already holding back our economy.

Whilst we may anticipate further societal changes that could alter the future in ways we are yet to know, for now roads remain a key element of our transport network and will be vitally important to our economy, our communities and how we accommodate population growth in the coming years. Well-maintained roads allow for faster and more reliable journeys, boosting the productivity of businesses, and serve all road users. They are also central to the future of transport, playing a vital role in the take-up of autonomous vehicles and greener forms of transport such as walking, cycling and bus use.

However, future investment in roads must not come at the expense of a reduction in carbon emissions. We must continue to responsibly plan for our road networks to be more efficient, safe and to facilitate opportunities for accessibility, growth and prosperity. In doing so, we will continue to review the need for any potential interventions on our road networks and work with delivery partners to ensure any schemes which come forward deliver improvements for all road users, and ideally realise an environmental net-gain from any new infrastructure.

85% of Midlands residents we surveyed said that during the climate crisis they still support investment in road improvements to unlock jobs, reduce congestion, support new housing and drive economic growth.⁸¹

Our road investment programme

Our road investment programme includes the following measures:

- The realisation of opportunities to improve the service to users of the SRN and MRN
- Considering how we can place digital technology at the heart of our road investment work
- Progressing opportunities to help accelerate the take-up of electric cars, vans and alternatively fuelled lorries
- Future-proofing our road corridors to ensure that:
a) the effects of climate change have less of an impact on the region's transport network; and
b) our road corridor improvements can have a positive impact on the natural environment.

There will be a continued need to invest in specific locations on our road networks for bespoke reasons, but we do not support wholesale investment in roads. Where possible, we only promote upgrades to existing infrastructure, avoiding unnecessary new alignments. The one caveat to this is where investing in new roads can help places put greater importance on using local roads in a different way – i.e. where bypassing a town in turn helps that town reallocate road space to other modes and achieve a shift away from cars for local trips.

Although we are still likely to recommend road capacity enhancements in specific locations, we will also undertake periodic and thorough reviews to check that:

- The overall carbon trajectory required from transport use is being followed; i.e. that the trajectory is tracking downwards at the right pace to meet climate change requirements (not just net zero by 2050). If it is not, then we can use our data and evidence to feedback information to all those parties who have a role to play in driving down CO₂ emissions (including local and national government, businesses and the public)
- Any proposed road investment is not 'the easy option' and that ways to reduce road use are being considered locally and nationally
- There is no viable alternative to increasing road capacity in a specific location to achieve the required outcomes.

Commitment: We will seek investment in specific locations on our road network that deliver improvements for all road users. Our focus will be on upgrading existing infrastructure, avoiding new alignments where possible. We will only promote road capacity enhancements where there is no viable alternative in a specific location to achieve the required and desired outcomes.



77. Midlands SRN and MRN road lengths using GIS calculations, Midlands Connect, 2021 78. Motor vehicle traffic (vehicle miles) by local authority in Great Britain, Table TRA8901, Department for Transport statistics (2019 figures reported given impact of COVID-19 on 2020 motor vehicle miles 79. National Travel Survey, Department for Transport, 2019 / Road traffic statistics, Department for Transport 80. National Travel Survey, Department for Transport, 2019 81. Midlands Connect poll of Midlands residents (undertaken by Censuswide), September 2021

Investing in our SRN

Our Strategic Road Network (SRN) consists of our motorways and our most important A-Roads. This network is managed and maintained by National Highways on behalf of the DfT.

Our first strategy identified several important road corridors which linked the east and west of the Midlands (shown in Figure 38). Our strategy identified these corridors as those which represented the biggest opportunity to transform our regional economy, if they provided a much-improved service from today. Unlocking existing issues on these

corridors will enable the Midlands' sub-economies to work more effectively together and transform access to regional and UK gateways.

Over the past few years we have examined the following corridors in detail:

- **The A46 Corridor:** between Tewksbury and Humberside (including the M69 and A15)
- **The A5 Corridor:** between the M6 in Staffordshire and the M6 in Warwickshire
- **The A1 Corridor:** Doncaster to Peterborough
- **The A50/A500 Corridor:** between the M6 at Stoke and the M1
- **The A38/M42 and A42:** linking the West Midlands to Derby and Nottingham
- **The 'Midlands Motorway Hub' (MMH):** the network surrounding the West Midlands metropolitan area (the M5, M6, M42).

For each of our strategic road corridors, we have gathered intelligence on traffic levels, travel patterns, freight needs and housing and jobs growth (both planned and possible), and developed concepts for infrastructure which may be required to support existing needs and future growth. Our evidence-led approach has focussed on maximising the performance of the existing SRN in the Midlands. We have also investigated what might need to be done in order for the infrastructure requirements at any specific location to be minimised. That is what all organisations and stakeholders with a role to play in influencing demand must do to minimise traffic growth and subsequent congestion in any particular area.

Investment in the SRN is planned for in five yearly cycles of funding. We are currently in Road Investment Period 2 (RIS2), which runs from 2020 to 2025; albeit delivery of some schemes in RIS2 will run into the next period before they are open for traffic. A programme of enhancements to the SRN in this period has been identified and is being delivered by National Highways. We fed into the planning for this current programme and many of our identified schemes have been included.

Our SRN priorities for the next 15 years

Our current planning and development work is focused on identifying the next tranche of priorities for investment, targeting the periods 2025-2030 (Road Investment Period 3, or RIS3) and 2030-2035 (Road Investment Period 4, or RIS4). We want to provide evidence to the Department for Transport which clearly identifies which locations our partnership would like to see included in their future RIS3 and RIS4 programmes for development and construction.

Through our work on these corridors, we have identified the region's most immediate priority locations for further investigation and development over the next five years. If we are successful and these locations achieve RIS 'programme entry' status, we would want to see delivery/construction begin in either RIS3 or RIS4.

It is important to note at this stage in the development process that we are largely scheme agnostic. We have identified the most important locations on our SRN that need to work better. At each of these locations we want to deliver improved outcomes - we are not wedded to any particular

infrastructure solution to deliver these outcomes. Given current constraints on funding and significant concerns around the impact of transport, particularly road use, on the environment, our work to further investigate these locations will include a focus on how we maximise the delivery of the outcomes we want whilst minimising the amount of new or enhanced infrastructure that is provided. Making best use of the existing assets and technology will need to play leading roles in how we get the improvements needed at each priority location.

Given uncertainties around future funding and how long-term travel demand may change, we have focussed on identifying improvements at priority locations on the SRN that represent 'no regrets' investment, i.e. investment that is needed whatever the future may hold. Locations that may be more sensitive to future changes in travel demand have been pushed back into our longer-term programme where they can be reviewed as part of future updates of our Strategic Transport Plan.

The technical work undertaken since the publication of our first strategy demonstrates a clear need for interventions on our SRN during the RIS3 and RIS4 periods. This investment will drive improved east-west regional connectivity and improved reliability, both of which have been identified from our evidence base as key regional connectivity needs.

Our short-term priorities are set within the context of the longer-term economic needs of each corridor. This ensures they are future-proofed to allow for passive provision for future needs such as alternative fuel charging or connected and / or autonomous vehicle infrastructure. By considering the long-term needs of a corridor, we can avoid potential risks with isolated investment where it can simply push a congestion or reliability issue to the next pinch point on a corridor. Our approach avoids this by packaging up the locations that are interdependent and promoting interventions that benefit the entire section of the road (where possible), rather than one specific individual location.

Given the constraints on funding, we have considered those locations where improvements have the potential to be delivered through other sources of funding (other than RIS), but we have been careful to ensure their alignment with our objectives and the outcomes that we want to achieve.

Meeting our regional connectivity needs:

- Improved East West connectivity
- Making our roads more reliable
- Fast and reliable connections to international gateways

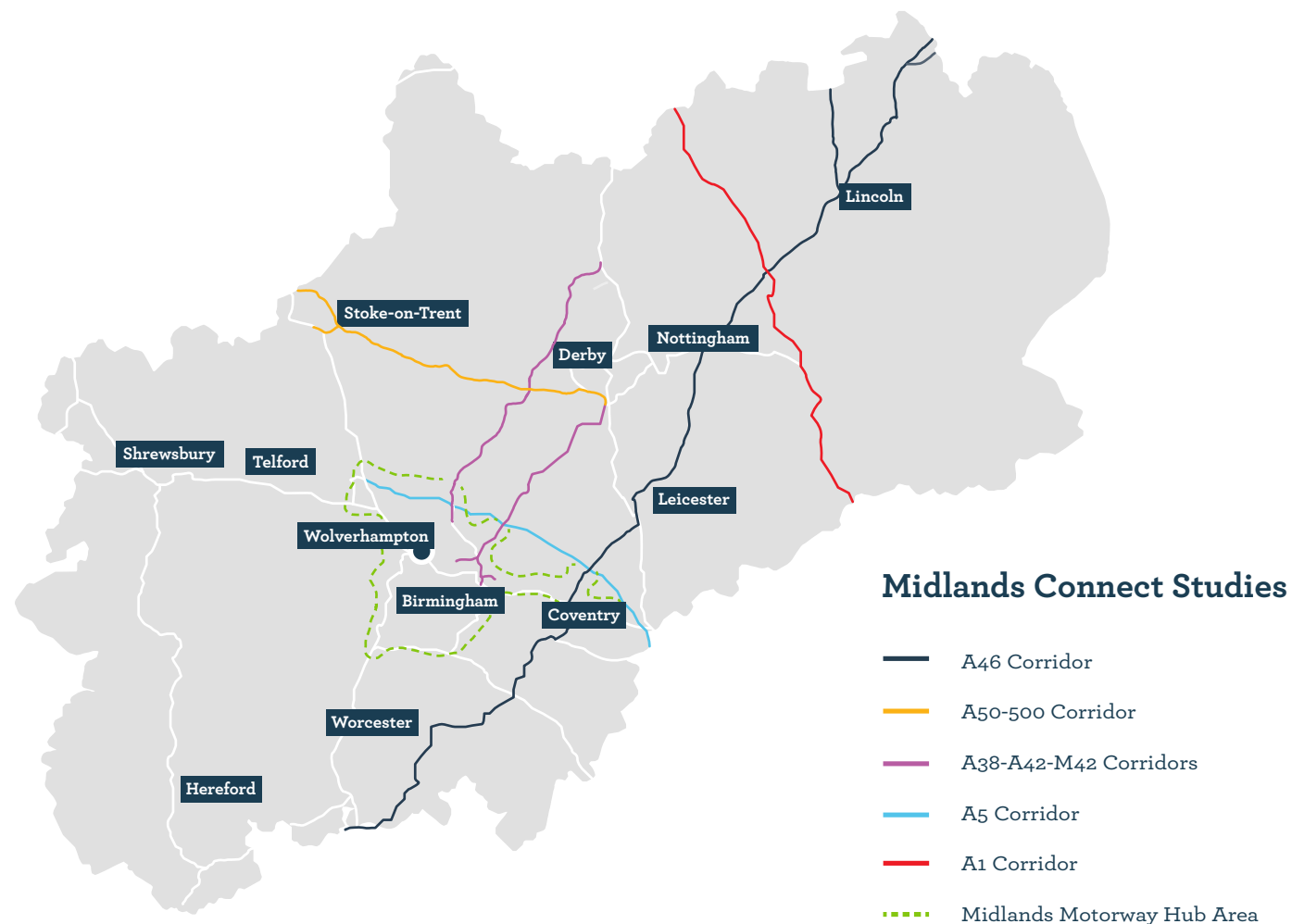


Figure 38: Our studied strategic road corridors

Partner Showcase: Leicestershire County Council

Improving the A46:

The A46 provides an essential link within Leicestershire, connecting businesses to customers and residents to employment. To encourage economic growth within the county this link needs to be upgraded.



We have set out our priorities into two main tranches, the first being our priorities for delivery during RIS3 from 2025-2030 (set out in Figure 39 and Table 3) and the second being a set of priorities for development during RIS3 and potential delivery in RIS4 (2030-35) (set out in Figure 40 and Table 4). Included within our RIS3 priorities are three schemes already identified as 'RIS3 pipeline' schemes by DfT which have our backing as a partnership.

Investigations at most of these locations are at an early stage in development. This means that further consideration of options, appraisal and alternative future scenarios (in terms of travel demand and car use) will be required as the potential schemes progress through the business case development process. Consideration of biodiversity net gain and carbon net-zero will also form a core part of the scheme development process as each one moves forward to ensure investment decisions consider the full range of economic, social and environmental impacts.

We are committed to working with National Highways when considering the specific needs of each priority location, to continue to strengthen our role in ensuring the right solutions are delivered to bring the improved regional connectivity and reliability that the region needs.

As proposals for the two freeport sites in the Midlands – at Immingham and in the area of East Midlands Airport – progress, we will also work with partners to understand the opportunities and requirements for any associated road infrastructure improvements and champion these with wider industry stakeholders.

Commitment: We will develop the evidence base and strategic case for investment at the locations on our Strategic Road Network that we have identified as most urgently requiring attention. This will be done as part of our long-term strategy for improving east-west connectivity and reliability and supporting the nationally important freight movements through and in the region. We will aim for development work to commence on as many of these as are affordable as part of the National Highways RIS3 programme (2025-2030).

Commitment: We will continue to investigate the next potential tranche of Strategic Road Network improvement priorities, again as part of an overall strategy for improved regional connectivity. However, this will be done whilst monitoring the region's trajectory towards transport decarbonisation and how future travel demand changes.



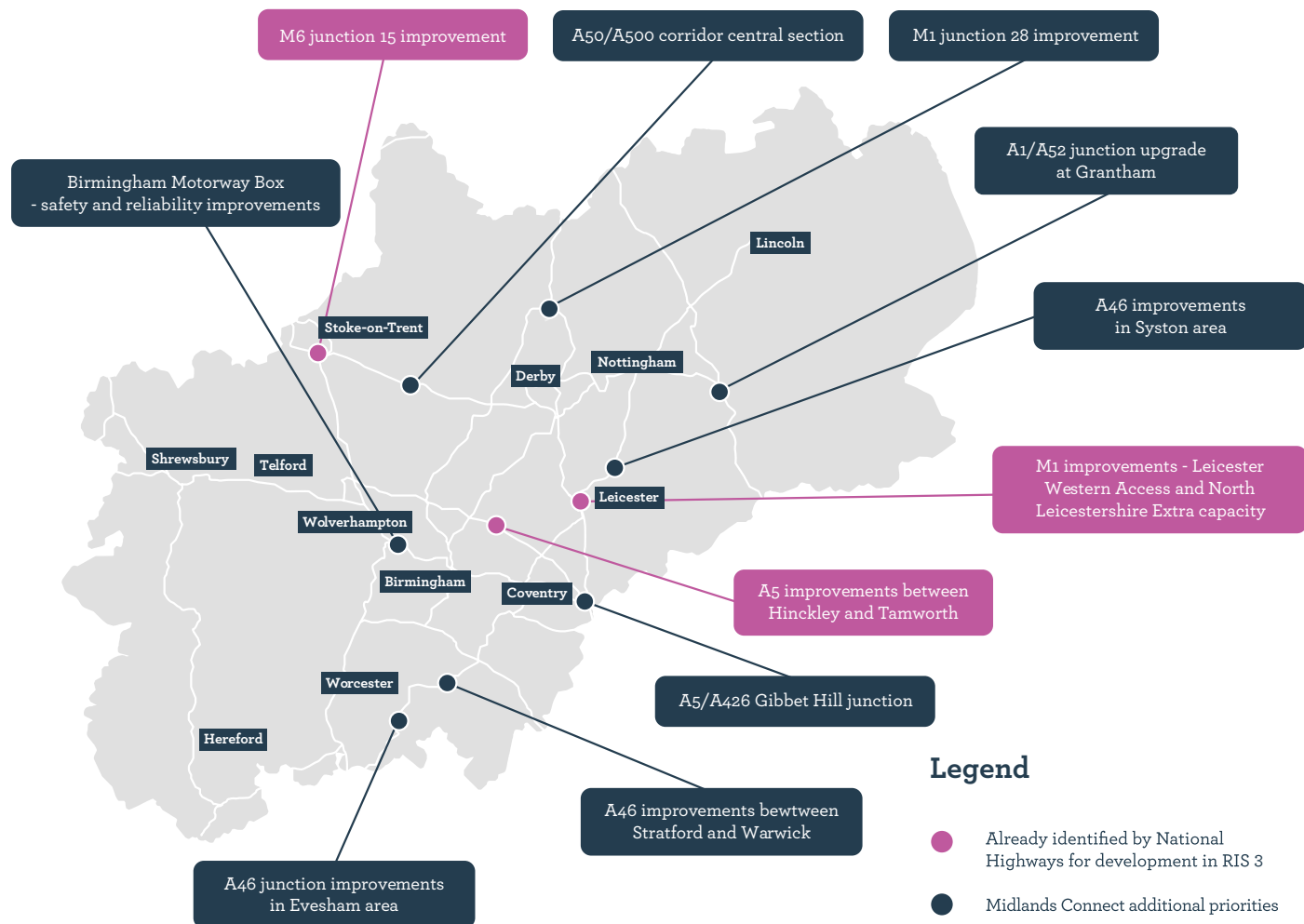


Figure 39: Midlands Connect priority locations for RIS3

Location	Description
M6 J15 improvement	Improvements to M6 J15 to improve current congestion, support the smooth flow of traffic and improve safety.
A5 improvements between Hinckley and Tamworth	Reducing congestion and improving safety on the A5 between the M42 and M69 through a mixture of online and offline widening, with associated junction improvements.
M1 improvements - Leicester West and North Leicestershire extra capacity	Leicester Western Access: investigate improvements between J21a-J21 on the M1 to alleviate congestion and associated safety issues to support economic growth. North Leicestershire extra capacity: provision of smart motorway all lane running between J21a and J23a to help relieve congestion issues along the route.
Birmingham Motorway Box - safety and reliability improvements	There are ongoing congestion, safety and reliability issues on the Birmingham Motorway Box with these likely to worsen with population growth over time. We will support National Highways with the continued development of targeted improvements to safety and reliability in this area.
M1 J28 improvement	Improvements to M1 J28 to improve current congestion, support the smooth flow of traffic and improve safety.
A1/A52 junction upgrade at Grantham	Improvements at A1/A52 to junction at Grantham to support local growth and to maintain the strategic performance of the A1 and A52. Safety improvements on both the A1 and A52 corridors could be included as part of a scheme.
A46 improvements in Syston area	There is a need for intervention at the Hobby Horse interchange in the Syston area. This will help address existing congestion issues and support growth to the north of Leicester. The delivery of a package of improvements (including at the Hobby Horse junction) along with other complementary interventions required on the A46 to the north of Leicester) will maximise the potential benefits.
A46 improvements between Stratford and Warwick	There are congestion issues on the A46 between Stratford and Warwick mainly at the Longbridge A46/B4463 junction, as well as at the Bishopton (A464/A3400), Wildmoor (A46/A422) and Marraway (A46/A439) junctions. To ensure a holistic solution, the improvements should be developed and assessed as a single package with a coordinated delivery programme (similar to the A46 Coventry Eastern junctions at Binley and Walsgrave).
A46 junction improvements in the Evesham area	There are congestion problems on the A46 around Evesham, which is also acting as a hindrance to the planned growth in the area. Moreover, with potential improvements in the Ashchurch area, the situation at Evesham may worsen. There are options available for small-scale junction improvements which could provide some short-term benefits as part of a longer-term strategy.
A5 / A46 Gibbet Hill junction	Improvements at the A5/A426 Gibbet Hill junction to support local growth as well as to maintain the strategic performance of the A5 and A426. This junction is also an important SRN/MRN interchange and a scheme that caters for the longer-term needs of both the A5 and A426 corridors would be preferable in this location.
A50/A500 corridor central section improvements	This section of corridor is critical for our freight and manufacturing sectors. A holistic solution is needed to avoid pushing the problem to the next junction. A package of improvements at the Uttoxeter, Sudbury and Blythe Bridge junctions, plus any necessary mitigations at the Toyota junction, will enhance the strategic connectivity of the A50/A500 corridor and resolve local congestion issues at the Uttoxeter junction.

Table 3: Midlands Connect priority locations for RIS3

Location	Description
SRN capacity improvements to the south of Stoke	The A500 to the south of Stoke currently forms a dual purpose - it is a local access route to Stoke as well as the strategic link through to the A50 corridor. The area already suffers from congestion, safety issues, and impacts on the local communities. It will be important to investigate a full range of options for the Stoke area (including multi-modal solutions) to identify what further investment is needed to support the long-term growth aspiration for the North Midlands manufacturing corridor and its role as a national freight route.
Capacity enhancement between M6 J15 and J16	The stretch between junctions 15 and 16 on the M6 is the missing 'gap' in smart motorways provision on this critical part of the M6. The scheme is dependent on the M6 junction 15 improvements in our RIS3 priorities to allow a holistic solution to be developed for the M6.
M1 J25 improvements	The amount of planned development coming from the East Midlands Freeport and Development Corporation, and the proposal in the Integrated Rail Plan for a new rail station at Toton, will put a significant amount of pressure on this junction. The combined effects of all proposals will need to be understood before a scheme is settled on.
Eastern section improvements on A50 / A500	Improvements will focus on the M1J24 and the A50 to the south of Derby. They will address congestion and reliability issues and support growth from the East Midlands Development Corporation proposals. They will also recognise the importance of East Midlands Airport, the Derby/Nottingham economic hub and East Midlands Freeport proposals.
Improvements at M42 J9 and J10	The M42 between junction 9 and 10 forms a critical interface between the A5, M6 toll and this key route to/from the North East of the Midlands and the UK. It already suffers significant reliability issues and our work identifies the need to develop a longer-term solution for this section. These improvements should align with the A5 and A42/M42 corridor requirements as well as MMH capacity requirements.
Stivichall and Ansty interchange improvement to south and east of Coventry	The Stivichall and Ansty junctions are the two remaining 'hot spots' on the A6 with their key interfaces with the A45 and M6 respectively. Investment in these junctions will build on the previous investment and wider A6 corridor to maximise the benefits from the existing Strategic Road Network. These interventions would improve strategic connectivity to a proposed gigafactory at the former Coventry Airport. The scheme also has the potential to attract developer contributions.
Carholme roundabout and A46 junctions to the north of Lincoln	The section of route as it travels around the north of Lincoln suffers from congestion and reliability issues as the A46 forms the dual function of a local road and strategic route. Long term investment in the Carholme roundabout in conjunction with the other junctions on this stretch will be a relatively low-cost investment to get the best use from the existing road infrastructure.
A1 improvements from Peterborough to Stamford	Our corridor work for the A1 has identified it as a strategically important freight route but that it also suffers from significant reliability and safety issues, including long clear up times for incidents. Building on our RIS3 priorities, this section is prioritised as the next phase for development and delivery in the context of the whole corridor strategy to support continued growth in freight for UK logistics and access to international markets.
Rationalisation of junctions on A38 and improvement at Branston junction	This scheme will need to develop solutions to try and optimise the strategic and local routing options to get the best use of the Strategic Road Network at this location. Proposals include: Improved traffic flow along the A38 corridor using split cycle offset technique (SCOOT) signal technology at junctions between Burton and Lichfield; and junction improvements at Branston interchange to the south of Burton between the A38 and A5121.

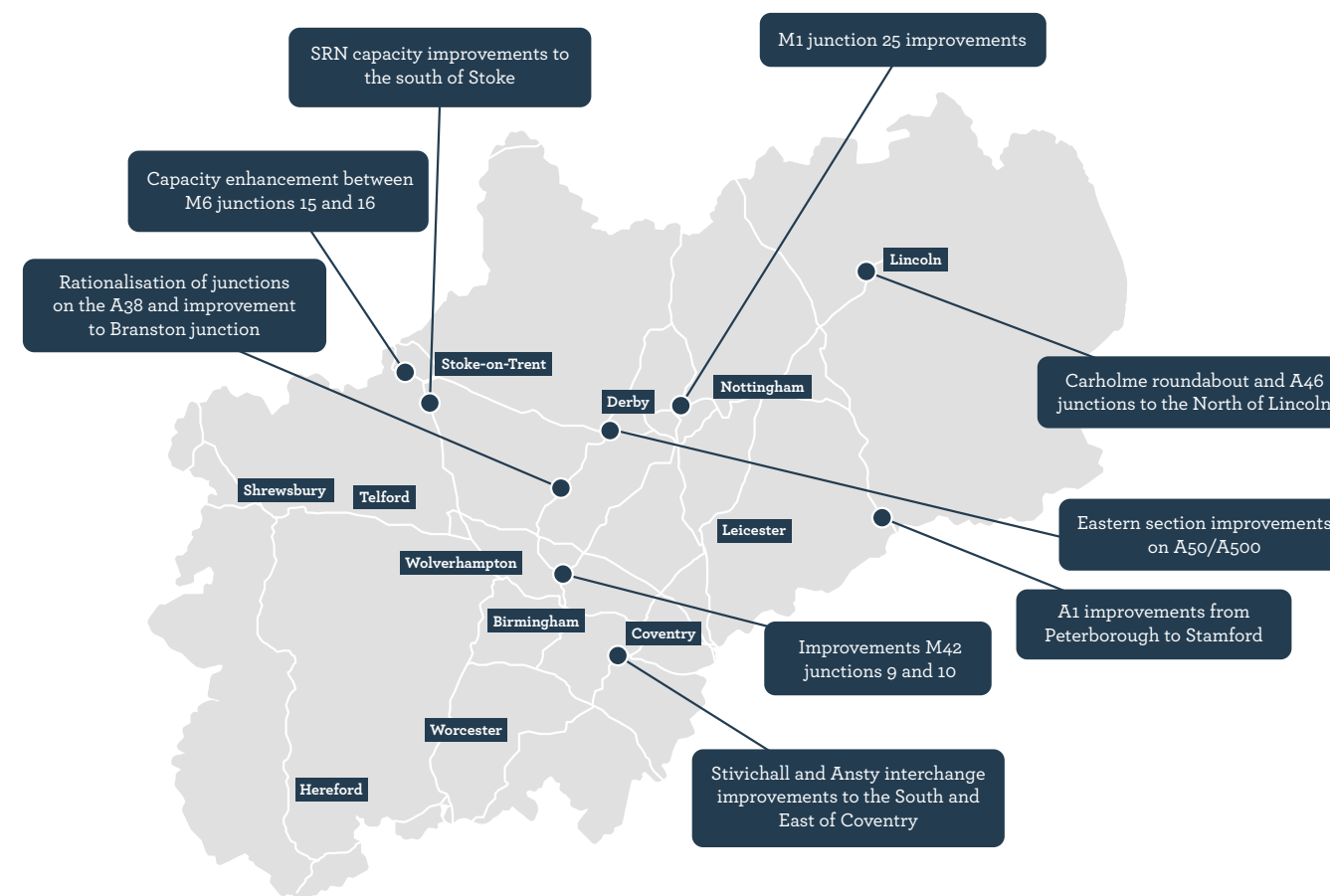


Figure 40: Midlands Connect priority locations for development in RIS3, with delivery to commence in RIS4

Table 4: Midlands Connect priority locations for development in RIS3, with delivery to commence in RIS4

Looking beyond the RIS3 and RIS4 periods, we cannot be as certain as to what the future may hold. There are major potential disruptors on the horizon which may mean that the exact need for road improvements cannot be known at this stage. This includes the long-term effects of Brexit, new post-pandemic working practices and how new technologies might change how we travel or whether we need to travel at all.

As we have stated already in this plan, we will be agile and continuously review how travel demand changes in the future. We will review our priorities, including those identified in this plan, and make the right decisions about how our programmes may need to change and whether new thinking and ideas are needed to develop alternative solutions.



Taking forward additional SRN priorities in the Midlands

The locations presented above represent, based on the work we have undertaken over the last five years, the parts of our SRN that most need improving to enable better strategic connectivity between our key economic hubs and to the wider UK geography. This does not mean that our partners cannot identify and communicate with National Highways and the DfT directly on any locations not included on our list of priorities; we will fully support such engagement to ensure the SRN delivers what each local area requires.

The locations presented here are the ones we believe should target National Highways RIS funding. However, other sources of funding are available to take forward investment in our road infrastructure (for example, Large Local Majors (LLM) Fund, Housing Infrastructure Fund, Levelling up Fund). We have identified some other locations on our strategic road corridors where these other sources of funding may be more applicable. Examples include the M5 Junction 9 and A46 improvements near Ashchurch (which is currently prioritised for Large Local Major Scheme funding) and the A1 safety and reliability improvements (utilising National Highways designated funds for safety improvements). We are fully supportive of these schemes progressing via the use of such alternative funding streams.

For some locations, such as Evesham, Branston, and Stratford on the A46, whilst RIS funding may achieve some short-term benefit through small junction upgrades, a more strategic and long-term solution may achieve stronger transport, economic, social and environmental outcomes. We will continue to explore this type of solution as part of our work on the main corridors across the Midlands, including how we can bring together funding from different sources to realise these outcomes.



Investing in our MRN

In December 2017, the government launched a consultation setting out proposals for the creation of a Major Road Network (MRN). In the following budget, the government announced a National Roads Fund of £28.8 billion for the period 2020-2025, £3.5 billion of which was expected to be spent on local roads.

We were asked to work with local highway authority partners in the region to prioritise local road schemes for development and delivery using this fund during and up to 2025.

The MRN forms a middle tier of the country's busiest and most economically important local authority 'A' roads, sitting between the national SRN and the rest of the local road network. Together, the SRN and MRN form the key road network that connects our region together and provides end-to-end links for people and businesses.


In setting out their proposals, government identified five objectives that investment in the MRN should deliver:

Reducing congestion: alleviating local and regional congestion by reducing traffic jams and bottlenecks. Investments should upgrade and enhance roads

on the MRN, making it better able to cope with demand by adding capacity to reduce congestion and crowding. This will make journeys more comfortable and reliable for users and make new trips possible that were previously impractical due to frequent or unpredictable delays, opening up wider access to opportunities - a key part of the levelling up agenda.

Supporting economic growth and rebalancing: investments on the MRN should improve the capacity, reliability, safety and connectivity of the network, better connecting people and businesses to markets and international gateways, boosting economic productivity. This makes places more attractive to businesses and people, encouraging further investment.

Meeting our regional connectivity needs:

 Making our roads more reliable

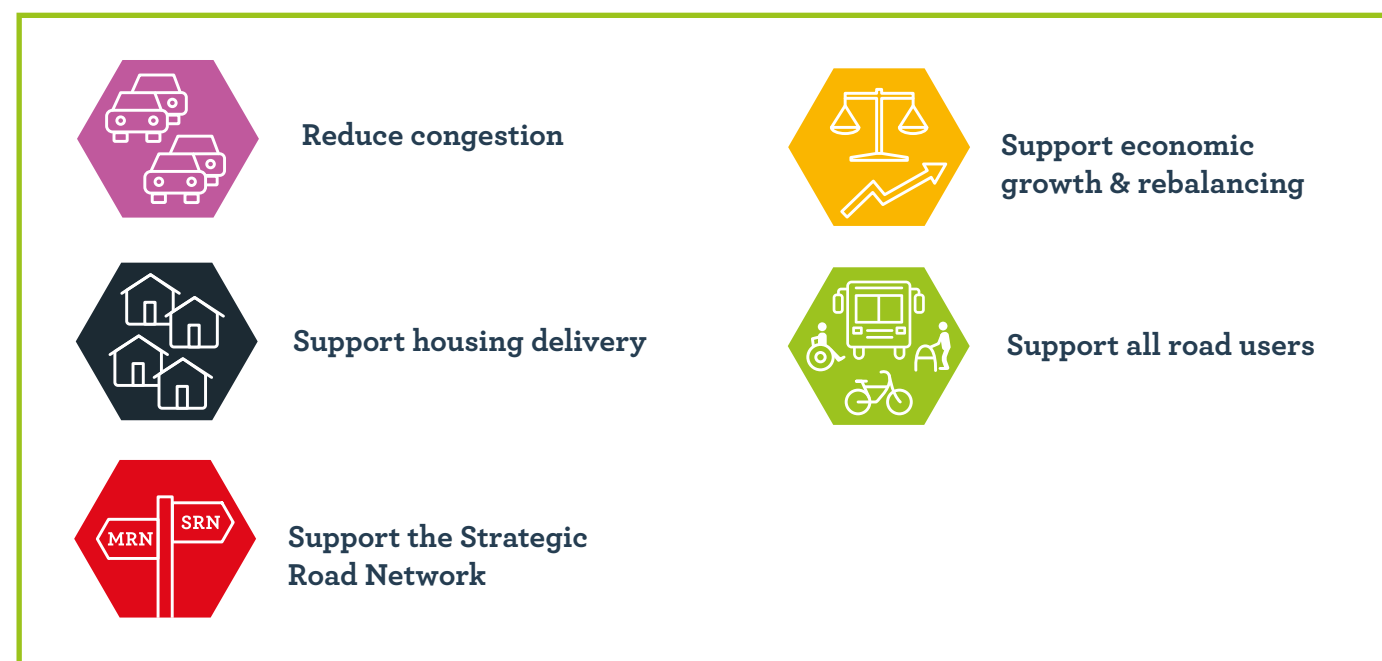


Figure 41: Major Road Network objectives (DfT, 2018)

Supporting housing delivery: transport infrastructure is key to unlocking development and delivering places people want to live in. Road schemes can create new links between communities and workplaces to deepen local labour markets, connect housing developments to the network, provide new routes on city and commuter networks or contribute to creating places that promote wellbeing through the management of congestion or provision for public transport. These roads need not be high-capacity and/or high-speed. Wherever possible, new housing should be delivered in such a way as to embed sustainable travel behaviours, such as walking, cycling and use of public transport, but all of these need roads.

Supporting all road users: MRN investments should consider the needs of all road users, including cyclists, pedestrians, public transport users and those with disabilities.

Supporting the SRN: investment in the MRN should complement and support the existing SRN. Creating a more resilient Major Road Network is vital. Users should be able to pass seamlessly between the MRN and the SRN.

Following their consultation, we worked with government to designate the MRN in the region as shown in Figure 42 below.

Separate to the MRN, the government also has a programme of Large Local Major Schemes (LLM) funding to support the delivery of schemes that would not be affordable by local authorities through business-as-usual funding. We were also asked to prioritise the local schemes that could be considered for this funding for the period up to 2025.

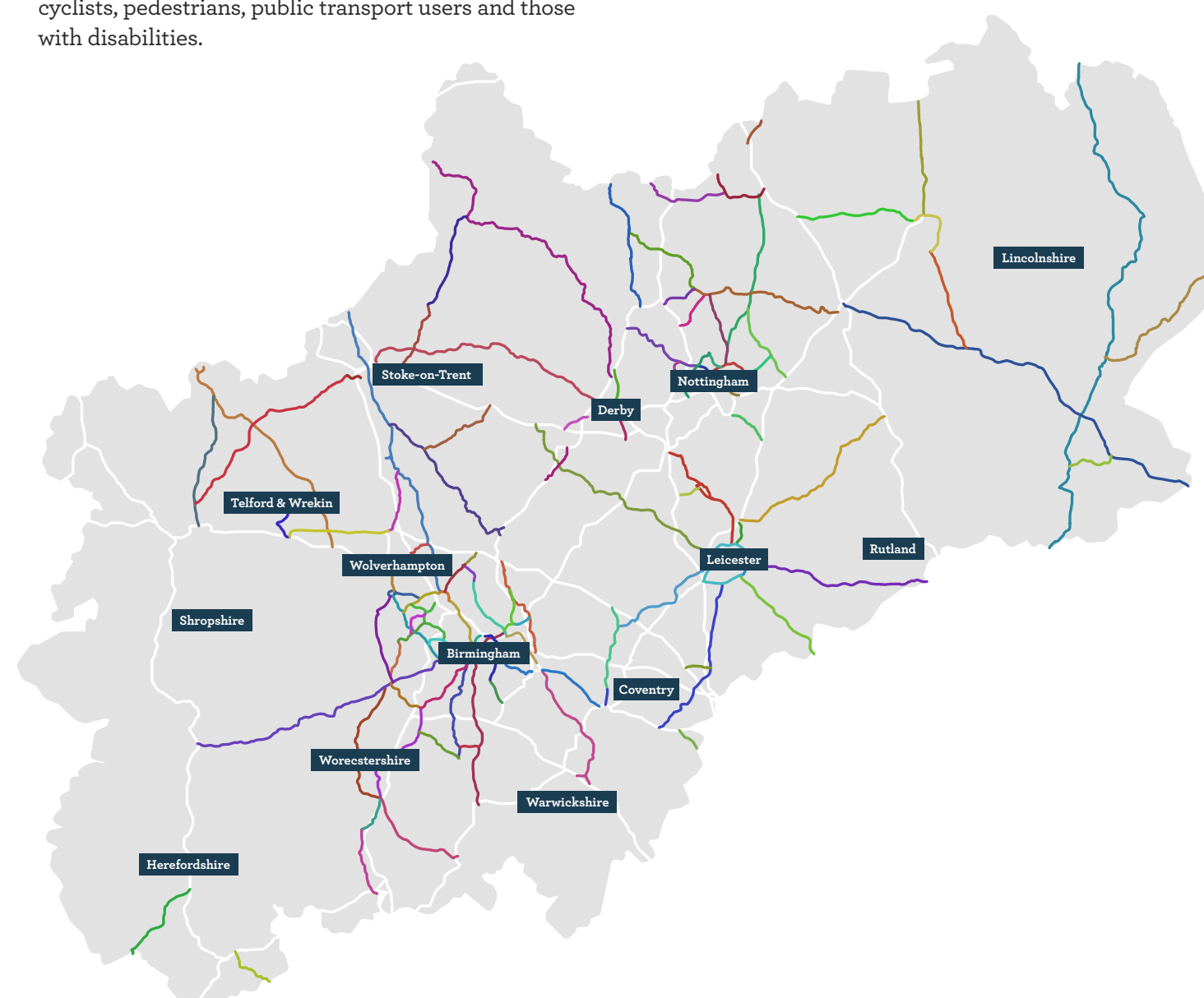


Figure 42: The Midlands Major Road Network (broken down into specific routes)

MRN/LLM period 1

In 2019 we put forward an initial programme of schemes to the DfT for MRN funding. These schemes were selected based on the strength of their strategic case, suitability to fulfil the government-defined MRN objectives and their ability to be delivered between 2020 and 2025. We have defined this period as MRN/LLM period 1. Our current period 1 programme is presented in Figure 43.

Four schemes from our MRN/LLM period 1 programme have already received development funding from DfT. The rest are at the advanced stage of business case development to satisfy DfT's requirements for funding.

Commitment: We will continue to work with partners to develop business cases for the region's schemes that have been put forward to receive funding from the first round of the government's **Major Road Network and Large Local Majors fund**.

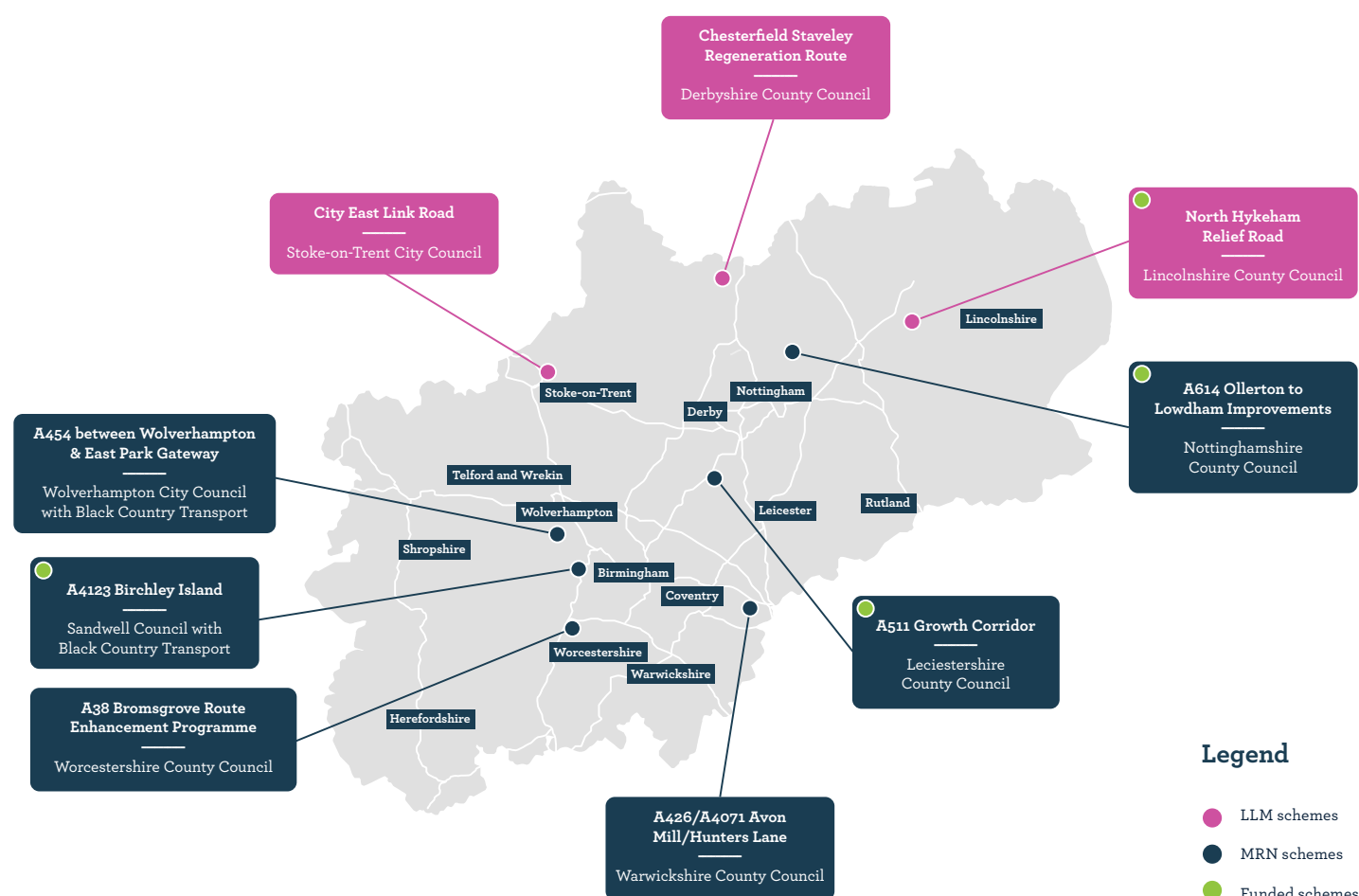


Figure 43: MRN and LLM period 1 priorities in the Midlands

Preparing for MRN/LLM period 2

As we look beyond the MRN/LLM period 1 (2020-25), we are starting to think about how we can develop an optimised programme of schemes for potential development and funding between 2025 and 2030 (MRN/LLM period 2). Although this funding period is not yet confirmed by DfT.

All Sub-national Transport Bodies have been asking DfT to make some development funding available to support the MRN initiative. However, currently there is only funding available to move a scheme from Strategic Outline Business Case (SOBC) to Outline Business Case (OBC); meaning that local authorities must wholly fund the initial stages of scheme identification and development.

During the process of developing the MRN period 1 programme, it became clear that there had been a significant lack of investment in scheme development across the region in the past five years.

Our intention has been to improve the future planning and pipeline development of potential MRN and LLM interventions. We have set aside some of our core budget each year to assist our local highway authorities to identify how future investment in the local road network could help deliver benefits to a wide range of road users and stimulate new jobs and housing. Our funding is prioritised to support schemes that deliver against the government's MRN objectives and the objectives in our Strategic Transport Plan.

The intention is that the Midlands will have a pool of viable schemes that will realise significant benefits for the whole region when the government launches the second round of MRN funding (currently assumed to be 2025-2030). We will continue to work in collaboration with partners to identify and develop this pipeline of viable options.

Commitment: We will continue to allocate funding from our core budget spend to assist local highway authorities and the region to identify and prioritise further **Major Road Network and Large Local Major schemes** for any future second round of government funding.

The MRN promoter's forum

We have established a promoter's forum, bringing together all authorities developing MRN schemes. This includes the promoters of schemes currently being considered by DfT and those in the very early stages of development towards potential bids for MRN/LLM period 2. The forum is helping promoters learn from each other and to improve the quality of local scheme development across the Midlands.

The MRN and technology solutions

Alongside our Preparation Fund work, we are also working with partners to identify opportunities for developing technology-led interventions on the MRN. By enabling a smoother flow of traffic, technology-based interventions could improve the reliability, efficiency and safety of our major road network, whilst also reducing carbon emissions and improving air quality. We therefore believe that there are opportunities to deliver the stated objectives for the MRN through some 'softer' interventions built around the delivery of technology solutions and not necessarily always through the implementation of large infrastructure projects. We also believe that it is prudent to prepare the Midlands MRN for the increasing connectivity and autonomy of vehicles and the growth in alternative fuels usage for both cars and HGVs that is expected to occur.



The types of technology that can help deliver our MRN objectives are: the provision of improved communications coverage (i.e. 5G/4G/Internet of Things), preparation and support for connected and autonomous vehicles, the provision of variable message signing to provide driver information and a more optimal use of existing MRN capacity, heavy goods vehicles (HGV) Green Light Optimal Speed Advice (suggesting speeds to vehicles), improved data collection and exchange, with digitisation enabling better standards and asset management records, and road works and diversion route data collation and dissemination.

We have been working to identify where on the MRN these technologies could provide benefit to network users and help achieve the objectives we have for the MRN. We are currently undertaking more detailed feasibility studies to ascertain how to translate the needs and possible technology-led solutions at specific locations to the whole of the Major Road Network.

Our important cross-boundary road connections

Meeting our regional connectivity needs:



Making our roads more reliable



Connectivity to international gateways

Due to the size of the Midlands, there are several local authority partners along the Midlands boundary that find themselves interacting intra-regionally and inter-regionally. It is crucial to ensure that such partners are connected to the economies and people that allow them to thrive.

Our existing road corridor programme already seeks to improve cross-boundary road linkages, including on the A1, A5, A50/A500 and A46. These are key routes when considering cross-boundary connectivity: the A5 and A46 connect the Midlands to North and South Wales respectively; the A1 is a key trunk road connecting the South to Scotland via the Midlands.

Looking beyond our existing strategic road corridor work, we have examined where the Midlands and other parts of the country have a high economic affinity and where it may therefore be beneficial to explore future cross-boundary transport improvement

opportunities. The results from this work have in most cases validated the existing road corridors and schemes we have been working on with other neighbouring Sub-national Transport Bodies, such as the A1, A46, A5 and A50/A500.

However, through this analysis we have also been able to identify some potential new cross-boundary corridors of interest where we may wish to investigate opportunities and constraints in the future:

- The A15 route from Peterborough to Hull
- The A49 between The Marches and Cardiff
- The A49 from Cardiff to Manchester via the Marches
- The A14 from Felixstowe to the M1.

We will continue to investigate these corridors to understand their opportunities and constraints and work with neighbouring Sub-national Transport Bodies and the Welsh government to develop plans for how they may need to be improved in the future.

Commitment: We will work with other Sub-national Transport Bodies to build on the improved cross-boundary road linkages provided by our existing strategic road corridor programme. Further investigation work will initially focus on the A15 from Peterborough to Hull, the A49 between the Marches and Cardiff, the A49 connection from the Marches to Manchester and the A14 from Felixstowe to the M1.

CASE STUDY: M6 DIGITAL SIGNS DEMONSTRATOR

We previously received £3 million of capital funds from the DfT for delivery of priority interventions identified by our Midlands Motorway Hub study. We chose to allocate £1 million of this to provide new variable message signs on the M6. In agreement with the DfT, this project has been re-scoped to provide a digital solution to achieve the same objectives of making the best use of existing networks to improve travel conditions. This would also support broader Midlands Connect aspirations to optimise existing infrastructure assets, such as the M6 Toll road, through innovative use of technology, thereby minimising the need for further investment in traditional infrastructure. We identified an opportunity to promote behaviour change more effectively by giving drivers better information about conditions on the M6 and M42 so they can make an informed route choice when taking strategic trips through the West Midlands. Working with our partners at Transport for West Midlands (TfWM), we have identified an innovative project to provide targeted in-car information on the current performance of the network for drivers on the M6 and M42, using digital channels. Our data collection suggests that there is still a market for some people to shift from using the M6 to the M6 Toll if the benefit of doing so is better understood. Enhanced information therefore could reduce the volume of strategic traffic routing through urban areas (via the M6) with associated air quality, noise and safety impacts, benefitting all road users as well as residents and businesses. The project builds on TfWM's ongoing 'Midlands Future Mobility Testbed' project. We will continue to work with TfWM and other partners including National Highways, DfT, the Department for Business, Energy & Industrial Strategy, and Midland Expressway Limited to develop and deliver the project. We will also explore opportunities to roll out the technology across the Midlands and nationwide to support enhanced network knowledge and a more efficient network operation on a much larger scale.



Decarbonising fuels: accelerating the take-up of electric vehicles

We are working with our partners to understand how we can accelerate the decarbonisation of our roads. The government's 'Transitioning to Zero Emission Cars and Vans 2035 Delivery Plan' states: "Zero emission vehicles are the right solution to tackle greenhouse gas emissions and poor air quality from cars and vans."⁸²

In recognition of the need to accelerate the decarbonisation of transport, government announced in 2020 that the sale of new petrol and diesel cars and vans would be banned from 2030.⁸³ The government's Transport Decarbonisation Plan (TDP) goes a step further, stating that from 2035 all new cars and vans must be zero emission at the tailpipe. The TDP states: "Removing tailpipe emissions from cars and vans is fundamental to decarbonising transport - they were responsible for almost a fifth (19%) of the UK's total domestic greenhouse gas emissions in 2019."⁸⁴

Polling of residents in the Midlands indicates there is growing public acceptance of the role electric vehicles can play in reducing emissions and clear indication of the barriers that need to be overcome, including longer battery ranges, more charging points and price equity (see findings in the boxes to the right).⁸⁵

Our research suggests that at present an estimated 93% of electric vehicle (EV) owners have access to off-street parking.⁸⁶ However, 32% of households across the Midlands Connect region are reliant on on-street parking. This is particularly prevalent in denser urban areas. For example, approximately 50% of households in Leicester are reliant on on-street parking, as are over 40% of households in Nottingham, Birmingham and Stoke-on-Trent.⁸⁷ Even accounting for lower car ownership among households in central city areas, those with access to off-street parking are over three times more likely to switch to an EV than those without.

Meeting our regional connectivity needs:



Decarbonising transport



Solutions to rural transport challenges

75% think phasing out petrol / diesel vehicles is essential to tackle climate change

77% would consider buying an EV for next new car / van

Longer battery range, more fast public charging points at convenient locations and price equity between EV and diesel / petrol cars are the 3 things most likely to make someone buy an EV in the future

The importance of regional collaboration

We have generated a pan-regional evidence base to better understand the public charging infrastructure required for EVs in our region and how we can overcome some of the existing barriers to EV take-up. We want to work with local authorities and operators to:

- Support an increase in the uptake of EVs, particularly by aiming to encourage the purchase of fully electric vehicles as opposed to plug-in hybrids
- Ensure the appropriate provision of electric vehicle charge points (EVCPs) across the Midlands Connect region and understand opportunities for combining EV infrastructure provision with other infrastructure and technology needs
- Enable and support a positive customer experience of EVCP usage across the region, including providing common payment mechanisms and ensuring that the infrastructure is fault-free and available
- Help deliver a co-ordinated regional approach that enables the public and private sector to work together on policy and improve value for money and efficiency in delivery.

We forecast there could be over 1.7 million electric vehicles in the Midlands Connect region by 2030, equating to over 28% of all registered vehicles being electric. This is from a base of just under 45,000 EVs in the region in 2020. Although, if interim decarbonisation targets are to be met then even this forecast would need to be exceeded.

To support the number of EVs on the road in such a scenario, we estimate the Midlands needs over 39,000 publicly accessible EVCPs in place by 2030. Meeting this need equates to installing an average of 10.8 new EV charging points every day, 75.8 charging points every week, or 3,941 charging points each year, from 2021-2030. This will mean installing six times as many charge points as we do now. There's a clear need to accelerate the rate at which EV charging infrastructure is delivered across the region.

Our data also suggests that EVs may have an increasingly important role to play in rural areas, where a larger proportion of emissions come from longer trip distances that are over 10 miles in length. These journeys are less likely to be easily transferable to active travel modes, such as walking and cycling, and so a higher degree of motorised travel could remain.

It is anticipated that the government will release an EV Infrastructure Strategy in 2022. The work we have done to understand the current position in the Midlands, where we need to get to and the challenges we face ensure we are well placed to further develop the research we have done and our plans to accelerate EV uptake.

Our initial focus will be on:

- Establishing a regional 'EV Forum' to bring together the public and private sectors to share data, support knowledge sharing and discuss the development of a region wide EV Charging Infrastructure Plan. This will seek to enable greater co-ordination and cross-boundary working and aid monitoring and evaluation of EV charging infrastructure delivery. In particular, this group will focus on breaking down the barriers to an accelerated EV infrastructure roll-out
- Engaging with Distribution Network Operators (DNOs) on how we can overcome limits to local grid capacity

- Completing an EV Charging Infrastructure Planning Tool to help our local authority partners identify the best locations to install new EV charging points
- Further developing this line of research and working with DfT to position the Midlands as a test bed for the accelerated delivery of charging points, whilst also encouraging EV uptake
- Working with our partners in rural areas of the region to discuss the role that EV charging infrastructure can play in reducing carbon emissions from transport and how this could be enabled.

Commitments: During 2022 we will work with partners to develop a regional **Electric Vehicle Charging Infrastructure Plan**, publishing this in spring 2023.

We will develop and implement an **EV Charging Infrastructure Planning Tool** by the end of 2022.



82. Transitioning to zero emission cars and vans: 2035 delivery plan, HM Government, 2021 83. Government takes historic step towards net zero with end of sale of new petrol and diesel cars by 2030, Department for Transport, 18 November 2020 84. Decarbonising Transport: A Better, Greener Britain, Department for Transport, 2021 85. Midlands Connect poll of Midlands residents (undertaken by Censuswide), September 2021

86. Plugging the gap: An assessment of future demand for Britain's electric vehicle public charging network, Climate Change Committee, 2018 87. Supercharging the Midlands, Midlands Connect, 2021

Alternative fuels for freight and logistics

Our analysis suggests that HGVs account for 21% of surface transport emissions in the Midlands, compared to 17% for the UK⁸⁸. Helping to advance the shift to alternative fuels for freight and logistics through the development and provision of energy hub networks, and supporting modal shift of freight to rail, is therefore an important element of our programme.

Meeting our regional connectivity needs:

 Decarbonising transport

We are ambitious in this area and see efforts to decarbonise road freight as vital if we are to reach net zero. We would like:

- The Midlands freight and logistics businesses to lead the adoption of alternative fuels

- The Midlands road network to be equipped with an efficient and effective network of charging and refuelling infrastructure that aligns with the network needs of other parts of the UK
- The Midlands to be a knowledge hub for alternative fuels research and business information
- The Midlands to be a test bed for innovation projects.

We have investigated the opportunities and constraints surrounding the wider adoption of alternatively fuelled freight vehicles. Our work has highlighted several challenges relating to their adoption, adding to the scale of the decarbonisation challenge for the Midlands. For fleet operators the key barriers are a lack of recharging and refuelling infrastructure, the upfront cost of vehicle acquisition and lack of vehicle availability. For vehicle and infrastructure suppliers the key barriers are upfront vehicle cost, uncertainty over residual values and a lack of recharging and refuelling infrastructure.

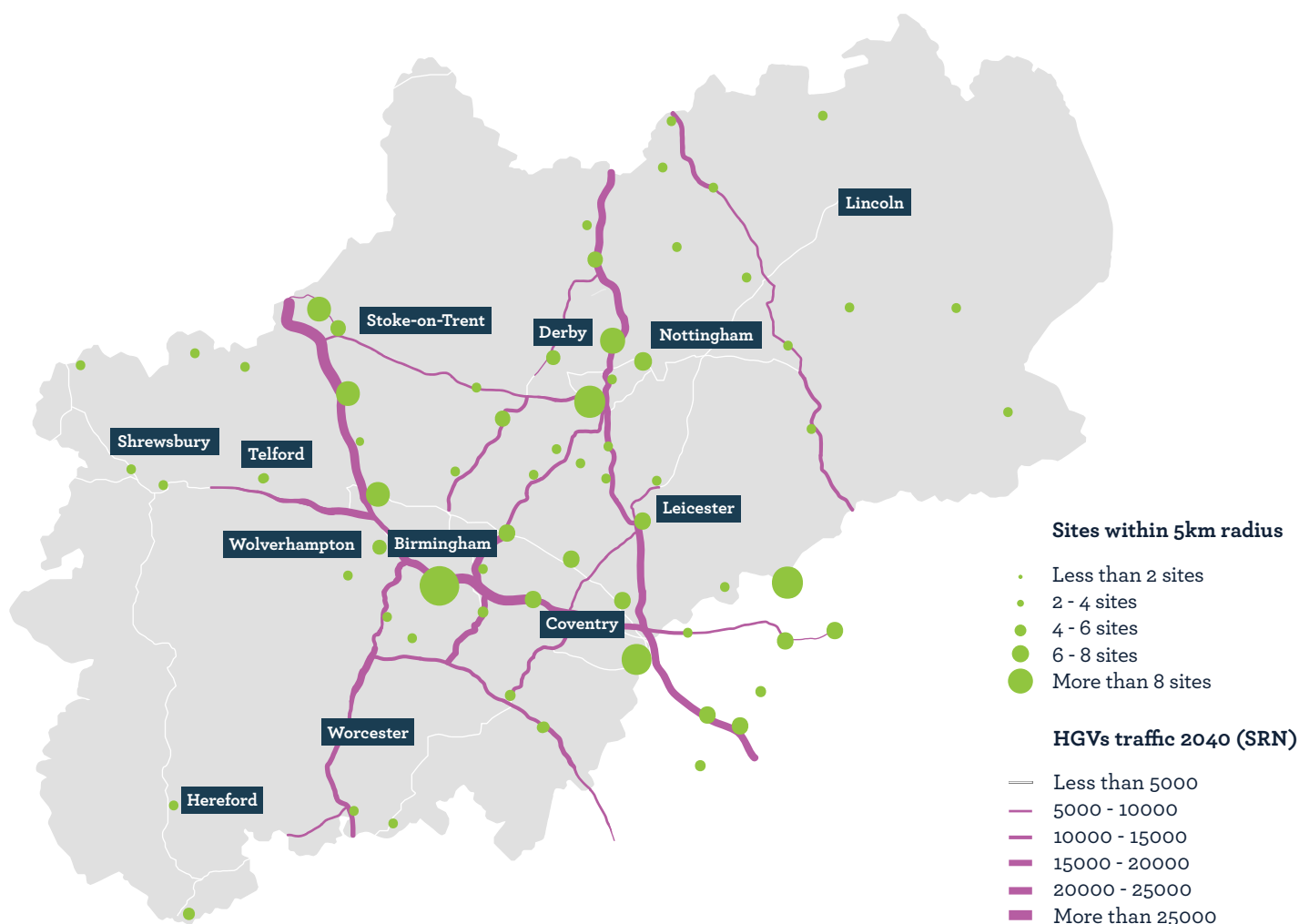


Figure 44: Potential sites for refuelling and recharging infrastructure to support the Midlands freight and logistics sector

88. Midlands Connect Transport Carbon Baseline Tool, Midlands Connect, 2019.

THE MIDLANDS AND HYDROGEN

The Midlands has been at the heart of many of the technology advances around hydrogen and continues to be at the cutting edge of emerging developments. These leaps forward in technology are demonstrated in all aspects of hydrogen research and development, as demonstrated by fuel cell technology research that originated at Loughborough University in 1988.

This momentum has continued through ongoing generation and storage research by the Energy Research Accelerator and universities such as Birmingham, Keele, Loughborough, Nottingham and Warwick. In addition to the ground-breaking work from these academic institutions, the Midlands is home to two of the biggest fuel cell companies in Intelligent Energy and Adelan. Tyseley Energy Park offers hydrogen refuelling facilities at present in the Midlands for early adopters and Horiba Mira is soon to follow with its very own hydrogen facility. Other Midlands-based businesses such as JCB are also exploring the opportunities hydrogen presents in our continued efforts to make transport greener and cleaner.

The fuel of choice for the freight and logistics sector is still very much under consideration. We recognise the need to ensure that future infrastructure reflects the potential variety in fuels used within the sector. While there have been substantial developments with fuels like hydrogen, supported by government and the ‘green industrial revolution’, the technology is still being developed and is not ready for full-scale roll-out. Due to the shortcomings of electric HGVs in terms of range and the increase in prevalence of biofuels, we must ensure that any infrastructure proposed caters for businesses’ current and future needs.

It is also important to acknowledge that production and storage of these alternative fuels, in particular hydrogen, is better done ‘at scale’, and multi-modal recharging and refuelling sites incorporating the future needs of roads-based HGVs, as well as the future needs of rail, could offer better value for money. With there being limited application for hydrogen on the rail network in the Midlands, a shared production

Commitments: We will support the Midlands becoming a **test bed for innovation projects on alternatively fuelled HGVs** and the recharging/refuelling infrastructure needed for freight. An initial focus will be on completing our Innovate UK **H2GVMids** regional demonstrator desktop study by spring 2022.

We will work with Midlands Energy Hub and partners to further develop our **HGV recharging and refuelling site selection tool** to develop an **HGV recharging and refuelling network plan** and support the business case for priority sites in the network. The network plan will be in place by early 2023.

We will investigate the potential for **aligning road and rail recharging and refuelling sites** to improve the affordability and availability of a region-wide network. This will be done in line with developing the Programme Business Case for Midlands Engine Rail.

We will continue to work with partners to develop a **UK-wide view of the alternative fuels infrastructure needs of the freight and logistics sector across all modes**.

and refuelling network with HGVs is likely to come with affordability benefits for all modes.

Infrastructure availability is constrained by access to sites of the appropriate size and location, at reasonable costs. Fuel suppliers reported challenges of finding suitable sites near motorways and trunk roads that have sufficient space for large vehicles. There is also a need to consider proximity to ports, freeports, airports, freight clusters, strategic rail freight interchanges and gigafactories. Our work has identified a potential network of recharging and refuelling locations that could be needed to satisfy the demand by the freight sector in 2040 (see Figure 44 left). Our next step is to engage with partners to see if and how these sites could be brought forward.

We intend to work together across both the public and private sector to create potential trials and develop a joint action plan that enables the delivery of a recharging and refuelling network that satisfies our

emissions targets and the needs of our businesses. This will help accelerate the decarbonisation of road freight in the Midlands. Recognising the wider UK challenge, we are working with the DfT and Sub-national Transport Bodies to develop a UK-wide view of the alternative fuels infrastructure needs of the freight and logistics sector across all modes.

THE MIDLANDS AT THE FOREFRONT OF HYDROGEN FUEL CELL VEHICLE TRIALS

Net zero transport is a key component of the objectives of Midlands Connect and Midlands Engine. With 90% of the country's people and businesses within four hours' travel time, the Midlands is the focal point of the freight and logistics sector, accounting for 30% of HGV freight in the UK and hosting 35% of all warehouse space in the country - more than twice that of London, Scotland and Wales combined. The strategic importance of the region to the logistics and transportation sector has been further underlined with the award of two regional freeports at East Midlands Airport and Immingham Port. The freight sector will therefore be key in helping the region achieve net zero transport.

In 2021, we were part of a consortium comprised of industry, academia and public sector organisations that was successful in gaining funding to develop an initial feasibility study to deliver a hydrogen fuel cell HGV demonstration in the Midlands. These trials and demonstrations are vital in advancing the decarbonisation agenda within the freight and logistics sector, given the current lack of vehicle availability and limited infrastructure. The consortium created out of this feasibility study is one of the first of its kind in the UK and draws experience from crucial members of industry such as EDF, Toyota, ITM and Cenex with Midlands universities and multi-sector organisations such as Midlands Connect, Midlands Engine and Midlands Energy Hub.

The study will investigate the possibility of utilising a leasing company to establish sufficient demand to allow the development of a hydrogen freight network. It will report in 2022.

Adapting to climate change

Meeting our regional connectivity needs:



Making our roads more reliable

In response to the growing body of evidence surrounding the risks and challenges from the changing climate, we are examining how some of our most important transport corridors could be future proofed for the effects of climate change. The section of the A46 between the M5 at Tewkesbury and the A45 at Coventry has been used as a pilot scheme to test and refine an approach to assessing network resilience to climate change. This route was selected due to our current work to consider the need for transport interventions on the A46 corridor and the recognised environmental vulnerabilities along part of the route; vulnerabilities that are expected to be exacerbated due to climate change.

We have developed a framework which looks at 13 environmental parameters, consisting of over 60 metrics, along the part of the A46 that has been used for the pilot. The framework was used to identify areas most requiring climate change mitigation. We have used this data mapping to identify areas we're terming 'network resilience opportunities.' These are areas where we have identified both a transport problem and the need for climate change mitigation. An intervention might be developed in these areas which looks to solve both problems at the same time, leading to the delivery of multiple outcomes in a more efficient manner.

We will utilise this framework to present a regional picture of where these opportunity areas are across our networks. This will help us identify where different funding pots may come together to deliver multiple strategic outcomes.

Commitment: During 2022 we will use our MRN schemes to test our climate resilience framework to find the best way to integrate network resilience into infrastructure business cases. During early 2023 we will work with partners to develop a methodology for appraising climate resilience risks and opportunities on our most important transport corridors.

Partner Showcase: D2N2 LEP

Low carbon fuelling:

Derby, Derbyshire, Nottingham and Nottinghamshire LEP are making the implementation of low carbon fuelling infrastructure a priority in and around the East Midlands Global Gateway, to support the development of the East Midlands Freeport.



Reducing the impacts of transport infrastructure on the natural environment

There is a growing awareness of the need to better protect and restore the natural environment and address impacts from climate change. The government's Environment Bill is set to transform the way in which the environment is appraised and managed. Alongside this, with recent publications including the Dasgupta review, the National Infrastructure Strategy, the Transport Decarbonisation Plan and Environmental Impact Assessment reforms, change is imminent.

We understand the importance of safeguarding our natural environment, as a minimum, and support the government's mandate for a 10% increase in biodiversity following the completion of Nationally Significant Infrastructure Projects (NSIP). We will support our NSIP delivery partners in meeting this requirement and work with all our partners to explore how this standard can be applied to all transport infrastructure projects, as well as how we can safeguard the natural environment over and above biodiversity alone. We will examine the opportunities for our programme of MRN schemes to incorporate these positive natural environment outcomes into scheme development and delivery.

Commitment: By early 2023 we will deliver guidance for how the mandated standard for a **10% increase in biodiversity** for Nationally Significant Infrastructure Projects can be applied to all transport infrastructure projects.

This roads section has identified a number of different elements to our efforts to enable a more reliable and resilient regional road network that is fit for the future. We will bring all these elements together into a detailed plan during 2022.

Commitment: We will publish our **detailed plan for developing the region's road network** by spring 2023.



Partner Showcase: Greater Lincolnshire LEP

UK Food Valley:

The UK Food Valley programme in Lincolnshire will showcase the county's position as a Top 10 global food cluster. The LEP is working with industry, the technology and research sector and government to deliver food chain innovation and growth. Their aim is to lead the race to adopt new digital technologies and automation, the transition to net zero carbon and to promote the role of naturally 'good for you foods' in health.



5.4 Freight: moving goods in the Midlands

The importance of the freight sector to the Midlands (and vice-versa) ensures that freight needs are considered throughout our portfolio of work. We've already described:

- How freight is at the heart of our plan to improve rail connectivity in the region, including Midlands Engine Rail
- How efforts to decarbonise transport in the Midlands will be dependent on sustainably refuelling the enormous volume of heavy goods vehicles travelling through our region
- The role our strategic road corridor programme can play in improving road connections to international gateways.

In seeking to improve regional connectivity, it is also important we give the needs of the freight and logistics sector particular attention. We are developing a freight improvement plan that will set out the specific infrastructure needs of the freight sector in the Midlands. This is being co-developed with the freight industry and will be published by the end of 2022.

Meeting our regional connectivity needs:

-  Fast and reliable connections to international gateways
-  Making our roads more reliable
-  A competitive pan-regional rail freight offer
-  Decarbonising transport
-  Responding to the impacts of Covid-19

The importance of freight in the Midlands

The Midlands enjoys key competitive advantages in relation to freight. These advantages include its central location and existing infrastructure, albeit that (apart from the small ports of Boston and Sutton Bridge) it has no ports. Goods consolidated in the Midlands can be within 125 miles of a port of entry and within four hours of most destinations within the UK mainland. The region is well served by major motorways for regional freight and mainline railways to carry longer haul traffic to and from deep-water ports.

The 'golden triangle' for logistics is a concept which describes an area where national freight activity is concentrated in the Midlands. Whilst there is no formally defined geography, it is typically said to contain much of the West Midlands City Region, Leicestershire, Northamptonshire and Warwickshire, plus parts of Staffordshire and Derbyshire. The golden triangle is attractive to freight operators for several reasons:

- Much of the area is accessible from the Strategic Road Network and as such, there is scope for limiting road freight movements on the local highway network
- The proximity of the M1 and M6 motorways provide direct routes to key markets to the North and Scotland, as well as London to the South, whilst the Birmingham Box network of motorways provides access to the M5 and destinations in the South West
- The A14 provides a direct link to Felixstowe, whilst Southampton is accessed from the M40 and A34.

Crucially, the golden triangle is approximately four hours' drive time from much of the UK, enabling deliveries to reach over 90% of UK destinations within four hours. This aligns with drivers' hours regulations which require a 45-minute break after 4 and a half hours driving for HGV drivers. A vehicle and driver can therefore undertake the return journey back to depot in a single driving day, making vehicle scheduling and operation much easier from the Midlands.

The area is also well served by rail freight, with six of the 11 strategic rail freight routes identified by Network Rail passing through the Midlands Connect geography, and East Midlands Airport. This infrastructure provides multi-modal freight transfer opportunities.

Due to the Midlands' economic geography, it has a comparative advantage in terms of accommodating land hungry, large-format distribution centres with specific locational requirements: ideally large sites near to motorway junctions. Logistics is a key 'enabler' that allows other strongly performing sectors in the Midlands, such as the automotive industry and e-commerce, to thrive. As such, many freight operators have depots in the region, from large national organisations to smaller hauliers. This ensures that the Midlands has more warehousing than any other part of the country, with the East Midlands providing the most warehousing space of any region in the UK. A further advantage is the lower land-values than much of the south of England which makes locating new (and often very large) warehousing more cost-effective. The East Midlands alone accounted for 31% of all new warehousing space taken up in 2018 for dedicated e-fulfilment facilities.⁸⁹

Many warehouses are located together on large industrial estates of national significance. These include facilities such as Magna Park, located adjacent to the A5 and close to the M1. Magna Park has occupiers from national grocers such as ASDA and Lidl, automotive giants such as Nissan and Toyota and logistics firms such as Eddie Stobart and Great Bear.

Warehousing is growing rapidly at present, due to the recent economic disruptions caused by the pandemic and a wish by cargo owners to hold more inventory. This includes rail-linked distribution sites, or Strategic Rail Freight Interchanges (SRFIs). Key SRFIs in the Midlands include Daventry Intermodal Rail Freight Terminal and Hams Hall in North Warwickshire. The rapid expansion of such sites at Daventry and Kegworth (East Midlands Gateway), and the proposed development of new sites at Etwall (near Burton upon Trent in Derbyshire), Four Ashes (located near Junction 12 of the M6), Northampton and Hinckley illustrate the market response.

The average size of warehouses linked to online retail has increased by 41% from 197,000ft² in 2009 to 276,000ft² in 2018. Therefore, for the region to capitalise on this sector, it will need to provide large

strategic employment sites. Whilst there are some sizeable sites available across the region, they are being developed out quickly due to large unit sizes, so further locations may need to be identified if we are to keep up with the potential demand.

156,000 people were employed in the transportation and storage sectors in the East Midlands in September 2020⁹⁰ and 180,000 in the West Midlands (6.5% and 6.1% of total employment respectively, compared to a UK average of 5.1%)⁹¹. The Midlands accounts for approximately 20% of UK logistics jobs and GVA.⁹²

Issues and opportunities for freight

Stakeholders have told us they feel freight is not being supported by policy makers and that further support is needed to address issues such as future land support, alternative fuels, fuel tax policies, vehicle certification and regulation. Key areas where we can support partners in ensuring strong, sustainable growth in the freight and logistics sector include; helping to develop regional thinking in locating key freight and logistics sites, identifying important road and rail network interventions and helping to facilitate the transition to alternative fuels for both road and rail freight. The sector is heavily reliant on diesel fuel and a significant change is required to move to more sustainable means of propulsion.

A changing freight sector

The freight sector has undergone significant changes in recent years (including changing methods of production, technological change, consumer trends, shopping patterns and customer expectations). These all influence how goods are transported, with the freight sector needing to respond to a desire for both 'just-in time' and 'just-in-case' delivery modes. 'Just-in time' delivery has for a long-time been expected for more valuable and/or perishable commodities and parcels. Covid-19 has accelerated this expectation with increasing demand for next day delivery of many commodities. Covid-19 has also seen an increase in demand from some businesses (for example supermarkets) for 'just in case' heavy-haul type models with a need to maintain larger inventories of stock to reduce the risk of supply issues.

Continued pressure to reduce carbon, alongside e-commerce and consumer expectation of 24-hour delivery, as well as issues associated with supply chain resilience, will put conflicting pressure on existing logistics models. This could potentially see a rise of hub and spoke models, with higher and more dispersed inventories enabling faster order fulfilment. These are challenges that the freight sector, across all modes, needs to continue to rise to.

Whilst infrastructure such as canals are well established from a freight perspective and now play a minor role in the movement of goods, initiatives to

explore how to re-use them may require innovative approaches, such as management of capacity, new types of barge and connections with customers.

Growth projections for the Midlands are likely to see an increase in the volume of freight moved in and through the region. However, as described above, this is a changing sector and we need to understand how the movement of goods is changing. The fragmented nature of the sector, with many SMEs and micro-businesses, means encouraging change can be difficult when operators are focused on the day-to-day running of their business.



Road freight: journey time reliability and congestion

Road is the primary means of moving freight in the Midlands. Roads are involved in at least one leg of almost every consignment of freight's journey. On the Strategic Road Network (SRN) in the Midlands, approximately 16% of vehicles are HGVs.⁹³ Road freight volumes are also expected to grow to 2030,⁹⁴ placing more pressure on the SRN.

Figure 45 shows the annual number of the largest HGVs (44 tonne gross vehicle weight) on much of the core of British highway networks and shows the extent to which there are significant HGV flows to, from and through the Midlands. The main flows are concentrated on the SRN and on the north-south axis, with other important flows to and from major ports.

Some of these are the busiest highway freight routes in the region and where journey time reliability is poor, adding costs and delays to the wider supply chain. Poor east-west connectivity is also an issue and HGV delays cost operators £1 per minute.⁹⁵ The most frequently congested routes to ports are:

- The Midlands motorway box (all ports)
- The M1 around Nottingham (to the Channel Tunnel and Felixstowe)
- The A50 between the M1 and M6 (Liverpool)
- The A46 in the Midlands (Humber/Immingham).

Towards the south-east, Felixstowe, London and Dover/Channel Tunnel, both the M6 and M42 are major constraints to future capacity. The M6 from Junctions 3 to 6 is under significant strain with sections on the approach to and from the M6/M6 toll/M42 interchange at Junction 4 over 100% capacity at peak times. Towards Liverpool, the M6 from the West Midlands to Stoke operates close to maximum practical capacity (85%).

M1 Junction 21 is a major pinch point with traffic between M1 Junctions 21 and 23 approaching 85% of the capacity. Around Nottingham, traffic between Junctions 24 and 25 of the M1 often exceeds 100% of the available capacity and the A52 from Junction 25 towards Nottingham in places exceeds capacity. Southbound on the M1, there are issues south of Junction 18 and the A46 Hobby-horse junction in north Leicestershire is also a major pinch point.

The large increase in vans, driven in part by changing consumer trends following the Covid-19 pandemic, has also increased freight traffic in urban areas.

Rail freight: capacity and capability

Network Rail's Control Period 4 (2009-2014) marked a period of new investment being committed to schemes to improve the Strategic Freight Network, and the freight industry tasked with finding ways to maximise the use of network capacity. Although heavy-haul coal freight has declined following the closure of a number of coal power stations, overall freight volumes have increased since 2011, particularly for intermodal and aggregate freight.⁹⁶

Freight capacity and capability remain the dominant constraint across the rail network. As described in our rail priorities section (Section 5.1), the main rail bottlenecks for freight in our region are at Water Orton (just outside Birmingham) and Leicester. Some of our aggregates routes (from Derbyshire and Leicestershire quarries) are also constrained by capacity and line speed.

However, in response to market changes (as described above), rail freight now needs to consider how it can meet the demands of 'just-in-time delivery', as well as the more traditional 'just-in-case' heavy-haul. The solutions are no longer about pure network capacity, but about rail freight's ability to respond dynamically and flexibly and penetrate new locations and new markets.

The 'just in case' model of delivery means maintaining larger inventories of stock to reduce the risk of supply and demand issues, with Covid-19 increasing the focus on such models, which requires greater warehousing space. However, much of the new warehousing is now being developed by companies such as Amazon, whose commercial model to the end user is 'just-in-time delivery'. In addition, changes in the location of warehouses are making rail more attractive to retailers, with major supermarkets quickly becoming some of the largest users of domestic rail freight, driving a new blend of 'just in case' and 'just in time' commercial freight models. This may be accelerated with the advent of freeport and port-based logistics, especially where there is an established rail freight corridor. SRFIs can be a key part of this and the Midlands is well served. However, there is a need to find ways to attract more customers in this new market and this is likely to require

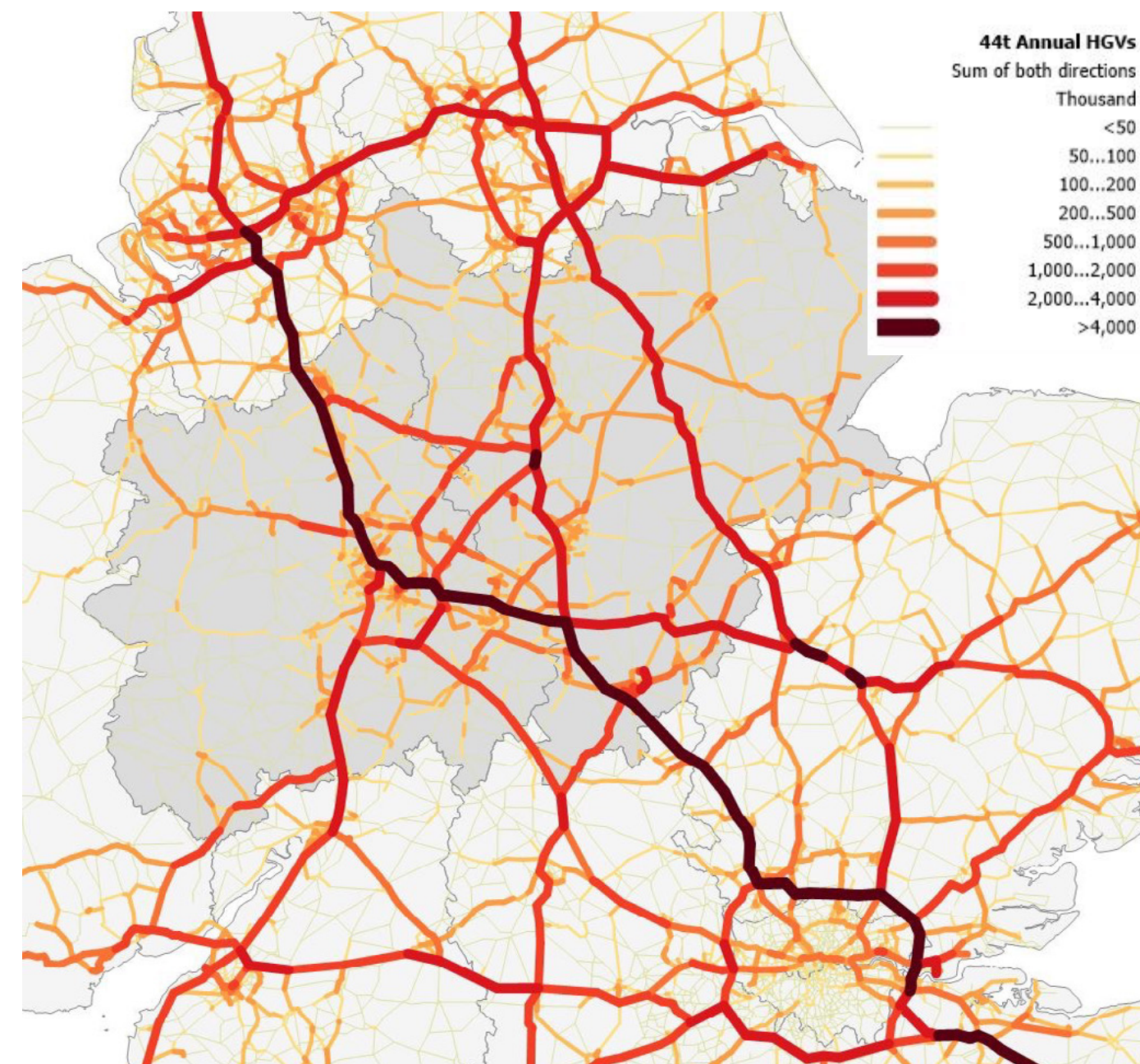


Figure 45: Annual number of HGVs on highway links in both directions (Source: MDS Transmodal)

a rethink of the commercial models used by Network Rail and freight operators to sell their capacity.

The urban freight market is another opportunity for rail freight, with rolling stock companies such as Orion and Eversholt Rail now refitting old passenger trains to be able to transport high value, low density freight (e.g. parcel deliveries) into more central urban locations where more sustainable first mile/last mile modes can connect into.

The impact of freight

Freight is obviously not without its impacts. In addition to the congestion freight traffic can cause, on the Midlands' motorways, freight vehicles are involved in 35% of incidents⁹⁷. As described earlier, 21% of carbon emissions from transport in the Midlands are from HGVs, a figure higher than the national average.

93. WebTRIS, National Highways platform for traffic data from SRN sensors, National Highways 94. MDS Transmodal Great Britain Freight Model 95. Prioritise logistics or risk supply chain chaos, Logistics UK, 21 February 2020 96. Freight Network Study, Network Rail, 2017

97. Road Safety Data, Department for Transport

Covid-19 and freight

Covid-19 has reminded us of the importance of our freight and logistics industry. Our freight operators have kept food on the shelves, allowed our manufacturers to keep making things and delivered medicine and supplies to care homes and hospitals.

During the early stages of the Covid-19 pandemic, road freight traffic reduced but then bounced back and the quieter roads resulted in more efficient and quicker freight movements. The pandemic has changed consumer behaviour, accelerating home shopping trends. This has increased the number of deliveries, increasing van activity for 'last mile' delivery. Rail freight has benefited from reductions in passenger train movements, with more paths available, fewer delays, shorter journey times and longer, heavier trains. This increased capacity has shown the positive impact that enhanced flexibility can offer the sector and increased its competitiveness against road.

Skills and working conditions in the freight sector

Access to skilled labour in the freight sector is considered to be a weakness as there is an ageing workforce and changes to working arrangements following Brexit are making it more difficult to recruit from Europe. Driver shortages are now particularly pronounced with longstanding issues associated with attracting young people. A lack of safe parking and suitable welfare conditions result in a poor perception of this type of work and acts as a barrier to those considering training as HGV drivers, particularly women. This emphasises the importance of planning for the provision of freight facilities as part of improvement plans on strategic road corridors, rather than as an after thought. Automation will also impact on skills and labour requirements in the sector, with some roles being phased out and greater demand for skills in IT and advanced manufacturing.

Planning freight improvements

There are already a significant number of opportunities for improving conditions for freight across the Midlands and for improving the region's connectivity to the wider UK and international gateways.

Road corridors

Our earlier section on improving the service to users of the SRN identifies the key strategic road corridor schemes being developed by Midlands Connect. All these corridors support the nationally important freight movements through and in the region. In particular, the A50/500 and the A1 are nationally significant freight arteries supporting logistics and manufacturing businesses with high numbers of freight movements. The A46 also plays a crucial role in transporting freight, particularly towards the Humber Ports and Immingham.

We need to continue taking a cross-boundary approach to deciding where key freight and logistics sites should go, as the Humber Ports lie outside our area. We also need to work with other Sub-national Transport Bodies to identify and improve capacity pinch-points throughout the UK and understand how improvements to the strategic transport networks in other parts of the country can affect freight movements through the Midlands.

Midlands Engine Rail

Our Midlands Engine Rail programme is not just focused on transforming passenger rail connectivity, it also provides key benefits for regional and national rail freight. We have described how the main rail bottlenecks for freight in the region are at Water Orton and at Leicester, aligning closely with improvements required to enable our ambitions for enhanced passenger services. The freight impacts of our MER schemes are outlined in our earlier rail priorities section (Section 5.1).

We are also working collaboratively with national partners and neighbouring Sub-national Transport Bodies on several nationally significant rail freight schemes, including:

- Freight capacity improvements on the Felixstowe to Midlands and North route, in particular the key pinch point near Ely

- Freight capacity improvements on the Solent to the Midlands route, which includes our MER Birmingham Airport Connectivity project
- Infill electrification of rail freight routes. This involves linking routes which are already electrified to provide rail freight operators more confidence in procuring electric rolling stock
- The London Rail Freight Strategy, which has implications on freight routing from London and the South East to the Midlands
- Freight capacity improvements on Trans-Pennine routes and links to the Integrated Rail Plan.

Again, additional information on these schemes is provided earlier in our rail priorities section.

Our emerging freight improvement plan

Our work around freight and logistics is ongoing - by continuing to engage with a broad stakeholder group, our aim is to publish a freight improvement plan by the end of 2022. The purpose of this work is to ensure that freight and logistics continue to support the regional and UK economy, whilst creating a safe, efficient and sustainable freight sector that acts as an example for other regions.

Our freight improvement plan will include the following objectives:

- To exploit the natural advantages of the region's location and ensure freight can support the wider Midlands and UK economy
- To ensure capacity released by HS2 benefits rail freight
- To encourage modal shift to more sustainable transport
- To decarbonise road freight, contributing to the delivery of government's 'net zero' carbon target
- To enhance integration between freight modes to provide a more resilient and effective supply chain.



The plan will aim to tackle the issues that stakeholders have told us are important for freight:

- Further development of the rail network to improve links to other regions and urban areas
- Improved road reliability and capacity
- Increased intermodal terminals, both large scale SRFIs and smaller urban terminals for bringing consumer goods and construction materials into city regions
- Use of new and developing fuel technologies to help deliver a zero-carbon freight future
- Maximising the opportunities associated with emerging freeports
- Making freight central to policy making, including planning and transport policy
- Increasing the amount of freight moved by sea routes and greater use of inland water freight.

Maritime is the most carbon efficient mode of moving freight, followed by rail. The trend to larger ferries to carry unitised cargo has the potential to remove HGVs from the road (and rail). The expansion of operations at ports such as the Port of Boston could help decarbonise the movements of food goods. We would like to work with industry to understand the benefits of increasing the amount of freight moved by sea routes.

Accelerating the use of alternative fuels: Efforts to encourage modal shift of freight from road to more environmentally-friendly alternatives, such as rail, cargo bikes and inland waterways are vital and mirror government aspirations in their Net Zero Strategy.⁹⁸ However, road freight will always play a significant role in the movement of goods, given its flexibility and ability to provide an end-to-end solution to any location. Therefore, it is vital that the sector is supported in transitioning away from carbon-based fuels to more sustainable alternatives such as hydrogen and battery power. Investment to increase the number, spread and quality of alternative refuelling and recharging stations is therefore vital. At present there is also uncertainty about which technology (hydrogen, battery electric, Electric Road System) is the most appropriate for different types of freight movement.

Investing in rail improvements: Research and feedback from stakeholders have shown that to encourage modal shift, further investment in the wider rail network is required. This includes additional and longer passing loops, electrification, gauge enhancements, new chords or track and terminals to serve key markets. Ensuring that rail is a competitive and viable alternative to road is essential to achieving the objectives of our freight improvement plan.

HS2 brings the benefit of releasing capacity on some existing lines that could be utilised by rail freight. However, there is high competition with passenger services for the use of this capacity. This could be exploited and enhanced by further investment in the rail network. It should be noted, however, that the Integrated Rail Plan proposals have HS2 trains using the conventional network in many places, which may impact on capacity for rail freight.

Planning access to Strategic Rail Freight Interchanges (SRFIs):

One of the most powerful policies we can support in encouraging the decarbonisation of freight lies in planning effective access to SRFIs and associated warehouse clustering, as this can expand the proportion of total warehousing and industrial development with direct access to rail and high-capacity road for regional distribution. This is because rail can offer economies over road where at least one end of a journey is on a rail-connected site where distances exceed around 125 miles. This opportunity will attract warehousing and industry because the site occupiers will enjoy the benefits of these reduced costs.

There continues to be considerable interest from the market in the development of new SRFIs, including sites at Four Ashes, Hinckley, Northampton and Etwell. The integration of Kegworth and Etwell with the air freight hub at East Midlands Airport into a freeport could make an important further contribution to the regional economy. We will take an advisory role to support our partners, for example in helping them to understand the benefits and constraints of sites as they come forward and ensure sufficient capacity on the rail network.

Facilitating urban deliveries: The Midlands is home to several major population centres, which are significant generators of freight movements. Changing consumer trends, accelerated by restrictions associated with the Covid-19 pandemic, have had a major impact on how goods reach the consumer and have increased the number of freight vehicles on our roads. Investment in infrastructure to facilitate safer and low-carbon urban deliveries is therefore a priority for our freight improvement plan, including exploring the role of non-road modes.

We are particularly keen to explore the possibility of more use of the railway network to deliver freight into city centres. This is a potentially significant opportunity for rail, in part driven by the increased numbers of parcels and home deliveries following the pandemic. With companies such as Orion and Eversholt now developing suitable rolling stock, we want to further explore the opportunity in city centres across the Midlands. In parallel, Network Rail is also assessing the ability of key hub stations to become distribution centres. The last-mile part of the journey could then be undertaken by, for example, e-cargo bikes or other equally low-carbon modes.

Maximising the opportunities of freeports: As proposals for two freeport sites in the Midlands develop, we will work with partners to understand and champion what each site will need from a strategic transport connectivity perspective to maximise the economic opportunity for the region.

Supporting rural freight movements: We recognise the challenges posed by moving freight through, to and from rural areas. Our priority is to ensure that these movements are facilitated in a safe, effective and efficient way and do not impact those who live and work on busy freight routes.



Areas for further work

Several areas of our freight improvement plan will require further investigation. These include the use of waterways, which requires research and consultation with potential customers, operators and wharf sites to determine who the likely users are, which operators could support an increase in inland water freight and where efforts should be targeted.

We would also like to work with technology providers and researchers to identify opportunities to encourage innovation in the freight sector and how technology can address some of the issues identified. There is the potential for the Midlands to build on its position as a key freight hub and lead in efforts to create an even more efficient sector.

Consolidation is not a new theme, however greater collaboration in the sector to help reduce road miles will align well with the objectives of our freight improvement plan. We would like to explore the potential for consolidation at different scales

(e.g. city-region down to micro-consolidation) and different models of operation. We need to understand how the freight sector is changing and what this means for the movement of goods. We plan to undertake a quantified multi-modal forecasting and appraisal of the movement of freight around and within the UK. This will examine how our partners' spatial planning and making land available for SRFI sites can help deliver strong, low-carbon growth in the freight and logistics sector.

Commitments: We will publish a regional **Freight Route Map and Improvement Plan** by the end of 2022. We will **incorporate rail freight needs** into all our passenger rail projects, supporting the transportation of more goods by rail. This will include supporting the development of a network of strategic rail freight interchanges across the region and the UK. It will also include linking the two freeport proposals located within the Midlands.

Partner Showcase: Leicester and Leicestershire LEP

East Midlands Freeport:

To boost productivity and trade across the region the Leicester and Leicestershire LEP is highlighting the need to ensure the East Midlands Freeport is delivered. This will not only help Leicestershire, but also the East Midlands and the wider UK.



Partner Showcase: Staffordshire County Council




Brinsford Parkway:

The provision of a parkway rail station at Brinsford is a strategic infrastructure priority for Staffordshire County Council. The Council's Strategic Infrastructure Plan highlights that a significant amount of investment will be required to address existing issues and support future growth. The proposed station is close to the northern suburbs of Wolverhampton and has excellent access to the strategic road network. It will bring improved sustainable connectivity and direct access to Birmingham, Stafford, Crewe and Liverpool, opening up access to jobs and leisure opportunities that are currently not available, thereby reducing disadvantages and inequalities. Post HS2, Brinsford Parkway will also provide access to HS2 services via Stafford, Birmingham and Crewe, reducing the journey time between London and Stafford to 55 minutes.



5.5 The unique challenges of rural areas

Meeting our regional connectivity needs:

-  Solutions to rural transport challenges
-  Improving digital connectivity
-  Decarbonising transport

Historically there has been a lot of focus on how technology and innovation can transform the mobility offer in cities, but very little has been done to understand the opportunities for improved mobility choices in rural areas. Since 2019, we've researched the future of rural mobility and established a working group of rural authority partners to collaborate on the challenges and opportunities for planning and improving rural mobility and increasing access to public services and jobs.

15% of people in the West Midlands and 27% of people in the East Midlands live in truly rural areas⁹⁹. Our rural areas are characterised by an ageing population, high levels of car dependency and in some cases, poor digital connectivity. Lack of access to educational opportunities leads to a skills gap. There is also a higher prevalence of employment in manufacturing and construction businesses in some rural areas.

In these areas, average weekly transport costs are higher when compared to urban areas and people are nearly twice as far from their nearest services than city dwellers. This reinforces the use of cars to access town centres, hospitals and education and results in overall trip distances being much further.

These issues mean that some people without access to a car in our rural areas are suffering from 'transport inequality'. This is defined as: "the process by which people are prevented from participating in the economic, political and social life of the community because of reduced accessibility to opportunities, services and social networks, due in whole or part to insufficient mobility in a society and environment built around the assumption of high mobility."¹⁰⁰ We want to enable people and communities in rural areas to have genuine transport choices in the future and more equal access to services.

Car dependency also means that rural areas emit more CO₂ through transportation than urban areas and therefore face a larger challenge in decarbonisation. Our carbon baseline estimates that in 2019, 71% of all carbon emitted from surface transport was done so in shire county areas.¹⁰¹

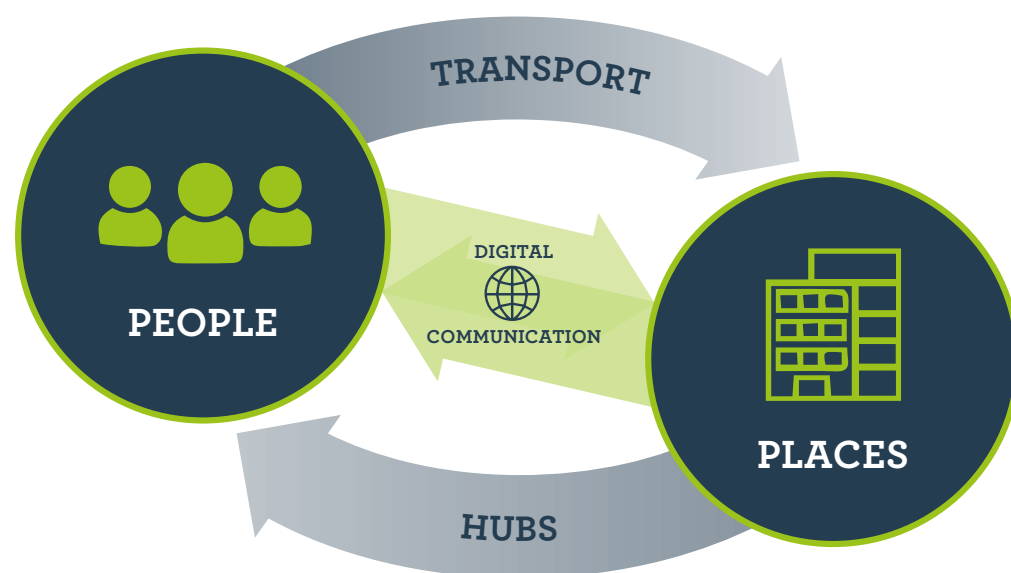


Figure 46: Approaches to addressing transport poverty in rural areas

These challenges can be addressed in three ways, as illustrated in Figure 46 left.

1. By improving digital connectivity to homes and workplaces: this reduces the need for car-dependent travel – however, it does not address the issue of social isolation
2. By bringing services to people through the creation of hubs: the need to travel further afield and/or make multiple journeys is reduced and a sense of community is created, addressing social isolation issues
3. By improving affordable, frequent and reliable public transport connectivity, we can enable people to travel to the places they need to go. This is at the heart of our 'access to rail' workstream.

The future of rural mobility

Our work since 2019 has looked at the user cases for future transport innovations in a rural context and has developed a 'Rural Mobility Toolkit' (shown in Figure 47) which aims to help rural authorities and community groups identify how to take advantage of new transport technologies and make the most of rural hubs to access both services and public transport. Our Rural Mobility Toolkit was referenced by the DfT in their Transport Decarbonisation Plan as an exemplar of how to tailor low-carbon and innovative solutions to the specific transport needs of rural areas.

Rural hubs and their role

The concept of rural hubs is to look for locations in a rural area which can; firstly, reduce the need to travel by bringing services to people, and secondly can potentially help public transport be more viable in rural areas by concentrating demand for journeys.

We have developed draft guidance for local authorities to illustrate how they can identify good opportunities for potential rural hub locations and then how to develop them as commercially viable prospects. We have provided two local authorities with some kick-starter funding to use our draft guidance to develop hub concepts and begin to develop specific ideas for new hub locations.

Derbyshire's project focuses on the areas of Buxton and Hope in the Peak District National Park. This area is very rural, with poor connectivity to services for the residents and for the approximately 5 million annual visitors to this area (in a normal year). Low population density combined with poor public transport provision makes access to amenities very difficult, particularly as there is a higher proportion of elderly people in the area. The study has explored how hubs can support changes to public transport, especially considering impacts of the pandemic on viability of services.

Through a comprehensive engagement exercise with key local stakeholders which has explored both the rural challenges and opportunities, Derbyshire's pilot study has established the need for rural hubs



in both Buxton and Hope while also identifying the services required to meet demand and who could potentially deliver them. A rural hub in Buxton could complement a new health centre being developed by the NHS trust, providing increased accessibility to healthcare, whilst a hub in Hope could facilitate crucial economic benefits for Hope Valley while encouraging modal shift to rail for local residents and tourists alike.

In Nottinghamshire, a rural hub project is using our guidance to examine an area of north east Nottinghamshire, covering the rural areas of Bassetlaw and Newark and Sherwood Districts. The area is sparsely populated with villages, linked largely by country lanes and contains the main settlements of New Ollerton and Tuxford. The hub(s) will enable the people of this area to connect with bus services providing access to the local towns of Retford, Newark, Gainsborough, and onward links to Mansfield and Nottingham.

Upon conclusion of these pilot projects, we will publish our guidance for developing rural hubs.

Rethinking public transport in rural areas

Working with local partners, we also now wish to explore how rural public transport could be reconsidered, in an era of greater digital connectivity and the different needs of our different rural communities. We are aiming to help generate new ideas in 2022 and develop them to the point where they could be trialled in specific locations by local partners.

Commitments: We will generate new ideas during 2022 on how rural public transport could be re-imagined.

By summer 2022 we will publish our **rural hub guidance and toolkit** to help local authorities identify and establish commercially viable rural mobility hubs.



Partner Showcase: Derbyshire County Council

Rural mobility and rural bus network:

In Derbyshire rurality is an issue faced by many residents. Derbyshire County Council want to take a new approach to rural connectivity and explore how to underpin a sustainable (financial and environmental) rural bus network.

Partner Showcase: Rutland County Council

Rural connectivity, demand responsive rapid transport and technology:

Accessibility and connectivity are key to productivity in the rural areas of Rutland. The County Council want to service their rural residents through a combination of both operational improvements and technology-based solutions. Their aspiration is to make demand responsive transport work in a 21st century way.



Rutland
County Council



Key

- 1 Multi-use hub
- 2 Last mile delivery pods
- 3 Telephone triage
- 4 Online education from home
- 5 Car sharing
- 6 Drone deliveries
- 7 Autonomous tractors
- 8 Demand responsive bus
- 9 Road traffic sensors
- 10 Local businesses
- 11 E-bike hire
- 12 Autonomous vehicles
- 13 Public WiFi
- 14 Delivery lockers
- 15 Real time bus timetable
- 16 Electric car charging points
- 17 Co-working space
- 18 Village/Town hall clinics
- 19 Multi-use space
- 20 Rail freight
- 21 Park and ride/transport hub

5.6 Maximising the role of technology in transport

In 2019, we researched several future scenarios of the Midlands' growth over the next 50 years. This 'Alternative Futures' study¹⁰² also briefly considered the role technology might play in changing travel patterns and habits. From this work, we have recognised the need to further explore how the coming disruptive change in mobility from technology will impact on (and provide benefit to) the existing and planned transport systems in the Midlands.

Our vision is to become a progressive regional partnership exploiting technology and innovation to accelerate growth in transport connectivity, safety and carbon reduction. If we are to achieve this vision, we need a greater understanding of the transport technology needs of our partners, so we undertook a technology gap analysis study in 2020 to:

- Identify what legacy, established, emerging and conceptual technologies are available to the transport networks in the region
- Identify the existing provision of these technologies by each Midlands Connect partner and what their aspirations are in the short, medium and long-term
- Undertake a technology gap analysis and recommend priorities to take forward.

From this work, a prioritised list of transport-related technologies has been developed for the Midlands Connect area. The resulting list provides an indication of the most important technologies for Midlands Connect partners, with a focus on electric vehicle charging infrastructure, smart ticketing systems and provision of public and shared transport modes.

Meeting our regional connectivity needs:



Improving digital connectivity to reduce the need to travel



Better integration between local, regional and national networks

A regional transport technology action plan

Building upon the vision for the role of technology in the Midlands and the prioritised list of technologies identified in our technology gap analysis, one of the recommendations was to develop a Midlands-wide transport technology action plan.

We are currently developing this plan and it will be published in autumn 2022. The plan will set out how different technologies could change the demand for travel, how technologies can help supply services to meet this demand and what is needed to enable these services.

For example:

- The demand to travel could be influenced by the availability of high-speed broadband and technologies that substitute physical trips with online activities and services
- Supplying services to meet the demand for travel could be influenced by the automation of vehicles or through the ability to provide on-demand services to suit individual needs.

Our technology action plan will set out a series of technology route-maps to 2060 that influence both the demand for travel and the supply of services to meet this demand. There will clearly be significant uncertainty in the technology route-maps, in particular past 2030. We will therefore need to continually evolve our understanding of future technologies and update our action plan as we know more about what the future brings. Improving our understanding of future technologies and the building blocks that enable them is most critical up to 2030.

Our role in this space is to develop guidance, coordinate collaboration to enable multiple authorities to work at scale and provide technical advice. The intention is that we help our partnership understand the risks and opportunities associated with new technologies and enable positive decisions to be made which seek out those opportunities.

The action plan will be co-developed with key partners, including Nottingham City Council and Transport for the West Midlands as they are well advanced in their transport technology thinking and several of our local enterprise partnerships (LEPs) who can provide access to private sector expertise and experience.

Commitment: We will develop and publish a regional **Transport Technology Route Map** with an accompanying **Technology Action Plan** for the next ten years in autumn 2022.



Partner Showcase: Warwickshire County Council

Transforming Nuneaton:

Warwickshire's 'Transforming Nuneaton' project has a vision to grow the town through regeneration of living, business and cultural space. Improved rail connections to Birmingham, Coventry and Leicester will cement the connectivity of the town.



5.7 What our plan will achieve

Summary of the core benefits our plan will deliver

An initial, order of magnitude assessment of the potential benefits of our rail and road infrastructure priorities is set out below:

Transport user benefits

- Our full package of MER interventions is forecast to deliver transport user benefits of approximately £4 billion over a 60-year period from 2035 and raise revenues by approximately £3.5 billion.¹⁰³
- Our road investment programme for the period up to 2035 (including both our RIS3 and RIS4 priorities) could generate transport user benefits over a 60-year period from 2025 of approximately £40 billion.¹⁰⁴

Additional benefits

- Our combined road and rail priorities could provide up to circa £2 billion more GVA per annum by 2041 in the Midlands, rising to circa £4 billion per annum by 2061.¹⁰⁵ This GVA impact represents increased productivity and improvements to labour market access, facilitated by delivery of our priorities. Delivery of our priorities will also help support the Midlands Engine ambition for 334,000 additional jobs.¹⁰⁶

We have not considered the effects of released rail capacity from HS2, wider interventions (such as enhanced bus access to rail), technology interventions and our longer-term infrastructure aspirations. We have also not assumed any direct dependency of future development on our infrastructure or our wider work developing ideas, research and innovation across the Midlands. We therefore consider our assessment of benefits to be conservative at a strategic programme level. The individual business cases that develop our priorities further will be the vehicle for deepening our understanding and capturing location-specific benefits.

During 2022 we will undertake a wider and more detailed assessment of the social, environmental and economic benefits of our Strategic Transport Plan to assist the development of our priorities as individual schemes. This will focus on both our infrastructure priorities as well as the work we are doing to lead and enable regional innovation and collaboration on issues such as EV charging infrastructure provision, alternative fuels for freight and logistics, rural mobility and smart ticketing.

Benefits to transport users

In terms of transport user benefits (representing the travel time savings for vehicles) our rail infrastructure priorities could provide benefits of approximately £4 billion over a 60-year period from 2035 and raise revenues by approximately £3.5 billion. Our road investment programme for the period up to 2035 (including both our RIS3 and RIS4 priorities) could generate transport user benefits over a 60-year period from 2025 of approximately £40 billion. Work will take place over the coming year to firm up the costs of these rail and road priorities. However, we anticipate the transport user benefits of these programmes will considerably exceed the costs, putting our programme of infrastructure priorities into the high value for money category (noting the uncertainties described below).

The assessment at this stage excludes:

- Full representation of decongestion benefits due to the strategic nature of the modelling
- Accident savings
- Construction (negative) and maintenance impacts.

The individual business cases for each of our early priorities will provide further detail on their benefits and costs as they are developed. We expect that the value for money for each scheme to strengthen further as they are taken forward through development work to delivery stage.

Wider economic benefits

In terms of wider economic benefits, our strategic transport infrastructure priorities are expected to grow the region's GVA by approximately £2 billion per annum (including agglomeration) based on 2041 forecasts, rising to circa £4 billion per annum by 2061. Agglomeration is the process through which businesses become more productive from being closer in effective terms to other businesses. As the density of employment increases, business clusters are likely to develop and enable both the casual and formal exchange of knowledge that enhances innovation and improves the region's productivity.

Our work confirms that our early priorities proportionately have the highest impact in terms of agglomeration benefits and GVA. These priorities support the Midlands Engine ambition for the delivery of 334,000 additional jobs to help close the productivity gap between the Midlands and the rest of the UK.

We have forecast the potential dynamic agglomeration benefits (i.e. the benefits to existing and new businesses) of key elements of our Strategic Transport Plan. This enables businesses and households to relocate and the economic geography of the region to alter in response to the opportunities improved connectivity delivers. The Department for Transport's Web-based Transport Analysis Guidance (TAG) focuses on static agglomeration where existing businesses get better at what they were previously doing from improved transport links. Given the long-term focus of the Strategic Transport Plan, it seems reasonable as economic forecasting methods improve to concentrate on the dynamic effects.

As described above, our analysis shows that our short-term priorities have the potential to provide dynamic agglomeration benefits across the Midlands of around £2 billion per year (2041) and around £4 billion per year (2061). The benefits to the UK as a whole will be lower as this analysis is based on existing HMT assumptions around displacement and zero net additionality. Further work is planned to understand how these assumptions can be improved and the nationwide benefits of levelling up assessed.

Scope of this appraisal

Our appraisal examines the benefits of our priorities for road up to the end of RIS4 (2035) and our full Midlands Engine Rail programme (to circa 2040). We have a pipeline of longer-term interventions that go beyond this period. However, these have not been included in this appraisal, given that there will be increasing uncertainty on the exact interventions that will be needed as we look further into the future.



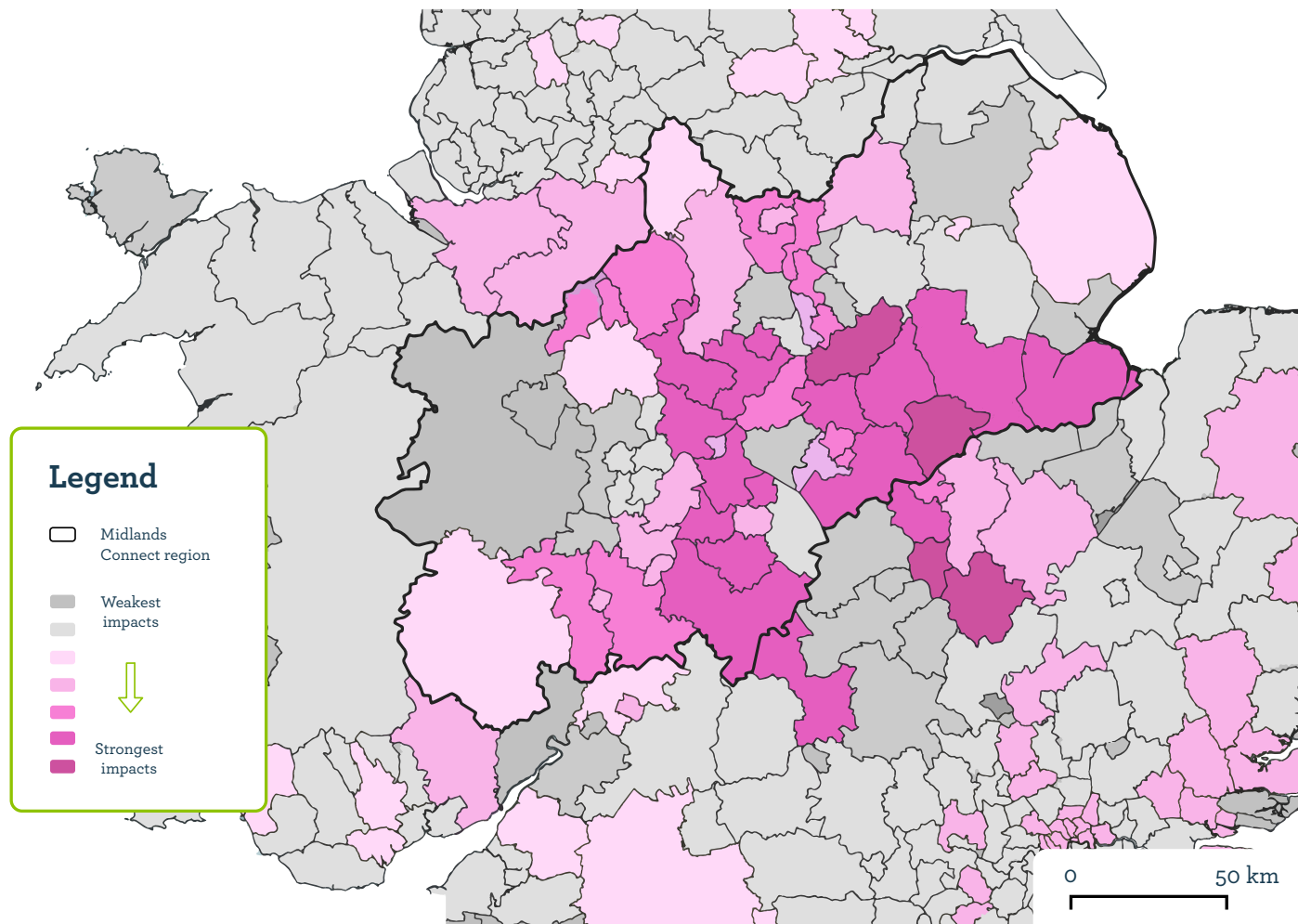


Figure 48: Distribution of agglomeration benefits from our MER programme and road investment priorities

The distribution of total forecast agglomeration benefits is shown in Figure 48.

By improving travel conditions in the Midlands, we will support UK businesses to become more productive, and make the Midlands a more attractive place to do business and to live.

Through better mobility solutions and propositions, people will be able to find better paid work further afield and businesses will, through better transport networks, be able to locate in more financially efficient areas without compromising their access to suitably skilled workers. The increase in the attractiveness of the Midlands also has the potential to lead to the avoidance of the requirement for the development and delivery of more expensive infrastructure in other parts of the country.

As our Strategic Transport Plan is delivered, these benefits will begin to be realised, boosting job opportunities, access to leisure and new homes, and putting money in the pockets of Midlanders.

Our Strategic Transport Plan is aligned with the growth aspirations of our local enterprise partnerships and local authorities. The combined local and strategic infrastructure interventions (digital, rail, public transport and road) will maximise the viability and rate of housing growth through both the quality and ease of travel connections and the effective increase in journey to work catchment areas.

Dealing with uncertainty

The strategic transport infrastructure priorities described in this plan represent our understanding of what is needed to address current and near-future problems, regardless of any uncertainty around long-term changes in travel demand.

As we develop the individual business cases for our priorities we will ‘stress test’ them against a range of future travel demand scenarios to ensure they are indeed ‘no regrets’ and are needed whatever uncertainties there are around the future, including our regional economic strengths, post-pandemic travel behaviours and technological change. This mirrors the approach currently being taken to all investment options with a longer-term development and delivery horizon.

Funding our priorities

Section 6.4 of our plan sets out an estimate of the potential funding that could be available for strategic rail and road infrastructure investment in the Midlands between 2020 and 2035. We estimate that this figure could be in the region of £25 billion - £30 billion. However, it should be noted that this has to cover committed road and rail schemes plus HS2 and Integrated Rail Plan commitments. It will also need

to cover the maintenance and renewals of existing infrastructure and is therefore by no means a figure exclusively for new or enhanced infrastructure.

It is also not a precise figure expected from government. It provides a high-level estimate of the fiscal boundaries we might be operating within if we are to take forward our strategic transport infrastructure priorities. We believe this scale of investment is proportionate to national investment in infrastructure and, as such, is an ambitious but achievable scale of investment for the region. However, in the coming year we will develop a high-level funding and finance plan to accompany this Strategic Transport Plan. This will identify the costs for the infrastructure priorities outlined in this plan and highlight where we believe funding may come from (both public and private) to deliver on the priorities set out in this document.

Commitments: During 2022 we will undertake a wider assessment of the economic, social and environmental benefits of this plan. This will be published in early 2023.

In early 2023 we will develop a high-level funding and finance plan to accompany this Strategic Transport Plan.



6

Making progress: accelerating and improving delivery



6. Making progress: accelerating and improving delivery

6.1 At a glance

We share government's aspiration to accelerate the delivery of the transport infrastructure projects that the country needs. This is vital in the Midlands, given that the region makes up a significant part of the UK economy.

We want to continue to use our major projects development expertise and co-ordinating role to help accelerate a pipeline of opportunities that will future-proof our region's transport network for generations to come. We want to do this as quickly and as effectively as possible, ensuring we are best placed to make the most of the funding and investment opportunities available and to secure the best possible transport deal for the Midlands.

A robust, evidence-based infrastructure pipeline also provides greater certainty; for investors in the region, the supply chain and to improve forecasting of the future skills needed to deliver this pipeline.



“The government wants to deliver infrastructure projects better, greener and faster.”

National Infrastructure Strategy, 2020

In order to help accelerate the delivery of our priorities, we will focus on four key areas. We will:

- **Build on our strong partnership working** by strengthening regional collaboration and developing a ‘One Midlands’ approach to delivering the priorities identified in this plan
- **Enable more effective decision-making** through better business cases, better use of data and better monitoring and evaluation
- **Take a pragmatic approach to funding** further development and delivery of the strategic rail and road priorities we have identified in this plan. We will also **be ambitious and want to work with government to rethink how transport infrastructure is funded**
- Work with our local authority partners to help **transform their capability and capacity** so we can collectively develop, deliver and accelerate the major transport projects and schemes that we need.

Work on all of these areas is underway and is summarised in the following sections.

6.2 ‘One Midlands’ – strengthening partnership working

We are a partnership-based organisation and therefore need to work collaboratively with a long list of stakeholders, delivery partners, planning bodies and the private sector in order to see our ideas and priorities realised.

Enabling a strong, unified voice

We have been championing the Midlands for over six years. We have secured over £40 million in development funding to progress our priorities and, thanks to our partnership, have become a critical part of the regional landscape.

In December 2021, we signed a ‘collaboration agreement’ with the DfT that sets out how we will bring the region together to act as a strong, unified voice. This ‘one voice’ approach enables us to act as a bridge between government, national delivery agencies and local bodies.

The collaboration agreement is built around four key areas, setting out the role of Midlands Connect, our partners, central government and national bodies in delivering each of these. The four key areas of the agreement are:

Developing and maintaining a Strategic Transport Plan for the region: refreshing our Strategic Transport Plan and producing annual business plans and annual reports to outline progress

Road investment: (i) contributing to the Road Investment Strategy (RIS) process and prioritising strategic road priorities for the Midlands, (ii) managing a regional evidence base and prioritising a Major Roads Fund programme for the Midlands

Rail investment: (i) developing, prioritising and accelerating a strategic rail network enhancement pipeline for the Midlands, (ii) integrating regional rail networks into HS2 to maximise the positive impacts of the new high-speed railway

Supporting government (DfT) to tackle larger strategic challenges, including freight, decarbonisation, rural connectivity, Covid-19 recovery, electric vehicles, buses and local authority transport capability/capacity.

This collaboration agreement is an important step in our evolution, signifying to government that we, as a partnership, are a maturing organisation who can work with the government to ensure that we are not only a part of the decisions that are made, but that we have a key role in the way transport infrastructure is developed and delivered across the region.



The region working as one

There are many different organisations that have a role in planning for the needs of our businesses and people. We need to work beyond transport to solidify our ‘one Midlands’ approach to planning infrastructure, services and policies that support low-carbon and inclusive growth.

The relationship between Midlands Connect and Midlands Engine enables our region to speak with ‘one voice’. The two organisations work hand-in-hand, along with the support of our wider partnership, to present evidence to our partnership boards on the economic, social, environmental and transport needs of the Midlands.

Midlands Engine has a pan-Midlands focus on economy, skills, energy and health, topics that were captured in its recent Independent Economic Review¹⁰⁷ and Green Growth Action Plan.¹⁰⁸ These aspects of peoples’ lives drive the need to travel or connect digitally, which in turn drives demand for transport.

Figure 49 also shows the relationship with our local enterprise partnerships (LEPs) and local authorities

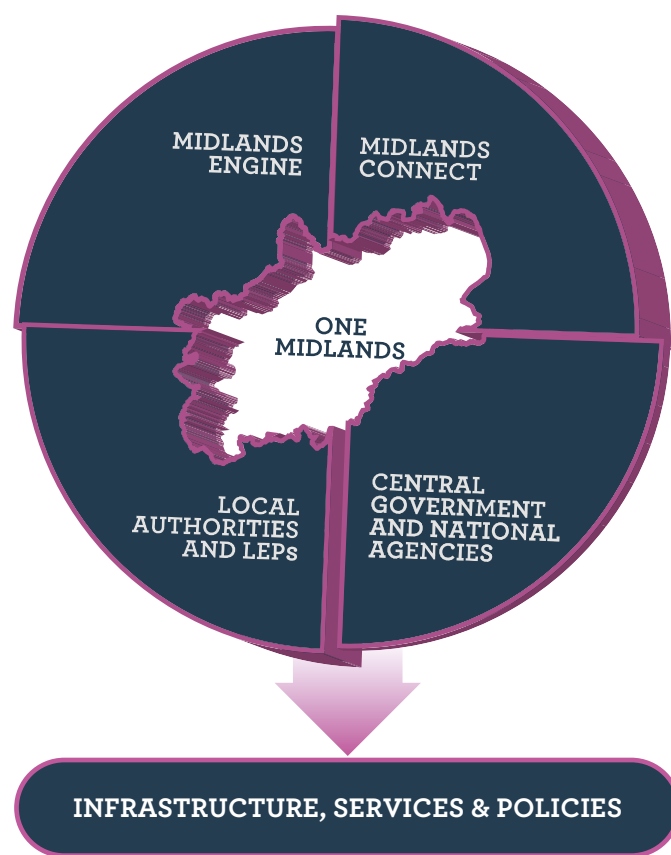


Figure 49: Our ‘One Midlands’ approach, aligning national, regional, and local bodies to achieve common outcomes

who are responsible for the detailed planning, implementation and realisation of outcomes at a local level. The overlap with Midlands Engine and Midlands Connect provides the space for regional collaboration and speaking with ‘one voice’ as ‘one Midlands’.

In this collaboration space, we will create a central evidence base which can be used by all authorities. In doing so, we can establish core scenarios for economic growth and travel choices that will help understand the demand for travel.

Strengthening our ‘one Midlands’ approach

As we move beyond the publication of this plan, we will continue the conversation on how we can further strengthen our ‘one Midlands’ approach, ensuring that we maximise the prosperity gained and that this is truly shared across our whole region. This is work in progress, but initial thinking is that this will focus on:

- Understanding how the region can plan together and share resources, research and innovation to develop a blueprint for the future transport system
- Agreeing funding priorities through place-based, rather than mode-based, thinking
- Identifying and establishing shared digital systems across the region that will provide easy access to central information and allow all participants to share resources, research and innovation
- Working with relevant partners to understand if and how devolution proposals could affect how our partnership works.

Whilst considering the technical requirements for all these ideas, we are also looking into the governance that will be required to make this work.

Commitments: We will continue to work with Midlands Engine and the Observatory and our partners to **share resources, research, innovation and digital systems** to maximise opportunities for achieving the outcomes the region needs.

6.3 More effective decision-making

In committing to progress, we want to enable and ensure more effective decision-making. This will be key if we are to improve and accelerate delivery.

Better business cases: reflecting our grand challenges and objectives

The government published an updated Green Book following a comprehensive review process in December 2020.¹⁰⁹ This seeks to rebalance an appraisal process that many believe has frequently relied too heavily on the benefit-cost ratio, to the exclusion of the development of a robust and well-evidenced strategic case and understanding of wider quantitative and qualitative benefits.

The Treasury Green Book talks of the UK entering an era of renewed emphasis on the appraisal of options during the business case process. This will help maximise value for money whilst delivering benefits across the societal, environmental and economic outcomes vital to the region and the country.

Our business case evidence mostly supports the early decision-making stages - stages which are predominantly focused on the Green Book’s strategic and economic cases. We have therefore welcomed government’s review of the Green Book and the re-positioning of this at the forefront of the UK appraisal process. We welcome the increased focus on key policy areas for all business cases, in particular on:

- Levelling up
- Place-based affects, including greater emphasis on business cases to be explicit in how the proposed intervention relates to local and regional economic, social and environmental conditions
- The contribution to net zero carbon emissions targets
- The consideration of equalities and distributional affects.

We also welcome the move to ensure that the previously prominent benefit cost ratio is now part of a broader-based mix of assessment measures.

We have recognised strengths in articulating the strategic case for our infrastructure proposals. We were praised by the Infrastructure and Projects Authority (IPA) for our work in developing and setting out the strategic case in the Strategic Outline Business Case for Midlands Rail Hub (which has now successfully moved forward to Outline Business Case stage).

We plan to establish and lead a regional Business Case Centre of Excellence. This Centre of Excellence (CoE) will focus on providing learning and guidance materials on the business case development process for the whole region to benefit from. It will also focus on identifying a consistent and regional response to the Green Book review challenge of improving strategic case making and focusing on place-based outcomes. We will launch our Midlands Business Case CoE in summer 2022.

We also want to seek greater guidance from government on the business case analysis required by specific schemes, particularly those at earlier stages of the scheme development life cycle. The costs and resources required to develop early-stage Strategic Outline Business Cases are often a barrier to scheme conception and development. It is also a problem exacerbated by funding challenges faced by many local authorities in recent times. There is a danger that the pendulum may have swung too far towards a degree of excessive detail that isn’t always proportionate to the scale of costs of the intervention proposed and may be hampering the development of the infrastructure pipeline.

That said, ensuring business cases are based on good quality evidence and are adequately assured, is crucial. As a Sub-national Transport Body, we recognise that we are well placed to provide that function.

107. Midlands Engine Independent Economic Review, Midlands Engine, 2020

108. Ten Point Plan for Green Growth in the Midlands Engine, Midlands Engine, 2021

109. The Green Book (2020), HM Treasury, 2020

Better use of data

Good decision making is built on clear and accessible data. Our traditional role has been to develop a strong understanding of current conditions and then explore possible future conditions – relating both to the nature of the problems strategic infrastructure can help solve and the performance of the existing infrastructure in place. We then appraise strategic transport infrastructure investment options against this information.

There are many well-defined and well-maintained datasets available to underpin our approach, but to improve the decisions we make and to support the development of stronger strategic and economic cases, we must unite our data across the region and acknowledge our current low levels of data interoperability. This mirrors government aspirations set out in both the National Infrastructure Strategy and the Net Zero Strategy. In the latter, government sets out its aim to reduce the barriers to data sharing across the transport sector, stating that “better data can provide new policy and operational insights, drive new products and services and ‘nudge’ people towards lower emission journeys.”¹¹⁰

Improved access to well-maintained data will allow us to strengthen our traditional role with more up to date, more robust and higher quality data and planning tools that can be created and maintained much more efficiently.

We will do this by:

- Better documenting the data we use in appraising our infrastructure investment options and introducing a regional ‘data dictionary’ that provides a description of every data set that we use
- Developing more co-ordinated systems to make data more accessible and understood. We will work with the Midlands Engine Observatory to develop a digital regional data sharing system that provides an open, transparent system for all to use and access.

The improved quality of the data available and improved access to it will enable the exchange of data across partners, infrastructure owners and cross-sector operations, making it easier to tackle cross-sector infrastructure issues such as climate change and levelling up.

IPA PROJECT SCORECARD

The Infrastructure and Projects Authority (IPA) has been developing a new project scorecard. This will seek to identify from the outset how projects will contribute to government’s priority outcomes across various departments and disciplines, rather than just those of the DfT. The intention is that it will give decision-makers better information about the extent to which different investment options deliver their objectives.

Liaising with the DfT and IPA, our Midlands Rail Hub project was used to trial and refine the project scorecard. The process looked at the degree to which our scheme was contributing to government priority outcomes such as prosperity, opportunity, environment, health, security and a global Britain. This was a useful exercise for us as well, and we have used the learning from this to refresh our Midlands Rail Hub strategic case to consider some of the other government department priorities contained in the project scorecard. This is being done as part of the Outline Business Case process for Midlands Rail Hub and we expect to apply this learning on other schemes in our rail portfolio.

Commitments: We will work with the Midlands Engine Observatory to develop a blueprint for a **digital regional data sharing system** that provides timely, accessible and high-quality data to underpin effective cross-sector decision-making.

Improving regional evidence in a more complex future

In this plan, we have outlined what we currently believe to be priorities for our strategic road and rail networks for the next 10-15 years. However, we also acknowledge that the medium and longer-term will change and we need to be constantly improving our evidence and knowledge of how this affects our connectivity needs. In seeking to develop our evidence in the face of greater uncertainty, we will focus on four distinct areas of activity:

Understanding future travel demand: what the economy and associated skills and labour markets might look like in the future, where people and businesses might locate and the impacts of digital connectivity.

Improving the supply of infrastructure and connectivity solutions to meet future demand: how to accelerate the delivery of infrastructure and connectivity priorities in the region.

Better understanding behavioural impacts: increased understanding of the impacts of new ways to connect and how we and partners can steer behaviours to meet our strategic objectives.

Monitoring progress and taking action: developing robust and trusted evidence on our progress against our objectives.

Commitments: During 2022, we will establish the **Midlands Analytical Framework** to help update our evidence base to account for recent changes to our economy and travel needs, and to better support our partners.



Monitoring and evaluation

From 2022, we will establish a monitoring programme and set of analytical tools which will help understand the overall trajectory of the region towards objectives we have set out in this plan. We will work with the Midlands Engine Observatory to develop a Midlands Analytical Framework and forum to monitor how the region is travelling along a set of trajectories that will be set for all our objectives, alongside other important trajectories that provide an indication of the region's overall health (jobs, productivity, growth, housing delivery, levelling up, economic recovery and carbon emissions).

By monitoring these important metrics, we can work with all parties to ensure that our strategies and policies are taking the region in the right direction. From a transport perspective, by tracking the region's performance against key metrics, we can ascertain whether our approach, or that of our local and national partners, to transport and connectivity needs to change.

A concept model of how we will link our performance indicators to our objectives is shown in Figure 50.

In 2022-2023, we will work with the Midlands Engine Observatory to scope out a full programme of monitoring for our plan.

Part of this work will need to recognise the continually changing future likely to unfold. It will therefore be vital that we continually develop our data, monitoring and plans, so they always remain relevant.

Using data from the monitoring plan and recognising this ever-changing future, we may need to update our delivery plan, at least every three years, to ensure we remain on track to deliver the right outcomes considering wider changes in the economy and how we are progressing towards net-zero carbon emissions.

Commitments: We will work with Midlands Engine Observatory to develop a regional **Monitoring and Evaluation Plan** by spring 2023.



Figure 50: Our grand challenges, objectives and key performance indicators

6.4 How our priorities get funded

Our role is to prioritise the region's investment needs for strategically significant infrastructure. Our priorities will be funded by the national funding pots made available by government for that infrastructure:

- **Road Investment Period funding**, which runs in five-year cycles. We're currently in Investment Period 2 (2020-2025)
- **Rail Control Period funding**, which also runs in five-year cycles. We're currently in Control Period 6 (2019-2024)
- **Major Road Network (MRN) funding**. This was originally announced in 2019 and we are currently in MRN period 1. Whilst not explicitly stated by government, we assume that this will move towards five-year cycles of funding. We are working on the assumption that MRN2 will start in 2025.

There are other funding avenues through which some of our priorities may be at least part-funded. These include, but are not limited to:

- **The Housing Infrastructure Fund (HIF)**: a fund from the Ministry of Housing, Cities and Local Government (MHCLG - now the Department for Levelling Up, Housing and Communities) allocated to infrastructure which facilitates the delivery of significant housing sites. Some of our road and rail schemes could be eligible
- **Private sector developer funding**: where our infrastructure priorities help to deliver major developments, part of the funding could be sought from developers who will benefit from sites being released
- **Local government match funding**: where our priorities help meet local objectives, some authorities may be able to allocate some of their own capital funding to help deliver them
- **Local growth funding**: funding given to local enterprise partnerships to distribute to their priority schemes and initiatives to help deliver local growth plans. Where regional and local aspirations overlap, there could be opportunities to co-invest

- **Levelling up funding**: similar in concept to the local growth funding described above, this 'new' pot of government funding is used to invest in local priorities that support town centre and high street regeneration, local transport projects and cultural and heritage assets. It can be combined with other funding opportunities to progress co-investment opportunities. It looks likely that the levelling up fund will phase in as the local growth fund phases out
- **Funding from land value uplift**: although unlikely to be applicable to many of our priorities, this is a mechanism by which some of the value of privately held land which has gone up in value as a direct result of public sector investment can be leveraged to part fund a scheme(s).

Given the nature of the priorities and projects we are considering, the vast majority of funding will need to come from central government pots already identified. To some degree our region is therefore in competition with other regions to demonstrate the case for investment in our strategic transport infrastructure priorities.



How much national funding might be available?

With potential funding challenges nationally post Covid-19, uncertainty around funding is likely to have a significant impact on the region's ability to deliver a step-change in improved connectivity. As part of this plan, we've tried to consider how much funding might be available to deliver our priorities.

The National Infrastructure Commission's (NIC) National Infrastructure Assessment has recommended that funding for infrastructure is set at 1-1.2% of the UK's Gross Domestic Product (GDP) for certain types of infrastructure, with transport making up over 90% of that fiscal remit.¹¹¹

If we use the NIC's methodology and a forecast of the UK's GDP¹¹² then we can estimate how much funding might be spent on all transport infrastructure in the region. In doing so, we have considered three scenarios:

1. A continuation of historical spend in the region
2. A forecast based on 1.2% of the region's GVA
3. A forecast based on 1.2% of the UK's GDP but distributed using the Midlands' proportion of the national population.

According to this methodology, the Midlands has historically received higher levels of funding (Scenario 1) than if our 'share' were calculated according to 1.2% of our regional economic output (Scenario 2). If we are to simply split an overall national figure according to our proportion of the national population however, (Scenario 3) our share of funding for infrastructure would be almost 20% higher than historical spend allocations.

This tells us two things:

- Firstly, it highlights the productivity gap of the Midlands compared to the national average. If the Midlands economy was equivalent to the national average then funding available under Scenario 2 would be similar to Scenario 3
- Secondly, that infrastructure spending in the region has historically been lower if a comparison is made between what we might expect to receive if simply distributing a national spending figure by share of the population. This is mirrored by earlier discussions about how the region has historically received a lower transport spend per head than many other parts of the country.



Scenario	2020-2025	2025-2030	2030-2035
1	~£17.7bn	~£21.8bn	~£26.8bn
2	~£14.5bn	~£16.7bn	~£19.6bn
3	~£21.2bn	~£26.4bn	~£32.8bn

Table 5: Estimated funding availability for transport (incl. maintenance) in the Midlands under three scenarios

How much funding might be available for strategic roads and rail?

The NIC's remit covers many areas, including but not limited to:

- Local transport investment (e.g. local transport plan interventions)
- Devolved funding (e.g. Combined Authority Devo-Deals)
- National Highways RIS funding (including maintenance)
- Strategic Rail Funding (including maintenance)
- 'Mega-projects', such as HS2 and Crossrail.

Forecasting how much money might be available for the region's strategic road and rail priorities is therefore not as simple as saying all of the funds in Table 5 above would be available for our remit.

To estimate what is available to cover the projects in our remit, we can look back historically on what

proportion of funding for strategic roads and rail has come to the Midlands.

Our research suggests that, on average, the Midlands receives around 16% of national strategic roads funding and 12% of available national rail funding. It is worth noting that the Midlands contains approximately 19% of England's population and over 20% of the SRN. This again suggests that the Midlands has received lower funding when it comes to strategic transport infrastructure investment.

Tables 6 to 8 compare what the Midlands might expect from strategic road and rail funding over the next 15 years. Table 6 sets out the England position, with Tables 7 and 8 looking at two scenarios of what might be spent in the Midlands.

We have compared the historical proportion spent in the Midlands to an illustrative 'levelled up' amount where we have assumed the Midlands could receive 19% of National Highways funding and 16% of Network Rail funding. This is based on the Midlands having 19% of England's population and 16% of the UK's population.

	2020-2025	2025-2030	2030-2035
Network Rail funding	~£33.2bn	~£36.5bn	~£69.8bn**
National Highways funding	~£27.4bn	~£19.3bn*	

Table 6: Estimated total potential funding availability for National Highways and Network Rail portfolios (incl. maintenance) in the UK

	2020-2025	2025-2030	2030-2035
Network Rail funding	~£3.9bn	~£4.3bn	~£9.4bn**
National Highways funding	~£4.4bn	~£3.1bn*	

Table 7: Estimated potential availability for strategic road and rail transport infrastructure (incl. maintenance) in the Midlands based on continuation of historical spend.

	2020-2025	2025-2030	2030-2035
Network Rail funding	~£5.3bn	~£5.8bn	~£11.2bn**
National Highways funding	~£5.2bn	~£3.7bn*	

Table 8: Estimated potential funding availability for strategic road and rail transport infrastructure (incl. maintenance) in the Midlands based on 19% of National Highways funds and 16% of Network Rail funding being spent in the Midlands

* Reflects that funding for strategic roads is reduced in the RIS3 period in the NIC's National Infrastructure Assessment.

** Reflects that the NIC's recommendation is for strategic road and rail funding to be merged from 2030.

It should be noted that these are not official government figures; we have derived them purely for illustrative purposes, using information on previous funding to the region under these headings and then extrapolating that trend out into the future. To ascertain an estimated overall future 'pot' we have used the NIC's assumptions for available funding¹¹³ under these headings as presented in the National Infrastructure Assessment.¹¹⁴

The purpose of this exercise is not to generate a precise figure expected from government. Instead, it gives us a high-level estimate of whether our priorities outlined earlier are affordable under a number of assumptions for the fiscal boundaries we might be operating within. Over the next 12 to 18 months, we will continue to work up the detail on our prioritised infrastructure needs. We will develop high-level cost estimates and compare them to a reasonable, but ambitious, level of funding for the region. This will form the basis of our engagement with the DfT as to how many of our priorities are affordable and how quickly they will be delivered.

How can we bring in private sector funding?

Traditionally, private sector involvement in funding new transport infrastructure has seen developers paying a contribution towards road or rail schemes which directly relate to housing or employment sites. There have also been forays into areas of land value uplift, where landowners are asked to contribute to funding a scheme based on the change in value of their land once the scheme is delivered. However, more thought now needs to be given to leveraging private investment in public infrastructure. There is increasing pressure on public finances, but at the same time there are private investors searching for long-term, relatively low risk investments. The challenge for the public sector is therefore to find the projects and programmes which can be packaged as the right mix of risk and return to encourage private sector investment.

This is not easy for the majority of our core remit. The road and rail infrastructure that we research, develop and recommend predominantly generates exchequer

returns for the government. For example, raising productivity as a result of improved connectivity leads to higher tax income, as opposed to any direct business 'bottom-line' returns which can be leveraged against for the initial capital investment.

That said, local authorities need to look increasingly towards private sector funding to deliver on their objectives. How we can gain private sector support to help decarbonise the transport network will be key. As an example, there are emerging investment opportunities under the term 'green finance', which involves investing in areas which support the environment and combatting climate change. It may be possible to package the delivery of electric vehicle charging infrastructure or new refuelling infrastructure for hydrogen, or biofuels for freight vehicles and seek private sector investment. In some cases, it may also be possible to explore other forms of financing for public transport, such as mass transit schemes. Local authorities will also need to increasingly think 'out of the box' for delivering and funding public transport, particularly in rural areas. There will need to be new solutions found and new commercial models used to fund them.

We will work with our partners to research new investment opportunities, looking at worldwide evidence and best practice, also talking to investors as part of efforts to bring new ideas forward. This aligns well with government commitments in the Levelling Up White Paper to increase domestic public investment in research and development outside the South-East by 40% and to leverage more private sector investment to stimulate innovation and productivity growth.¹¹⁵

Commitment: we will develop a high-level funding and finance plan to accompany this Strategic Transport Plan. This plan will highlight where we believe funding may come from (both public and private) to deliver the priorities set out in this document. This funding plan will be published in early 2023.

6.5 Place-based planning and investment

Our partnership recognises that the country is in fiscally challenging times. Whilst we want to demonstrate ambition for our region, that cannot simply be by producing a long wish-list of major infrastructure asks or a series of 'mega-projects' that we want to get funded. We are being ambitious without seeking unrealistic levels of investment.

Our main ambition is therefore to firstly get the right infrastructure funded and built, to meet the current and longer-term social, environmental and economic growth agendas of our partnership. Secondly, we want to bring together different pots of government and private sector funding to deliver more holistic outcomes in specific geographies.

Delivery of this second ambition would tie in with government aspirations discussed earlier around ensuring project business cases better consider place-based affects and identify from the outset how projects will contribute to the delivery of wider government outcomes, rather than just those of the DfT.

Section 6.4 describes how major transport infrastructure funding in this country is largely

allocated to specific national agencies, such as National Highways or Network Rail, and is therefore largely focussed on benefits relating to their respective functions. For example, as described above, funding to invest in the SRN is allocated to National Highways, is spent mainly on that network and is seeking transport benefits, such as improving safety and enabling fast and reliable journeys and network resilience, alongside the wider goal of better environmental outcomes. Whilst there are more indirect benefits, such as improved productivity for businesses and reduced carbon emissions for example, their funding is not necessarily targeted at schemes with these wider outcomes at the heart of what they want to achieve.

In a related issue, funding to different government departments is often siloed and rarely brought together to achieve multiplier effects and enhanced outcomes. The government's Levelling Up White Paper recognises this, highlighting the need to streamline the patchwork of funding and remove competition from the process of attracting government funding.



Place-based planning and investment: economic corridors

Over the past two years, we have been exploring the concept of how a multi-layered government approach to planning and delivery could result in improved outcomes around economic prosperity, levelling up and decarbonisation. We have scoped this concept towards something we've termed 'economic corridors'. More recently, we have teamed up with the Midlands Engine to bring this idea to fruition.

Our starting point is that we'd like to see more government funding joined-up to achieve place-based outcomes, using major infrastructure as a catalyst to do this. We believe a new approach to planning in such economic corridors, something we're terming 'Productivity Growth Plans (PGPs)', will help direct local and national government funding, as well as the private sector towards common, place-based outcomes over large corridor geographies. The PGP concept is outlined in Figure 51.

By planning in this way and then using major infrastructure investment as the catalyst, we can better achieve both our strategic transport objectives and crucially, infrastructure funding can achieve much more than direct transport outcomes, contributing positively to wider agendas, including a green recovery and growth.

We believe this also presents an opportunity to better join-up a number of funding pots that exist both within the transport agenda and with others more broadly across government departments. A PGP might come together in a way outlined in Figure 52.

The ask of government is to work with us and to be a collaborating partner in the development of these new plans. This will involve a commitment to understand and work with the partners involved on a delivery plan for the strategic infrastructure requirements needed to take advantage of the growth opportunities afforded by the corridors. It may also be necessary to consider new powers to enable the full benefits to be realised.

This approach is not just about longer-term planning - it needs to show merit quickly. For this reason, we are specifically looking for 'quick win' outputs. These are likely to be where there is already commitment to new or improved infrastructure. In these cases, we will work with local partners to accelerate complementary programmes that will add and maximise benefits, contributing to the short-term economic recovery as part of long-term economic resilience planning.

Working with the Midlands Engine we have identified two important economic corridors (the A50/500 and the A46) where we believe this PGP approach, or something similar, could be a catalyst for business growth, boosting productivity and supporting the development of new housing and export markets.

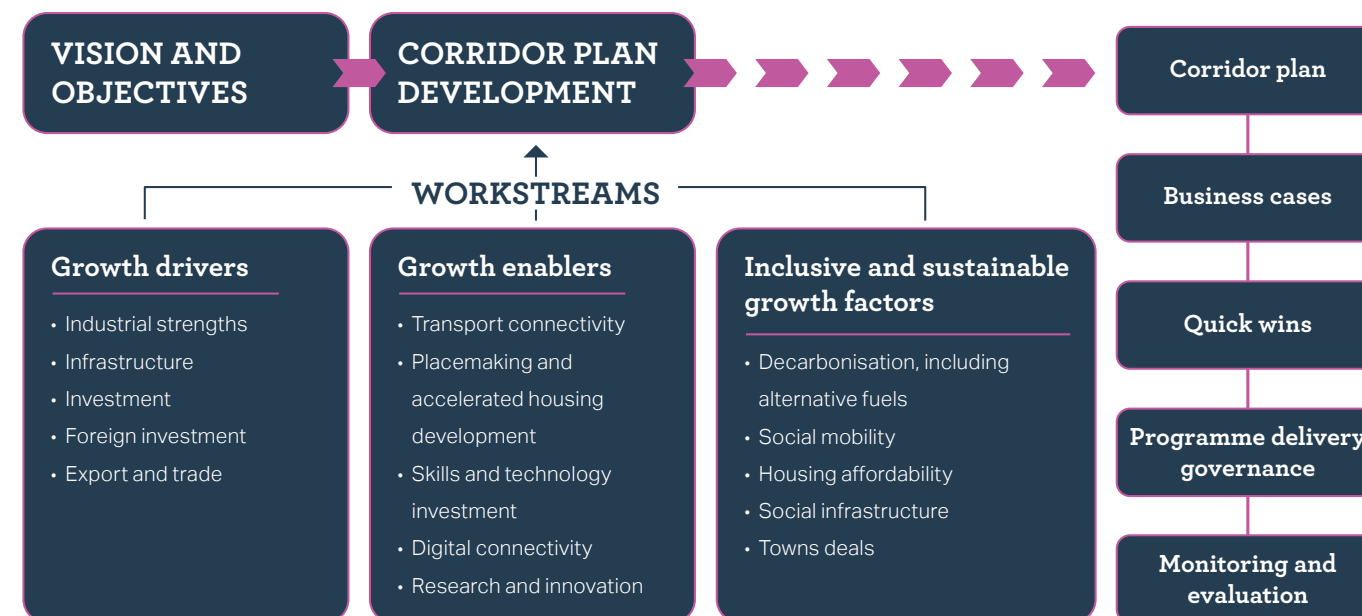


Figure 52: The components of a Productivity Growth Plan

A50/500 Corridor

Stretching from Crewe to the Humber ports, the A50/A500 is a nationally significant manufacturing corridor, home to global firms like Toyota, JCB, Rolls Royce, Alstom, Nestle, AstraZeneca, Bentley, Michelin and Pirelli, as well as Stoke-on-Trent's world-renowned ceramics industry. Targeted interventions to improve reliability and shorten journey times on the route could support the creation of thousands of new jobs and homes.

Trans-Midlands Trade Corridor (the A46)

Stretching over 150 miles across central England, the Trans Midlands Trade Corridor (TMTc) is one the country's most important geographies for trade, where almost a quarter of the UK's goods and services created are exported. It connects major towns and cities including Tewkesbury, Stratford-upon-Avon, Coventry, Leicester, Nottingham, Lincoln, Grimsby and Hull, as well as providing connections to the Bristol and Humber Ports and East Midlands Airport.

The TMTc is home to a number of globally-significant sector clusters, including battery technology in Warwickshire, Leamington's 'Silicon Spa', food production in Worcestershire and Lincolnshire, life sciences in Nottinghamshire, renewable energy on the Humber and world-class manufacturing facilities across the corridor, including textiles in Leicester and automotive in Coventry.

There are opportunities to invest in the strategic road or rail infrastructure in the TMTc and use this as a catalyst for new growth and levelling up opportunities.



The plan must identify the coordinated infrastructure planning and investment required to deliver the vision of the corridor. It must deliver incremental value over and above existing planning taking place along the corridor and align with recent updates to the Green Book approach.



The PGP would bring together skills, training, trade links, technology and innovation, placemaking and availability of housing and commercial land to ensure current and future transport capacity is utilised most effectively.

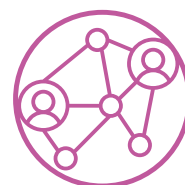


The plan will need to pull together a framework of measures that drive growth and identify the most pressing needs in different locations along the corridor.

As well as contributing to post-COVID recovery, net zero and rebalancing the economy, this will deliver levelling up within the region such that all parts of the corridor can benefit from the conditions required to deliver growth.



The plan will also need to adapt to changing policy priorities and serve as a means of responding to emerging funding envelopes by coordinating, prioritising and packaging interventions that are the most appropriate response.



In order to achieve this, the plan will need to enable local collaboration between planning authorities across sectors and administrative boundaries to engage in ambitious, long-term and strategic planning that builds on existing local plans and strategies.

Figure 51: Place-based planning across economic corridors

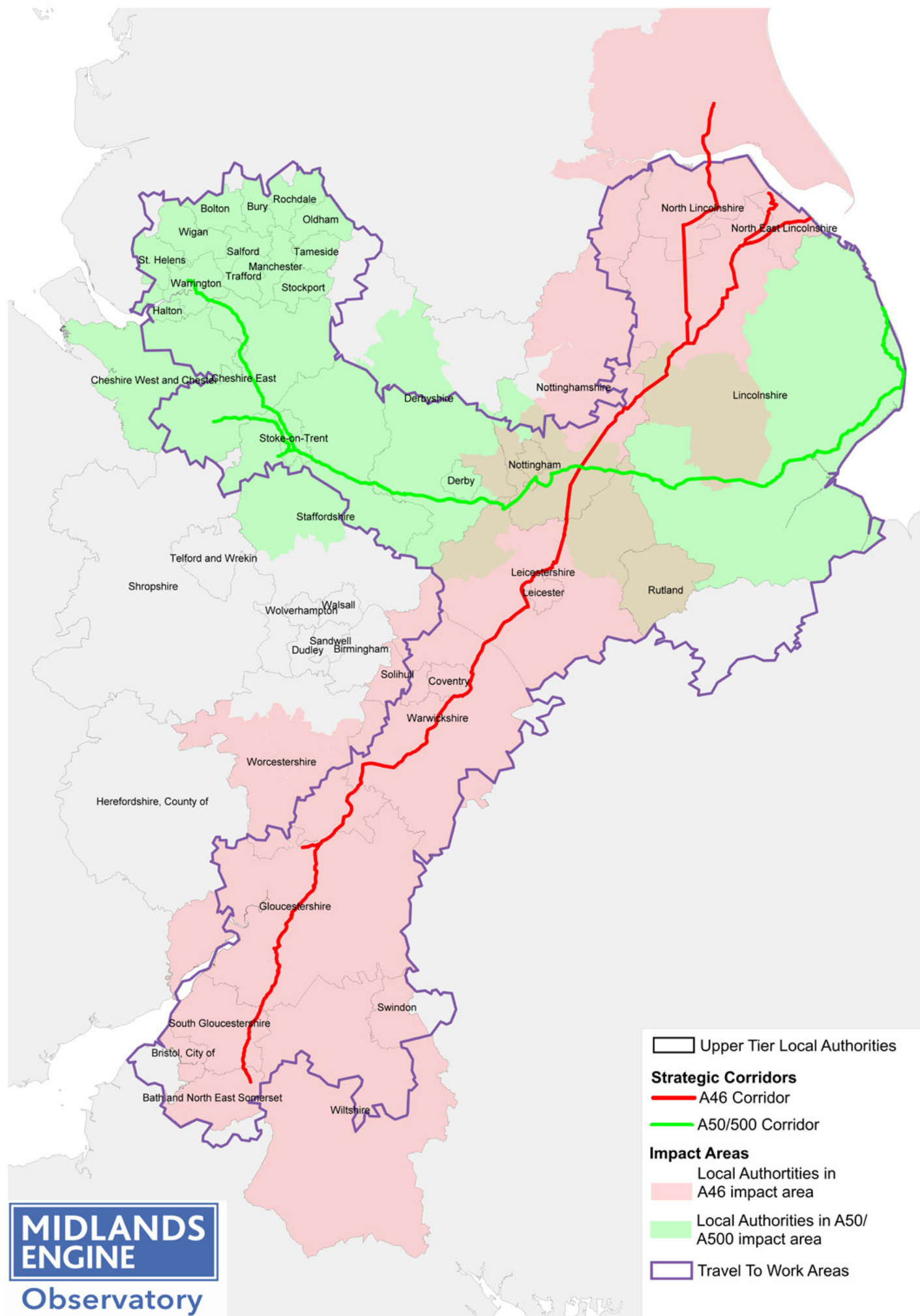


Figure 53: Our nationally significant economic corridors

Going forward

In conjunction with the Midlands Engine we believe the best way to realise the potential of these two corridors is to establish ambitious productivity plans which deliver benefits across innovation, skills and infrastructure.

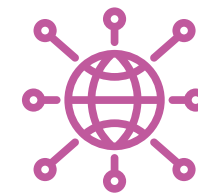
These corridors will reinforce existing links between cities and forge stronger connections between our towns. Our focus on these corridors, including the powerful intersection between them, will drive collaborative, cross boundary planning at scale and be the catalyst for a green-based accelerated renewal of our Midlands economy. The work will deliver these government priorities:



Levelling up: focus on the sector strengths of each corridor, maximising the potential from current and pending investment (Towns Deals, future high streets and transport improvements, potentially future County Deals), boosting growth and productivity across and beyond the Midlands.



Green growth: delivering on government's net zero carbon target by linking a number of strands together, from planning for transport and land use, to infrastructure delivery to rapidly reduce carbon emissions and accelerate the decarbonisation of industry in the Midlands.



National digital strategy: accelerating targeted delivery that is aligned with wider Midlands Engine programmes to enable improved digital connectivity to more communities and businesses.



International trade: integrating actions with Midlands Engine's internationalisation focus. Potentially linked to: freeports designation within the Midlands; access to Immingham and Humber ports; and improving capacity to non-EU markets through both Birmingham and East Midlands airports and towards ports like Felixstowe, Holyhead, Bristol and Southampton.



Housing delivery and place-making: creating an environment within which sub-regional housing needs and delivery can be neutrally assessed and provide the government with confidence in the ability within these corridors to meet housing demand, in line with forecast population growth.



Transport Decarbonisation Plan: taking a co-ordinated, cross-modal approach to deliver the transport sector's contribution to net zero carbon.

6.6 Transforming capability and capacity

Local authorities have experienced significant cutbacks in resources over the past decade, leaving some with constraints in their ability to bring forward significant capital schemes. This was evident in the Midlands when the Major Road Network and Large Local Major Scheme (MRN and LLM) prioritisation process was undertaken in 2019. Overall, there was a shortage of schemes being developed across the region. In addition, some parts of the region brought forward more schemes than others.

During 2020, we worked with local authority partners to examine how they felt about their internal capacity and capability. This focused firstly on the lifecycle of scheme development (from the initial idea through business case development to delivery) and secondly on areas of future transport technology and mobility.

Whilst results varied, with some authorities feeling that in general they were well resourced and others really struggling, there were a number of common themes regarding the existing capability and capacity in the region across the two areas of focus. These were:

Scheme development

Key themes:

- Lack of revenue funding undermines capacity to bring forward new plans
- Lack of capacity in local authority teams, even where capability is strong
- Industry shortage in planners and engineers with the public sector often finding it difficult to compete with the private sector for talent
- Lack of pipeline of opportunities due to historic lack of funding
- Uncertainty about what the 'post Covid-19' world looks like and a concern about planning for the right types of infrastructure.

“To build better, greener and faster, the government needs to drive a step change in capability... the government needs to equip those accountable for the success of projects with the skills and tools they need.”

National Infrastructure Strategy, NIC, 2020.

Transport technology and future mobility

Key themes:

- Generating new ideas and ways of working can be difficult, often those with the right 'disrupting' mindset are in the private sector
- Difficult to develop 'proof of concepts' with the lack of revenue funding available
- The technologies deemed to be of most importance were around alternative fuels and electric vehicle charging. More expertise in these areas is needed
- Difficulty in knowing which 'horse to back' can lead to a cautious approach to developing transport technology schemes
- Not having any expertise in-house can result in an authority not being a 'good client' even when work is procured externally.

Progressing regional collaboration

Our findings on capacity and capability were well received across the partnership. Since then, we have been developing ideas on how the region can collaborate to share expertise and improve how all authorities ensure they have the necessary capability and capacity to develop and deliver the right transport schemes for the region. There is the potential for a programme of different approaches that will add real value to the region.

Given that working pan-regionally will be new to all parties, two principles will underpin our approach to taking this work forward:

- We will be agile: we will develop and test ideas and update our approach as we learn what works best
- We will be measured: recognising the constraints and pressures on available staff time, we will gradually develop and test what we can do incrementally and build a programme across several years.

Our three initial areas of focus are below. These include centres of excellence, graduate development and kick-starting the ideas process.

Centres of excellence

We will seek to establish a small number of regional centres of excellence around different topic areas and tailor the service they provide to the needs of our local authority partners. These centres will focus on sharing knowledge, best practice, skills and capacity.

Topics:

- We will lead and establish a business case centre of excellence, focusing in particular on responding to the recent Green Book review challenge of improving strategic case making and focusing on place-based solutions
- We want to encourage and support a local authority led centre of excellence around one or more areas of new technology and future mobility opportunities

- We will establish strong collaboration regionally on the key issue of 'decarbonisation', pulling in all relevant parties and developing local and regional pathways.

Our centre of excellence concept is shown in Figure 54. We will work with government and partners to progress this concept.





Figure 54: Midlands Connect Centre of Excellence model

Graduate development

During our review of capacity and capability, many local authorities shared a concern that the public sector is struggling to offer new graduates sufficient ‘on the job’ training, partly due to a lack of access to new opportunities and partly because local authority teams have been pared back to the bare minimum. As a result, the amount of available time and internal expertise are reduced. We agreed with partners to explore how a regionally run programme could be introduced to bring together cohorts of graduates across the region to learn and develop in a more collaborative, manageable and resource-efficient way.

This could help to develop and accelerate the skills required by the transport and infrastructure sector in the region and retain more graduates within the public sector.

Kick-starting the ideas process

We will also build on our idea of allocating preparatory or ‘seed’ funding from our core funding budget to help authorities kick-start ideas they wouldn’t have done otherwise.

This has started with our work to prepare for a potential second round of government MRN funding. We have recently provided funding to Nottinghamshire and Derbyshire County Councils to test and progress our rural hub guidance and concept.

Commitments: We will....

- Establish a **regional transport decarbonisation forum** in 2022
- Launch our **business case centre of excellence** in summer 2022
- Support the establishment of a series of other **local authority-led centres of excellence** around rail, freight, technology, bus planning and future mobility opportunities. These centres of excellence will each come on stream during 2022
- Continue to **provide ‘seed’ funding** to help local authorities develop new transport intervention ideas that will achieve local, regional and national objectives.

Focusing on the wider skills base needed

We recognise that beyond our local authority partners, there are potential industrywide skills shortages in the full supply chain for the development and delivery of our infrastructure priorities for the Midlands. In particular, construction and engineering skills could be in short supply if there is not a widespread take up of Science, Technology, Engineering and Maths (STEM) subjects going forward. Investment in the skills of the regional workforce is needed now to enable projects such as HS2 and Midlands Rail Hub to support long-term growth, levelling up and decarbonisation.

Much of the work required to develop these skills in many of these areas are outside our partners’ direct control. However, we can help to identify, develop and manage a long-term pipeline of transport infrastructure investments. This will ensure that we, and the Midlands, can provide confidence to the industry that we can maintain and develop the skills required.

We will therefore work with Midlands Engine, government, national agencies, LEPs, industry groups and forums such as the Midlands Highways Alliance to ensure there is clarity on the infrastructure pipeline needed. We will also support collaboration and policy development at a national and local level to ensure we have the right people available to take forward our priorities.

A TRANSPORT DECARBONISATION FORUM FOR THE MIDLANDS

Our evidence on current transport carbon emissions in the Midlands shows the need to work together across our partnership if we are to decarbonise transport in the region. At the very least, our analysis estimated that 64% of 2019 road emissions from transport in the Midlands came from trips that crossed local authority boundaries, with an estimated 15% of emissions coming from journeys starting outside of the Midlands region. Many of the problems, and solutions, are therefore shared ones.

We are establishing a Midlands transport decarbonisation forum. This will focus on sharing ideas, information, best practice and guidance, providing the space for the region to collaborate on plans and policies to decarbonise transport.



7

What happens next



7. What happens next

This Strategic Transport Plan sets out our priorities for investing in the strategic rail and road networks in the Midlands. It also identifies the areas where we are leading and enabling regional collaboration and innovation in transport and how we are going to take these initiatives forward.

This plan is not our first or our final say on the strategic transport infrastructure needs of the region. Our first strategy was published in 2017 and started the journey - this plan continues it. The plan will be further enhanced by a series of publications over the next 12 months, setting out further details on key areas of our work. This will include, but not be limited to:

In the next three months:

- H2GV Midlands regional demonstrator and desktop study
- Rural mobility hubs guidance and toolkit

In the next six months:

- Regional transport technology route map and action plan

In the next 12 months:

- Regional transport decarbonisation policy toolkit
- Regional electric vehicle charging infrastructure plan
- Heavy goods vehicles recharging and refuelling network plan
- A programme business case for Midlands Engine Rail and our wider plan for improving rail and public transport in the region
- Our plan for developing the region's road network
- Regional monitoring and evaluation plan
- Freight route map and improvement plan
- Economic, environmental and social impacts appraisal of our Strategic Transport Plan
- Funding and finance plan for our strategic transport infrastructure priorities.

As already indicated, we will monitor how our travel needs are changing in response to issues such as climate change and technology. We will review and adapt this plan to ensure it is fit for purpose and ready to embrace new challenges and opportunities.





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