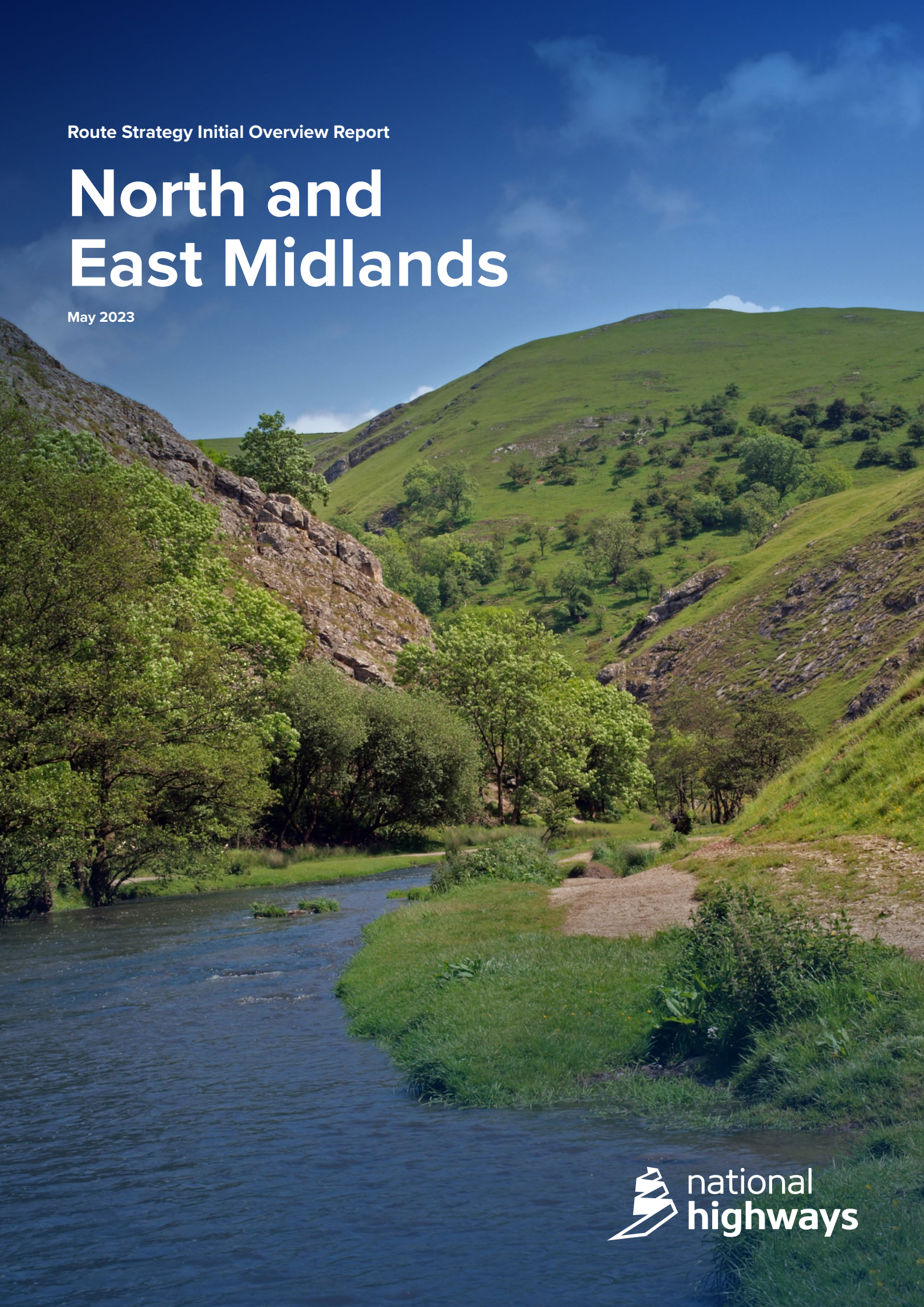
Route Strategy Initial Overview Report

North and East Midlands

May 2023



national highways

Contents

The routes

Routes

- London to Scotland West (North)
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- Felixstowe to Midlands
- Kent Corridors to M25
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Sub-national Transport Bodies

- England's Economic Heartland
- Midlands Connect
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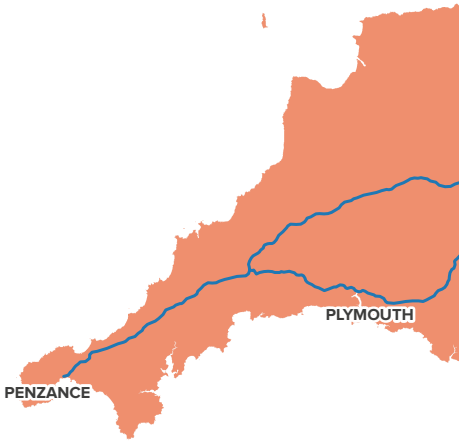
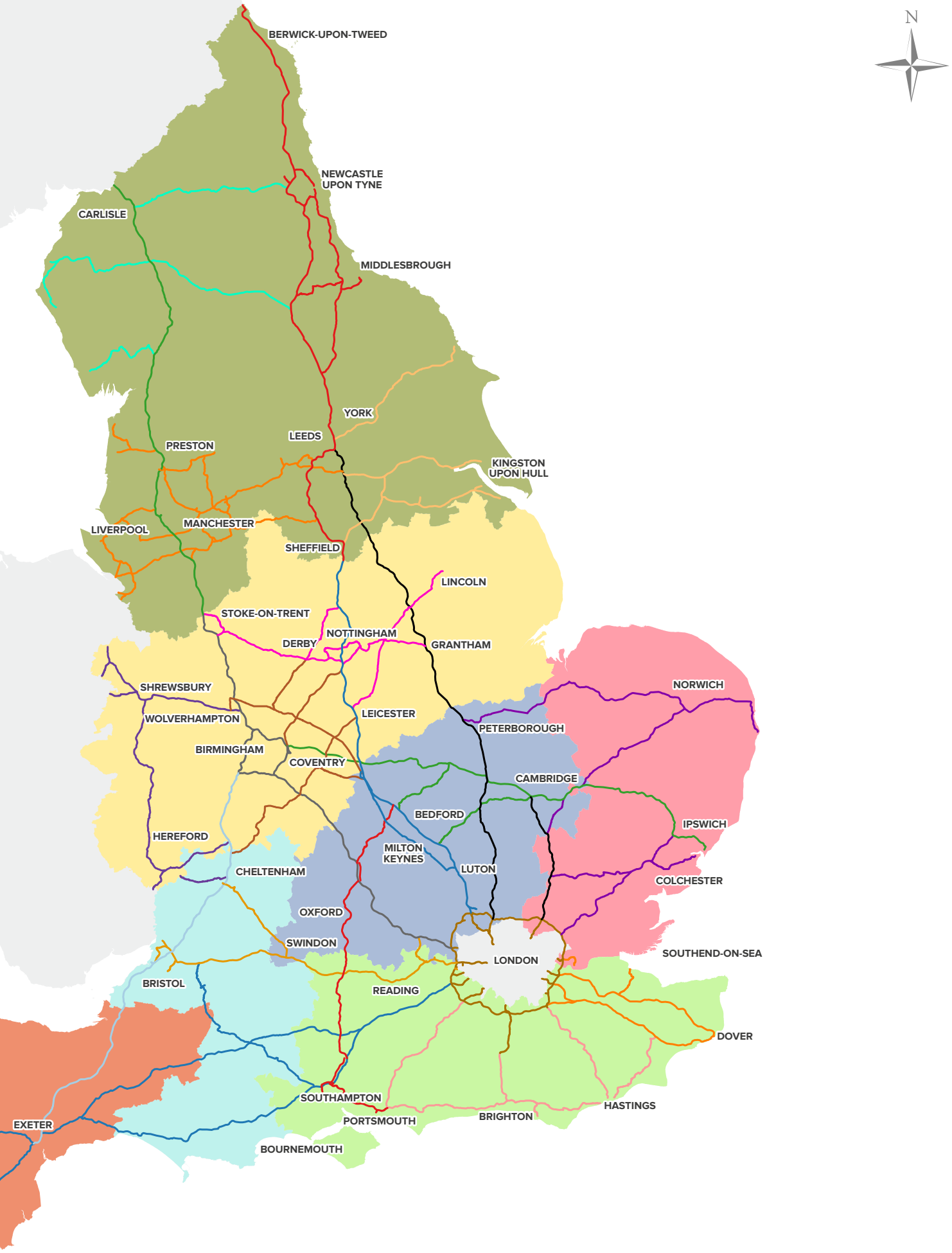
- Transport East
- Transport for the North
- Transport for the South East
- Western Gateway

There are 17 routes relating to route strategies across our strategic road network (SRN). To take better account of our customers' end-to-end journeys, we have split some of the longer routes into sub-strategies across 20 reports.




N
BERWICK-UPON-TWEED
NEWCASTLE UPON TYNE
CARLISLE
MIDDLESBROUGH
YORK
LEEDS
PRESTON
KINGSTON UPON HULL
LIVERPOOL
MANCHESTER
SHEFFIELD
LINCOLN
STOKE-ON-TRENT
NOTTINGHAM
DERBY
GRANTHAM
NORWICH
SHREWSBURY
WOLVERHAMPTON
LEICESTER
PETERBOROUGH
BIRMINGHAM
COVENTRY
CAMBRIDGE
BEDFORD
IPSWICH
HEREFORD
MILTON KEYNES
LUTON
CHELTENHAM
COLCHESTER
OXFORD
SWINDON
LONDON
SOUTHEND-ON-SEA
BRISTOL
READING
DOVER
SOUTHAMPTON
HASTINGS
BRIGHTON
PORTSMOUTH
EXETER
BOURNEMOUTH

Executive summary

Introduction

Our strategic road network (SRN) is the backbone of the country. More than 4,500 miles of motorways and major A-roads connect people, build communities, create opportunities and help the nation thrive. To plan for the future, we take a long-term view of our network and the trends that could impact transport, road travel, and personal and commercial mobility. Route strategies are at the centre of this dynamic future planning of our network, informing how we operate, maintain and renew our network. This report is the Initial overview report for the North and East Midlands route and summarises the outcomes of the route strategy. The report builds on the first two rounds of route strategies in 2015 and 2017. It aims to be more forward looking, integrated and collaborative, while being dynamic enough to respond to the future needs of our customers and neighbours.

In this report, we detail the route context, current constraints on the route, and opportunities for improved connections with local roads and rail links. We set out intelligence-led route objectives aligned with the Department for Transport's (DfT's) six strategic objectives. These objectives aim to ensure the route can serve its function, while mitigating the identified constraints and challenges. They conclude with locations for further consideration to achieve the route objectives. The route objectives and locations for further consideration will be presented to the Department for Transport to inform future decision-making about investment planning through the Road investment strategy (RIS). It should be recognised that not all aspirations outlined in this report can be funded or delivered.

DFT'S SIX STRATEGIC OBJECTIVES FOR THE STRATEGIC ROAD NETWORK

- Improving safety for all
- Network performance
- Improved environmental outcomes
- Growing the economy
- Managing and planning the SRN for the future
- A technology-enabled network

For clarity, this document does not:

- identify committed schemes for delivery as part of future RIS periods. This will be part of the wider RIS setting process
- commit to the delivery of local plans or economic growth developments mentioned
- guarantee funding for any locations identified for further studying to understand the challenges and issues in more detail
- preclude the inclusion of other locations for consideration in the light of other evidence or imperatives

Customers and neighbours

Engagement with our customers and neighbours has been central to developing our route strategies. We have already gathered a wealth of evidence from the previous rounds of route strategies and through our ongoing monitoring of road condition and performance.

Our performance is monitored through the National Highways' Performance Framework. This Performance Framework was established at the start of the second road period (2020 – 2025) and sets out National Highways' commitments to 2025. It is outlined in the RIS2 *Delivery plan (2020 - 2025)*[1]. We will continue this monitoring approach into the third road period (2025 – 2030).

To add to this existing evidence, we carried out a detailed engagement programme for this round of route strategies to understand the current and future needs of those using and living alongside the SRN.

The route

The North and East Midlands route, which includes approximately 175 miles of SRN, links Stoke-on-Trent, Derby, East Midlands Airport, Nottingham, Grantham, Leicester, Newark and Lincoln, through the counties of Staffordshire, Derbyshire, Nottinghamshire, Leicestershire and Lincolnshire. It is a key cross-country corridor linking the East and West Midlands. The route links the main arterial north-south routes to each other, namely the M6, M1 and A1.

This route strategy report can be read alongside other interacting route strategy reports, including:

- South Midlands
- London to Scotland East (South)
- London to Leeds

Challenges and issues

We have identified challenges and issues of those using the route and living alongside it. These correspond to the DfT's six strategic objectives, which are the strategic objectives for RIS3. They were agreed by National Highways and DfT, and are set out in the RIS3 *Planning ahead*[2] document in December 2021.

Improving safety for all

There are route sections which have low safety ratings from both International Road Assessment Programme (iRAP) and/or the Road Safety Foundation. The following sections of the route have the lowest iRAP ratings of 1 or 2:

- the A52 between Nottingham and Grantham
- the A46 at Newark-on-Trent
- the A46 at Lincoln
- the A38 north-west of Derby
- the A52 between Derby and Nottingham
- the A50 at Uttoxeter and south-east of Stoke-on-Trent
- the A46 around the north of Leicester

Network performance

- traffic on the A50,A52, A38 and A46 can experience high levels of delay throughout the day, particularly at peak periods
- where traffic delays currently exist, they are forecast to increase further by 2031

1 Highways England (2020) *Delivery Plan: 2020–2025.* https://nationalhighways.co.uk/delivery-plan/

2 Department for Transport (December 2021) *Planning ahead for the Strategic Road Network: Developing the third Road Investment Strategy.* https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1045938/planning-ahead-for-the-strategic-road-network-developing-the-third-road-investment-strategy.pdf

Improved environmental outcomes

- a desire to maintain and protect areas with environmental designations and cultural heritage
- a large number of receptors which may be more likely to experience adverse air quality impacts are within 100 metres of the route, or are within designated Air Quality Management Areas
- a substantial number of receptors within 300 metres of the route may experience higher noise levels or are within a Noise Important Area
- a desire to reduce severance impacts on local communities
- a desire to minimise greenhouse gas emissions
- a desire to build resilience to future climate change

Growing the economy

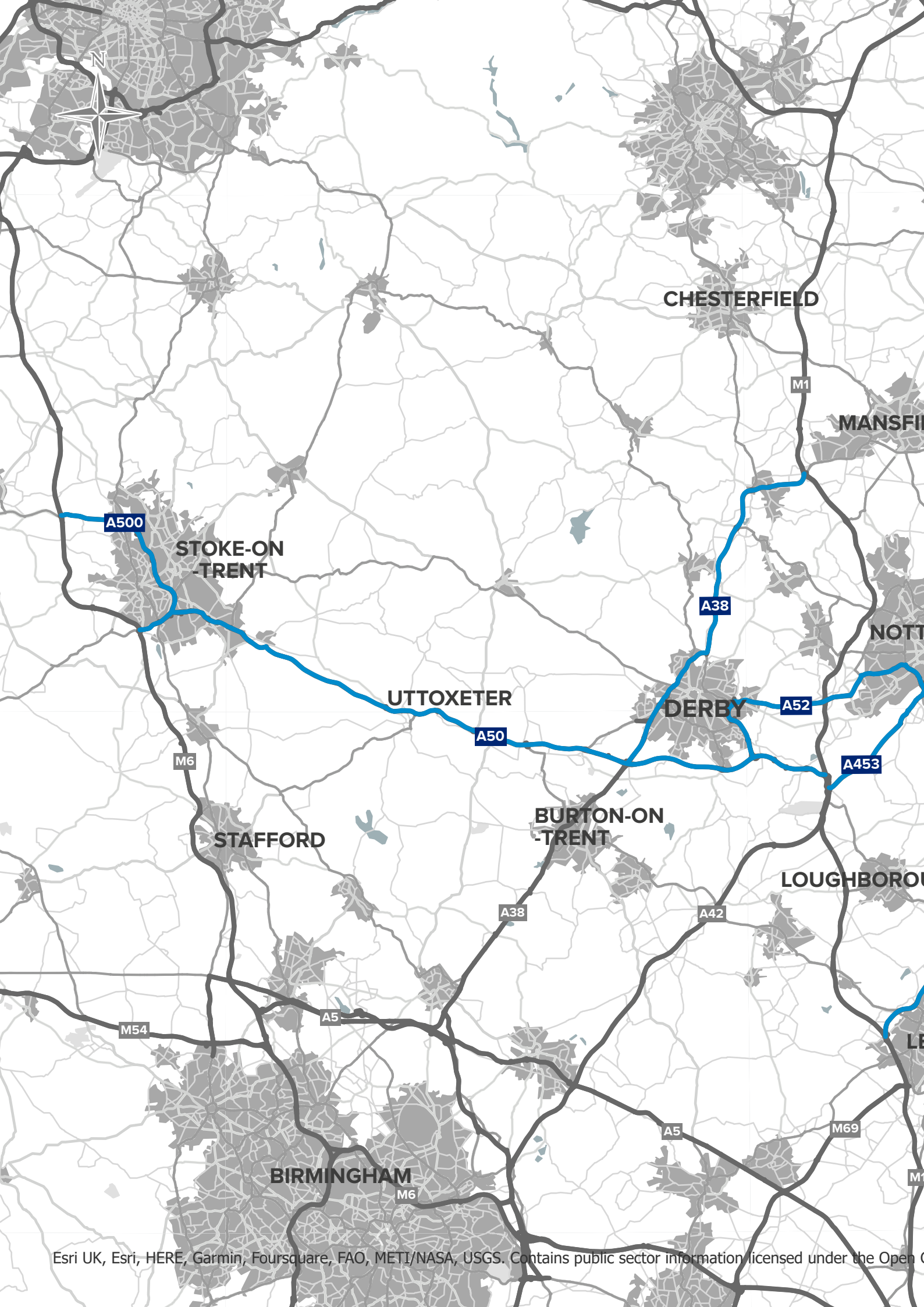
- the A50 and A38 are important to the economy of the North and East Midlands including the warehousing and logistics sectors
- significant growth in economic activity and employment is expected along the route around East Midlands Airport and south of Derby
- significant housing growth is expected close to many of the cities and towns along the route

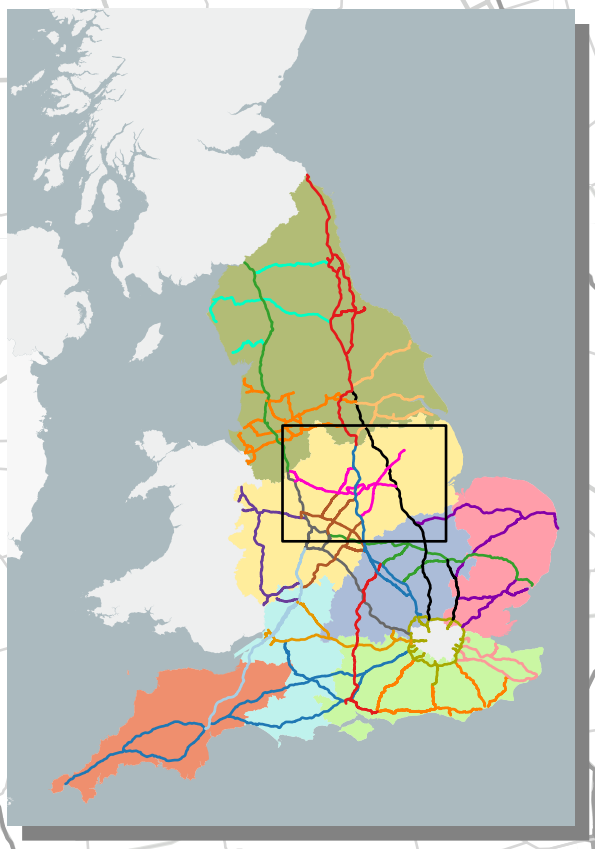
Managing and planning the SRN for the future

- contributing toward the national target of 96.2% or more of carriageway being in good condition
- maintaining the good condition of the strategic road network's geotechnical assets
- ensuring that drainage assets are maintained so that their good structural and service conditions can be upheld

A technology-enabled network

- there is a lack of real-time information for road users during journeys on the route
- integration of traffic management between the SRN and local roads
- there is a need for more electric vehicle charging points outside of major urban areas





LINCOLN

NEWARK-ON
-TRENT

GRANTHAM

A1

A46

A52

North and East Midlands route

SRN

MRN

Local roads

Initial route objectives

We want to provide safer and more reliable journeys for all those who use or live alongside our network, and support the route in achieving the economic and housing growth ambitions of surrounding areas. Based on our engagement and data analysis, we have defined a set of objectives for the route. The table below shows the route objectives and how they contribute to the DfT's six strategic objectives for the SRN as a whole.

		DfT's strategic objectives for our network					
Ref.	**Route objective**	**Improving safety for all**	**Network performance**	**Improved environmental outcomes**	**Growing the economy**	**Managing and planning the SRN for the future**	**A technology-enabled network**
A	**Improve safety for all:** provide safe journeys around Leicester and Lincoln (A46), Nottingham (A52) and Stoke (A500) to benefit road users, interested parties and local communities	✓	✓				
B	**Provision of a resilient network:** improve road users' experience of reliable journeys through provision of a resilient network		✓		✓		
C	**Be a better neighbour:** be a better neighbour by safeguarding the environment and reducing the impact of air quality, noise and severance on local communities of Stoke-on Trent (the A500), Derby (the A38) and Nottingham (the A52)		✓	✓			
D	**Support sustainable economic and housing growth:** support sustainable economic and housing growth at key sites to the south of Derby, north of Leicester, East Midlands Gateway, east of Nottingham and Lincoln		✓		✓		
E	**Support the needs of the freight industry:** support the needs of the freight industry (including heavy goods vehicle facilities) to ports both within the route corridor, for example, East Midlands Airport, and as a connector to ports, including Freeports, and destinations outside the route, for example the Ports of Immingham and Liverpool, and Birmingham Airport		✓		✓		
F	**Better informed drivers:** improve communication to better inform drivers and improve driver experience throughout the route, including on local roads approaching strategic road network junctions		✓		✓	✓	✓

Next steps

The 20 route strategy Initial overview reports will combine with other related evidence to inform the broader *SRN initial report* as part of the RIS process for the third road period (2025-2030). The *SRN initial report* includes an assessment of the current state of the network and user needs from it, potential maintenance and enhancement priorities, and future developmental needs and prospects. DfT will consult on this *SRN initial report*[3], which will serve to inform the RIS and *Strategic business plan.*

We will finalise the Route strategy overview reports following feedback on the publication of these Initial overview reports. They will be used as a forward planning tool by National Highways to help identify investment opportunities for enhancements, as well as to support decisions around operating and maintaining our network. Providing an understanding of the strategies for each route will also help inform the decisions taken by our interested parties. These finalised Route strategy reports will also serve to inform the RIS and *Strategic business plan*[4].

3 National Highways (2023) *SRN initial report.* https://nationalhighways.co.uk/futureroads
4 National Highways' Strategic business plan will be published later in road period 2 (2020-2025)

Helping the nation to thrive

01 Introduction

Our strategic road network (SRN) is the backbone of the country. More than 4,500 miles of motorways and major A-roads connect people, build communities, create opportunities and help the nation thrive.

Our network provides safe, high-speed connections that:

- enable businesses to transport products and services
- provide access to jobs and suppliers
- facilitate trade and investment
- support commercial and housing development that is integrated with local roads and other modes of transport

The SRN also supports leisure journeys, connecting people and places, and will play a central role in delivering the social, economic and environmental needs of the nation, especially as we seek to reduce the carbon footprint of our network.

To plan for the future, we are taking a long-term view of our network and the trends that could impact transport, road travel and personal and commercial mobility. We consider factors ranging from climate change and low-carbon transport to increasing automation, digital technologies and changing travel preferences. Route strategies are at the centre of this dynamic future planning of our network. They build on our *Connecting the country: Our long-term strategic plan to 2050*[5] that sets out our vision and plan for the SRN until 2050, aligning with the government's *Ten point plan for a green industrial revolution*[6].

Purpose of route strategies

Our route strategies are based on 17 routes across England, with some split into two sub-strategies where this better reflects our customers' end-to-end journeys. There are 20 reports in total. We outline the objectives of each route along with the constraints faced and the current and predicted future performance based on analysis and widespread engagement with our customers and neighbours. Our customers and neighbours include:

- local authorities, devolved administrations, and Sub-national Transport Bodies
- other transport network operators (including local highway authorities, Network Rail, port and airport operators)
- operational partners (including, but not limited to, the emergency services)
- road users
- local communities
- other relevant interested parties with a significant stake in the long-term development of the network
- Members of Parliament

We also provide a list of locations for further consideration to inform investment planning across National Highways and for the Road investment strategy (RIS). We develop and publish these route strategies to:

- help us develop an understanding of the future state of the routes
- identify the locations for further consideration to inform our investment programmes and guide our vision

5 National Highways (2023) *Connecting the country: Our long-term strategic plan to 2050* https://nationalhighways.co.uk/connectingthecountry

6 HM Government (November 2020) *The Ten Point Plan for a Green Industrial Revolution: Building back better, supporting green jobs, and accelerating our path to net zero.* https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/936567/10_POINT_PLAN_BOOKLET.pdf

- give a practical tool to National Highways as a whole, while supporting external interested parties who anchor their infrastructure planning and investment around our network
- help ensure that all investment delivers safer and more reliable journeys for our customers and neighbours

For clarity, this document does not:

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Route strategy reports

These Route strategy initial overview reports have informed the *SRN initial report*[7] that sets out our vision and proposed priorities for the third road period (2025-2030) and beyond.

The final Route strategy reports will be published by the end of the RIS period, which covers 2020-2025. The three delivery phases of route strategies are shown in Figure 1.

Purpose of the report

This report is the route strategy for North and East Midlands route. In this report, we detail the route context, current constraints on the route, and opportunities for improved connections with local roads and rail links. We set out intelligence-led route objectives aligned with the DfT's six strategic objectives. These objectives aim to ensure the route can serve its function, while mitigating the identified constraints and challenges. They conclude with locations for further consideration to achieve the route objectives.

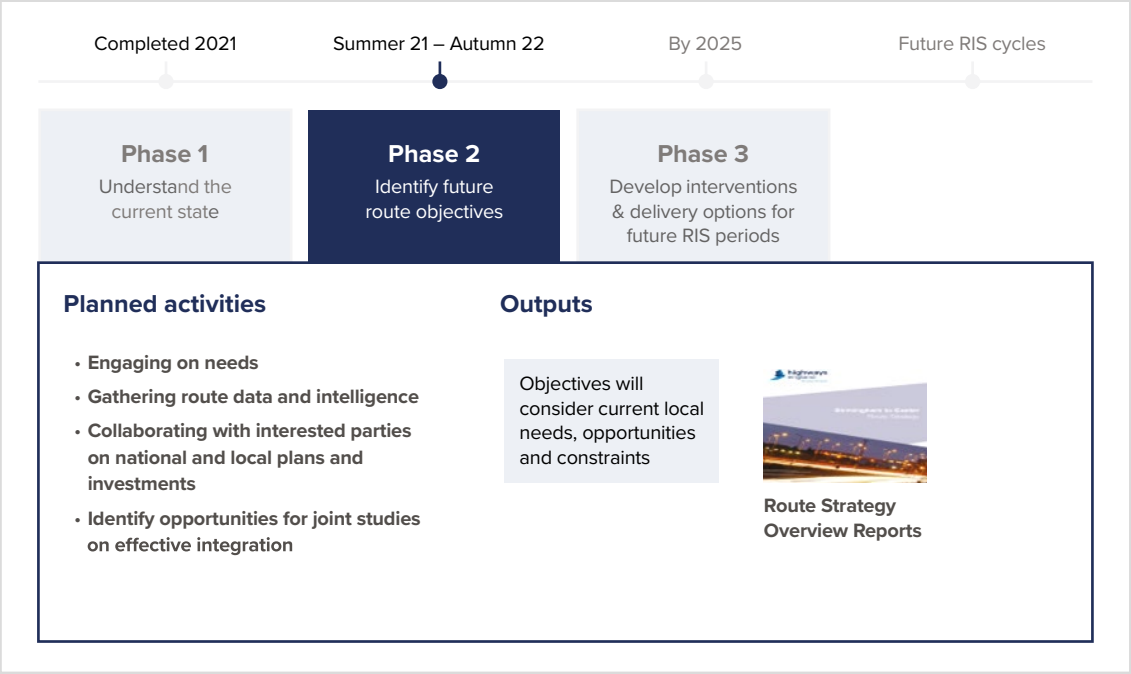

Figure 1: The route strategies delivery phases

7 National Highways (2023) *SRN initial report.* https://nationalhighways.co.uk/futureroads

The route objectives and locations for further consideration will be presented to DfT to inform future decision-making about investment planning through the RIS. It should be recognised that not all aspirations outlined in this report can be funded or delivered.

The development cycle for the third Road Investment Strategy (RIS3)

Preparing route strategies is a requirement under the Infrastructure Act as well as a National Highways Licence requirement. The Licence sets out the Secretary of State for Transport's statutory directions and guidance to National Highways. It states that we must periodically prepare and publish route strategies covering the whole of the network to maintain an understanding of how the network is performing, while identifying any potential challenges. Each set of route strategies informs each RIS outlined by government, as well as supporting decision-making for the ongoing management and development of the network.

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Route strategies are one of the key steps of research required by DfT to inform the setting of a RIS. Following the setting of RIS1 and RIS2, which covered the first road period (2015-2020) and second road period (2020-2025), we are now in our third round of route strategy planning informing RIS3 for the third road period (2025-2030) and beyond.

Looking across the whole of the SRN, our route strategies form one of the most important parts of the 'research' phase of the RIS3 development cycle. These strategies explore the current performance and future pressures on every stretch of the SRN, covering matters such as safety, reliability, congestion, environmental impacts, and local ambitions for economic and housing growth. Through the extensive engagement we have undertaken to inform the strategies, we provide insight to DfT and government into local, regional and national priorities for the SRN to support investment decisions for RIS3 and beyond. Grounded in evidence, the strategies identify the immediate needs of the network as well as highlighting longer-term issues or potential opportunities as shown in Figure 2.

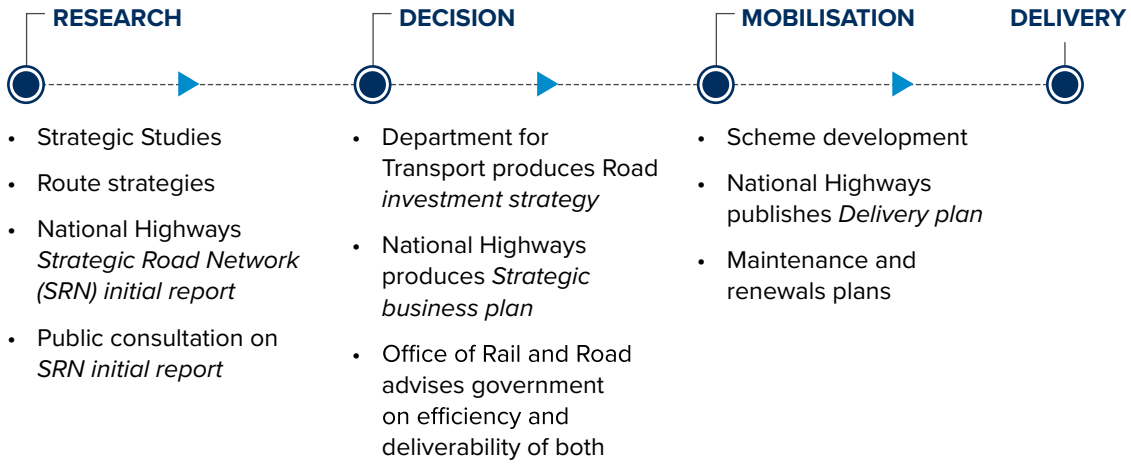


Figure 2: The RIS development cycle

We have developed a revised approach to route strategies, building on past versions, to ensure they respond to the current and future needs of our customers and neighbours. The approach for route strategies is outlined in our approach document *Vision for route strategies: Planning for the future of our roads*[8].

Our ambitions for route strategies, summarised in Figure 3, are to be forward-looking, widely supported, and integrated with other networks and modes of travel. They will consider the implications of local development plans and government ambitions and be dynamic to respond to the changing needs of our customers and neighbours in how they use and interact with our network. Such needs may evolve as a result of how people use our network due to COVID-19, environment considerations, or the need to support strategic connections and integrated solutions that connect locations, all of which will have an influence on the scale and type of future investments. We will work with interested parties to ensure that the route strategies are widely supported and integrated into regional and local strategies.

Engagement with customers and neighbours

Engagement with customers and neighbours has been central to developing our route strategies. We have already gathered a wealth of evidence from the previous rounds of route strategies and through our ongoing monitoring of road condition and performance.

Building on engagement to date, we have worked with Sub-national Transport Bodies, Office of Rail and Road, Department for Transport, and Transport Focus to ensure a diverse range of people and their views are represented. This has allowed us to further improve our understanding of our customers and neighbours' requirements, helping us identify locations for further consideration to improve the SRN.

We will continue to evolve this engagement process for future cycles of route strategies. We used a range of methods to gather information from customers and neighbours throughout the route strategies' evidence collection period, which ran from August to December 2021 (Figure 7). These included round tables, workshops, and an online feedback form and we designed the approach to be more inclusive by engaging with, and learning from, a wide range of interested parties.

Thinking about how the SRN integrates with the surrounding rail and road network, including parts of the major road network (MRN) and local roads, we designed our engagement around the following objectives:

- To understand the current role of the SRN and how it could better support the aspirations of customers and neighbours of the future
- To gather views and seek evidence on current and future issues, challenges and opportunities – both local and strategic

We have also gained an in-depth understanding of what our road users want nationally from Transport Focus' *Strategic roads user survey 2021/22*[9] into road users' priorities for improvements to journeys on the SRN. This research was based on focus groups and interviews with all types of road users across the country, alongside a survey of more than 5,000 drivers. It asked for users' views on key issues, such as sustainability and electric vehicles, and the stress of driving on the SRN.

From this research, Transport Focus identified that the majority of road users want the focus of investment to be on keeping National Highways' existing roads in good order before building new ones. Their top priority for improvement to journeys on the SRN is road surface quality, followed by the safer design and upkeep of roads.

8 Highways England (2021) *Vision for route strategies: Planning for the future of our roads.* https://nationalhighways.co.uk/media/w0vhd3un/vision-for-route-strategies.pdf

9 Transport Focus (July 2022) *Strategic Roads User Survey - 2021/22 summary report.* https://www.transportfocus.org.uk/publication/strategic-roads-user-survey-2021-22-summary-report/

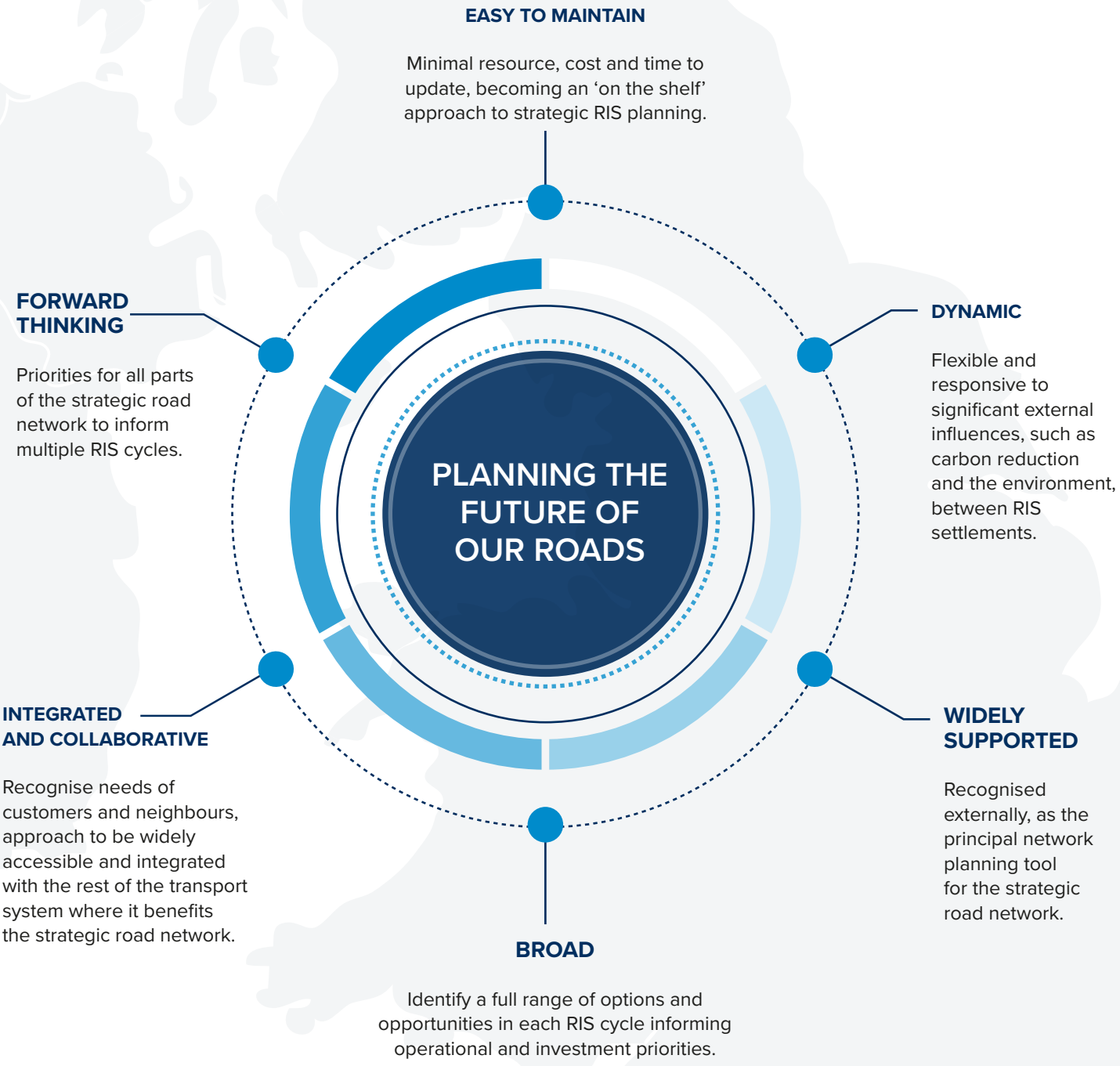


Figure 3: Our ambition for route strategies

Users also want to see better management of roadworks and of unplanned delays, such as incidents or breakdowns, and better information about unplanned disruptions to journeys. Walkers, cyclists and horse riders using the SRN highlighted concerns about the speed of traffic and want action on lighting and litter. This research will be used by Transport Focus to make recommendations about what National Highways should be required to deliver during the third road period (2025-2030).

The findings from the Transport Focus survey align with findings from our route strategies engagement with customers and neighbours across the SRN.

Engagement during workshops with interested parties (shown in Figure 6) identified the following national priorities:

- Better driver education aimed at teaching road users about new technology
- Deeper consideration of environmental constraints at the earliest stage of planning, and consideration for key environmental issues such as biodiversity, air quality and sustainable transport
- A resilient and reliable SRN to support economic growth
- Better integration between the SRN and local road network to improve journey times
- Greater support for the freight industry in terms of:
  - the future of low emission vehicles and commercial fleet
  - the impact of congestion on productivity, fuel cost, driver breaks, lorry park locations and delivery times
- Greater collaboration and early engagement with interested parties, and greater alignment between network operators, including consideration for joint funding opportunities

In addition, feedback on the SRN provided by communities and neighbours via the online tool, showed similar national priorities. The breakdown of the 1,700 responses we received via the online feedback tool are shown in Figure 4 and Figure 5.

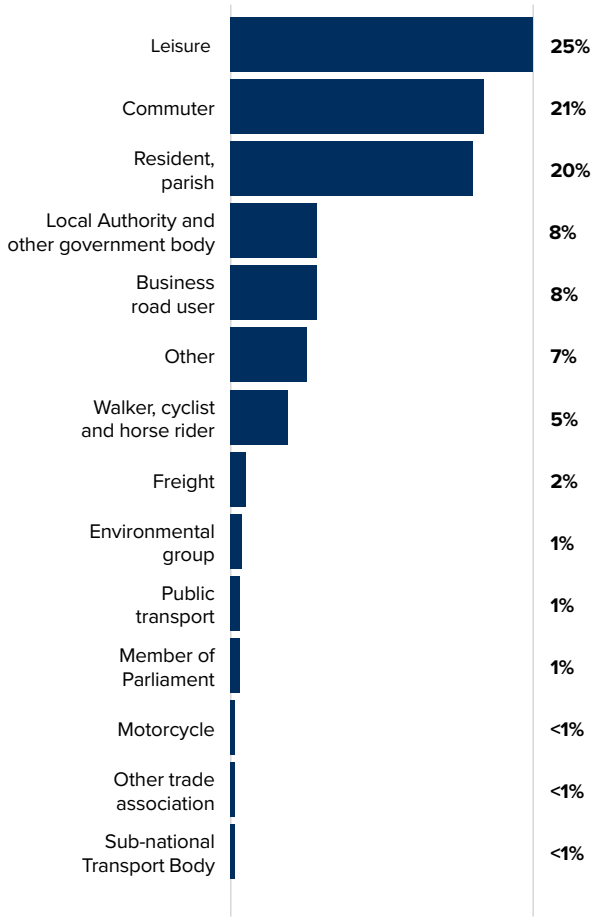


Figure 4: All responses to online tool by participant type

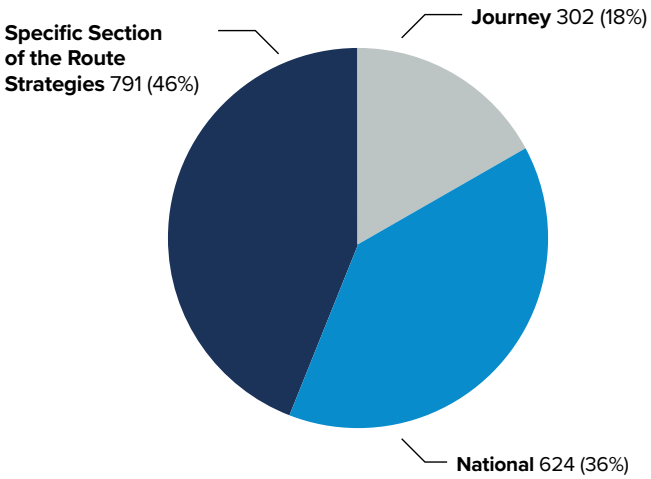


Figure 5: All response to online tool by type

A breakdown of the national issues and general feedback raised is shown in Figure 8, which highlights that, in terms of the issues identified:

- 26% were related to safety
- 23% were related to congestion
- 28% were related to the environment or carbon

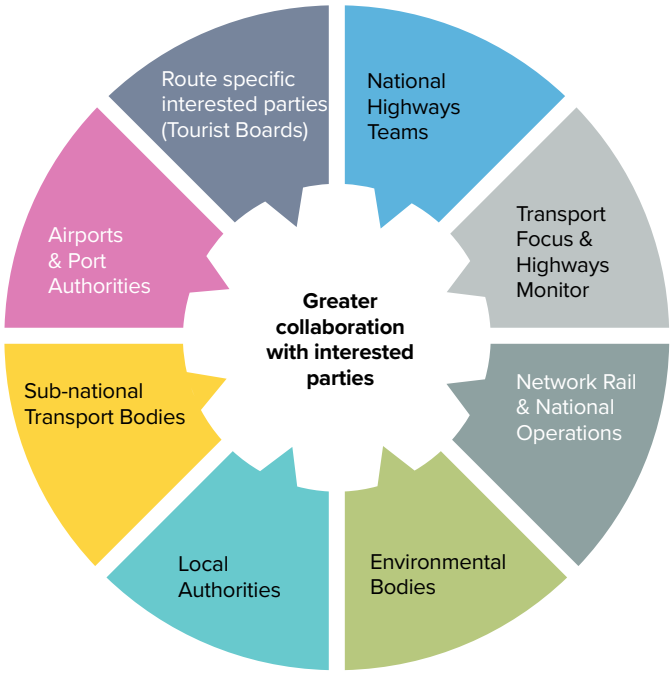


Figure 6: Interested parties involved in the route strategy engagement

Figure 7: Timeline of engagement with interested parties

DfT's strategic objectives for the strategic road network

DfT have published six objectives for the SRN. These are the strategic objectives for RIS3 (2025-2030) that have been agreed between National Highways and DfT and were set out in the *RIS3 Planning ahead*[10] document in December 2021. They cover safety, network performance, environment, economy, management and planning for the future and technology.

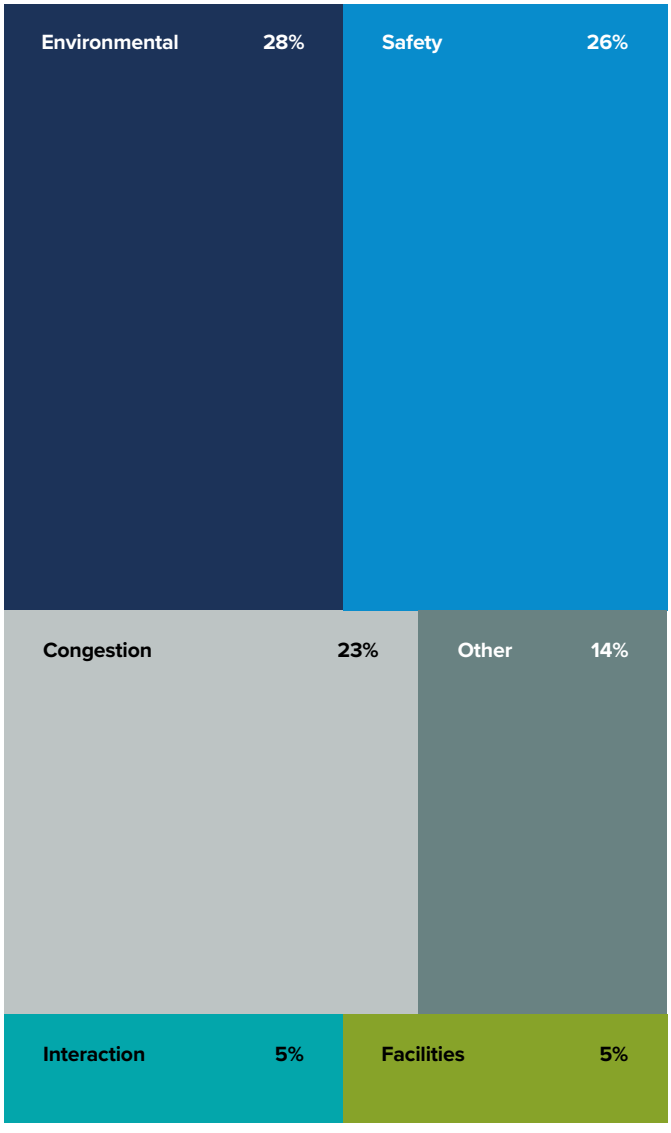


Figure 8: National themes from feedback through the online tool

10 Department for Transport (December 2021) *Planning ahead for the Strategic Road Network: Developing the third Road Investment Strategy*. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1045938/planning-ahead-for-the-strategic-road-network-developing-the-third-road-investment-strategy.pdf

All our route strategies need to show how they contribute to the delivery of the DfT's six strategic objectives for our network, to ensure we meet future challenges. These help us create relevant, meaningful and effective strategies that address evolving concerns. Such concerns include decarbonisation, ecology, the need for new homes and the desire for a better-connected country.

This aligns with the Infrastructure Act 2015, where National Highways has a statutory obligation to have regard to the effect of its functions on the environment, and the safety of users of highways.

At a national level, National Highways has existing commitments and ambitions to contribute to the DfT strategic objectives, as outlined below. The strategies for each route are aligned with these. They include:

i) Improving safety for all

- Our safety approach

ii) Network performance

- Expectations over COVID-19 and travel demand
- Our ambition for supporting freight, logistics and the coach industry
- Our ambition for supporting end-to-end journeys for a variety of modes
- Our approach to trunking and de-trunking for SRN

iii) Improved environmental outcomes

- *Net zero highways: Our 2030 / 2040 / 2050 plan*[11]
- Our plan for net zero carbon travel on our roads covering emissions from the vehicles using the SRN
- Our approach to improved environmental outcomes

DFT'S SIX STRATEGIC OBJECTIVES FOR THE STRATEGIC ROAD NETWORK

- Improving safety for all
- Network performance
- Improved environmental outcomes
- Growing the economy
- Managing and planning the SRN for the future
- A technology-enabled network

iv) Growing the economy

- Our contribution to growing the economy and levelling up
- Our approach to spatial planning

v) Managing and planning the SRN of the future

- Our approach to asset management

vi) A technology-enabled network

- Our ambition for digital roads

11 National Highways (2021) *Net zero highways: our 2030 / 2040 / 2050 plan*. https://nationalhighways.co.uk/media/eispcjem/net-zero-highways-our-2030-2040-2050-plan.pdf

IMPROVING SAFETY FOR ALL

OUR SAFETY APPROACH: We are committed to reducing the number of road users killed or seriously injured on the strategic road network, by 50% (from the 2005-2009 baseline) by the end of 2025, with a long-term vision to eliminate harm arising from use of the SRN. We recognise:

- safety is National Highways' top priority. We believe that everyone who travels or works on our roads should get home safe and well
- billions of miles are travelled on the SRN each year, with the vast majority of these safe and reliable journeys
- our roads are some of the safest in the world, but we know there is more we can do. Every death or serious injury on our roads is a tragedy and we are committed to creating the safest roads in the world

NETWORK PERFORMANCE

EXPECTATIONS OVER COVID-19 AND TRAVEL DEMAND: COVID-19 has had the biggest single-year impact on road traffic since records began in 1949. But car traffic on the SRN is now back to approximately 95% of pre-pandemic levels.

At the time of writing, while the onset of COVID-19 and the rapid rise in homeworking initially decreased demand for both public and private transport, the greatest impact has been on public transport, with private vehicle travel the first mode to rebound. Homeworking has not noticeably reduced demand for the SRN. An estimated 43% of UK jobs can be done entirely from home, but nearly two-fifths of businesses expect 75% of their workforce to eventually return to their normal place of work.

It is unclear if the scale of homeworking will continue or how it will affect long-term travel demand. For the short-term, transport flow data has generally shown that traffic peaks have become flatter but broader, with traffic more evenly spread across the day, suggesting some behaviour change.

Continued hybrid working could see a redistribution of demand, flattening the daily morning and afternoon peaks, and instead creating a mid-week peak.

The pandemic has also brought wider uncertainties, such as whether these loosened physical ties to employment locations could see increases in suburban living, as workers that are more 'knowledge-based' than 'location based' take advantage of greater geographic mobility across the country.

Changes in leisure trends caused by the pandemic could also have implications for the SRN, such as the changing demand for high street retail or choices around domestic versus overseas holiday-making. Such needs may evolve, all of which will have an influence on the scale and type of future investments.

SUPPORTING FREIGHT, LOGISTICS AND THE COACH INDUSTRY: We continue to collaborate with our freight and logistics customers to better understand how the SRN can support their operations, and work with wider government in the delivery of their *Future of freight plan*[12]. We recognise that lorry parking and facilities are key to enabling freight and logistics businesses to operate safely and efficiently. A lack of parking and good quality facilities impacts the recruitment and retention of drivers into a sector that is crucial to the country's economy. We are keen to play our part in ensuring good quality facilities are in the right places and that we support the sector in recruiting and retaining a diverse pool of drivers.

Our ambition is to improve lorry parking by:

- intervening where the market is not meeting the demand for lorry parking (areas of high demand with insufficient facilities)
- working with operators to improve the quality of existing facilities
- ensuring our major projects consider the needs of lorry drivers

12 Department for Transport (June 2022) *Future of Freight: a long-term plan.* https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1085917/future-of-freight-plan.pdf

In addition to supporting lorry parking, we remain focused on:

- reducing congestion on the SRN, which affects the speed, reliability and cost of logistics, as well as driver safety when journeys exceed regulated driving time
- improving the suitability of alternative routes and diversions off the SRN
- supporting the industry in achieving net zero carbon emissions by facilitating the adoption of alternative fuels linked to parking facilities
- ensuring resilience on key freight routes, such as between ports, airports, wharves and rail freight interchanges
- increased data sharing on incidents, roadworks and diversions
- understanding changes in how our freight and logistics customers use the SRN so we can continue to provide the best possible service

IMPROVING END-TO-END JOURNEYS FOR A VARIETY OF MODES: The SRN plays an important role in supporting a wide range of customer journeys by different modes of transport. We are exploring how to support customers' end-to-end journeys by creating travel choices that deliver our target of net zero carbon customer journeys by 2050. We recognise our role in supporting an integrated transport network that allows our current and future customers to re-route, re-time, re-mode and reduce their journeys, especially at peak times and during major disruption.

Through understanding National Highways' role in influencing and improving travel, we will identify how to support customers utilise the right mode for the right journey.

By working closely with operators, we will ensure our network supports bus and coach services. And through the development of active travel networks we can help deliver health and wider social benefits.

Our focus is on delivering net-zero customer journeys by 2050 through behaviour change towards sustainable travel by:

- understanding travel behaviours to identify customer needs for end-to-end journeys, supporting the development of a travel demand management strategy
- ensuring our customers have the information they need to make the travel choices that are right for them
- improving integration of different modes of travel by working with key interested parties to deliver a range of active travel and public transport interventions
- using behaviour change and techniques to manage future travel demand and minimise disruption from major works
- continuously improving our offer for walkers, cyclists and horse riders

SRN TRUNKING/DETRUNKING: For RIS2 (2020-2025), we were asked to explore changes to the SRN to ensure the network aligns with RIS2 strategic priorities, reflected in the *Strategic business plan*. This plan relates to improving connections between main urban centres, to international gateways, to peripheral regions (for levelling up) and strategic cross-border routes (to strengthen union connectivity). It included a commitment to explore potential asset ownership changes between ourselves and local highway authorities that could be implemented no earlier than the start of RIS3 (2025-2030). DfT have produced a shortlist of 18 trunking and two de-trunking candidates, identified following the draft RIS2 public consultation in 2018, for us to assess desirability and viability of asset transfer. De-trunking is the process of returning a National Highways road to the local highway authority control and vice versa for trunking.

These candidates were put forward by a range of external interested parties, including local authorities, Local Enterprise Partnerships and Chambers of Commerce, then shortlisted by DfT. There is ongoing work to review the assessment evidence and recommendations, after which government ministers are expected to announce the candidates that will progress to the detailed development stage, which will be led by National Highways and incorporated in the forward study programme and wider RIS3 process.

IMPROVED ENVIRONMENTAL OUTCOMES

NET ZERO HIGHWAYS: NATIONAL HIGHWAYS' 2030/2040/2050 PLAN[13].
We are committed to being a Net Zero Carbon Company by 2050 (2040 for Maintenance and Construction emissions).

We published our ambitious net zero carbon plan in July 2021. It details how we will achieve net zero emissions for: our corporate space by 2030, our maintenance and construction emissions by 2040, and road user emissions by 2050. We're keen to support a sustainable future and know that road travel is vital to enabling a thriving net zero economy. Our plan strengthens the decarbonisation of the transport sector, which remains the biggest emitting sector of greenhouse gases in the country.

We also need to consider how the SRN will be resilient to climate change. Our route strategies will need to recognise that the schemes we construct are likely to be subjected to changes to the climate, such as flooding.

Our route strategies demonstrate how we will continue to connect the country and ensure that the SRN is environmentally sustainable and resilient to climate change. This includes understanding the right schemes and options that support integration across different modes of travel, improve the SRN's capacity through digital roads, and deliver broader environmental enhancements.

This will change the way we work both internally and with our supply chain and wider interested parties.

As part of our net zero commitment, we need to consider the contribution our schemes make to sustainable development. We are adopting the PAS2080 Carbon Management in Infrastructure Standard that will help us invest only where we can achieve our zero carbon goals. Guided by the PAS2080 Standard, we will use an investment hierarchy where we favour opportunities to deliver whole life value without undertaking construction. We will demonstrate that we have considered all interventions during our planning stages and that every effort is made to avoid negative impacts and maximise environmental benefits throughout the lifecycles of schemes. We will also work with government and the private sector to set out a clear proposition by 2023 for electric vehicle charging on our network. This will cover both customer need and the infrastructure required to deliver this.

More than ever we need to support the Government's wider plans for decarbonising transport. The SRN plays a pivotal role in supporting the transition to zero carbon cars, vans and heavy goods vehicles (HGVs), but we also recognise that we need to better integrate with other modes of transport too, including public transport and active travel.

NET ZERO CARBON TRAVEL ON OUR ROADS COVERING EMISSIONS FROM THE VEHICLES USING THE STRATEGIC ROAD NETWORK:
We have set an ambition for all of our customers to be travelling using net zero transport by 2050, in line with the UK Climate Change Act. Many of the actions that will deliver this ambition are out of our direct control, but that does not mean we cannot play our part. Our priorities are to help roll-out solutions to decarbonise HGVs and support the uptake of electric cars and vans. We will also continue our work on integrating the SRN with other transport modes, while working to improve the efficiency of the network.

13 National Highways (2021) *Net zero highways: our 2030 / 2040 / 2050 plan*. https://nationalhighways.co.uk/media/eispcjem/net-zero-highways-our-2030-2040-2050-plan.pdf

Our actions relating to reducing emissions from road users of our network include:

- publishing our proposed approach to zero carbon HGV trials by the end of 2022
- publishing a blueprint for electric vehicle charging services on our roads by 2023
- integrating a strong modal shift programme in the third road period (2025-2030), building on our work to date

IMPROVED ENVIRONMENTAL OUTCOMES: We know there's a requirement to balance people's need to travel on our roads with doing all we can to protect and improve the environment. That means we will continue to consider a wider range of environmental factors in our future planning, such as improving biodiversity, protecting ancient woodlands, reducing pollution in Air Quality Management Areas, and protecting Sites of Special Scientific Interest. These will form part of our considerations during our early planning. In response to these emerging issues, our latest route strategies take a balanced view on expanding the future capacity of the SRN. We now seek to develop strategies that produce balanced investment plans with schemes of different magnitudes, delivering across multiple objectives: safety, journey time improvements, network resilience, maintenance and renewals, technology, environmental enhancement, and integration with more sustainable transport modes. The outcome will be an SRN that supports the economy but also delivers on the wider environmental challenges.

GROWING THE ECONOMY

GROWING THE ECONOMY AND LEVELLING UP: The SRN is a vital part of England's – and the UK's – transport infrastructure. It facilitates the movement of people and goods nationally, regionally and locally through connections to the major road network and other transport infrastructure. The Government's levelling up agenda places emphasis on ensuring no community is left behind, particularly as we recover from the COVID-19 pandemic. With such a vital role in supporting the economy and facilitating connectivity - enabling access to jobs and homes, international gateways and supporting road-reliant sectors – National Highways and the SRN have a role to play in supporting the levelling up agenda and the wider aim of economic prosperity.

The Government is committed to strengthening transport connections across the UK. Sir Peter Hendy's *Union connectivity review*[14] was published in late 2021. The Review recommends the creation of UKNET, a strategic transport network spanning the entire United Kingdom based on a series of principal transport corridors between key urban and economic centres, including international gateways. The findings of this report have been considered in the context of our route strategies and will be a key objective for our cross-border routes and the roads connecting to important ports.

Additionally, the SRN plays a critical role in enabling international connectivity and trade by providing reliable and resilient access routes to global markets via the country's network of international ports, airports and the Channel Tunnel. Enhancing these links and supporting these gateway locations to thrive, including maximising the opportunities of Freeports, is a key part of National Highways' role in supporting the national economy.

14 Hendy, P. (November 2021) *Union Connectivity Review: Final Report*. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1036027/union-connectivity-review-final-report.pdf

SPATIAL PLANNING: We recognise that businesses operate from the location that best suits their business requirements in terms of access to customers, the supply chain and employees. Location is equally critical to decision-making in the residential market, both for the house builder and the potential purchaser or occupier. In enabling new employment spaces and homes to be developed, at National Highways we engage fully and positively as a statutory consultee in the planning system.

This is in line with our statutory responsibilities as set out in our Licence, and in support of wider government policy and regulation. Our focus is on securing sustainable development, managing cumulative impacts of strategic growth, and minimising the potential for any negative impacts on the SRN.

MANAGING AND PLANNING THE SRN FOR THE FUTURE

We recognise that asset management is our core business. It is the service we provide to maintain, operate, and enhance the SRN safely, reliably and effectively for all our customers. We manage more than 4,500 miles of road, over 20,000 structures and 12 road tunnels, as well as drainage, earthworks, and technology equipment. We recognise that our customers rely on our roads to travel 95 billion miles every year, and our work helps unlock housing and employment sites across the country. One of our main priorities is managing these assets effectively and efficiently, to deliver the outcomes our customers and interested parties want.

We have adopted an asset management approach in order to align our strategy and planning activities to create, maintain, operate, and renew all of the assets that make up our network. Asset management links all our activities and supports our three imperatives: safety, customer service and delivery.

We know that good asset management is about understanding our customers and interested parties, identifying what they need and then using our assets effectively to deliver the right level of service. We are working to understand what satisfies our customers, and what we can do to influence this.

Our vision is to create an approach and establish ways of working that make sure all our asset management activity is aligned by following the key principles set out in our asset management policy. We work across the whole asset lifecycle, understanding that asset decisions we make may affect future service provision. This means that we are planning and accounting for emerging and evolving challenges around customer expectation, climate change and new technology. Since the beginning of the second road period we have continued on our journey to increase our asset management maturity, and our organisational objectives have developed significantly in light of COVID-19 and the Government's carbon plans.

A TECHNOLOGY-ENABLED NETWORK

DIGITAL ROADS: Our ambition for digital roads is to continue to harness data, technology and connectivity of people to places and communities and networks to improve the way the SRN is designed, built, operated and used. Our recently published *Digital roads strategy* (September 2021)[15] sets out how we will harness data, technology and connectivity to improve the way the SRN is designed, built, operated and used. This will also support our ambitions to achieve net zero carbon on the SRN. We have established three themes: Digital design and construction, digital operations and digital for customer. These themes will continue to frame our vision towards 2030 and beyond, increasing connectivity, automation and data.

15 National Highways (2021) *Digital Roads*. https://nationalhighways.co.uk/our-work/digital-data-and-technology/digital-roads/

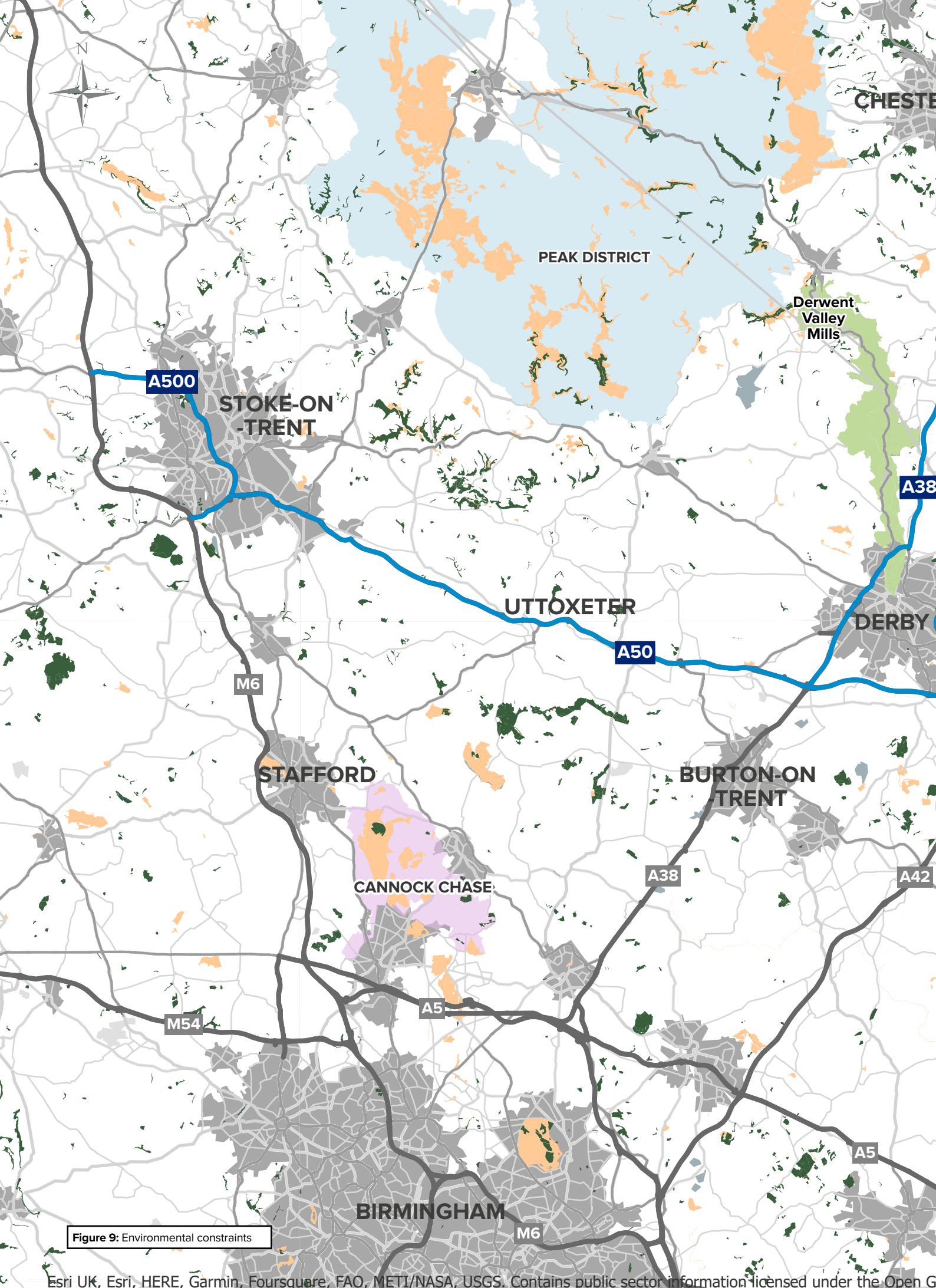
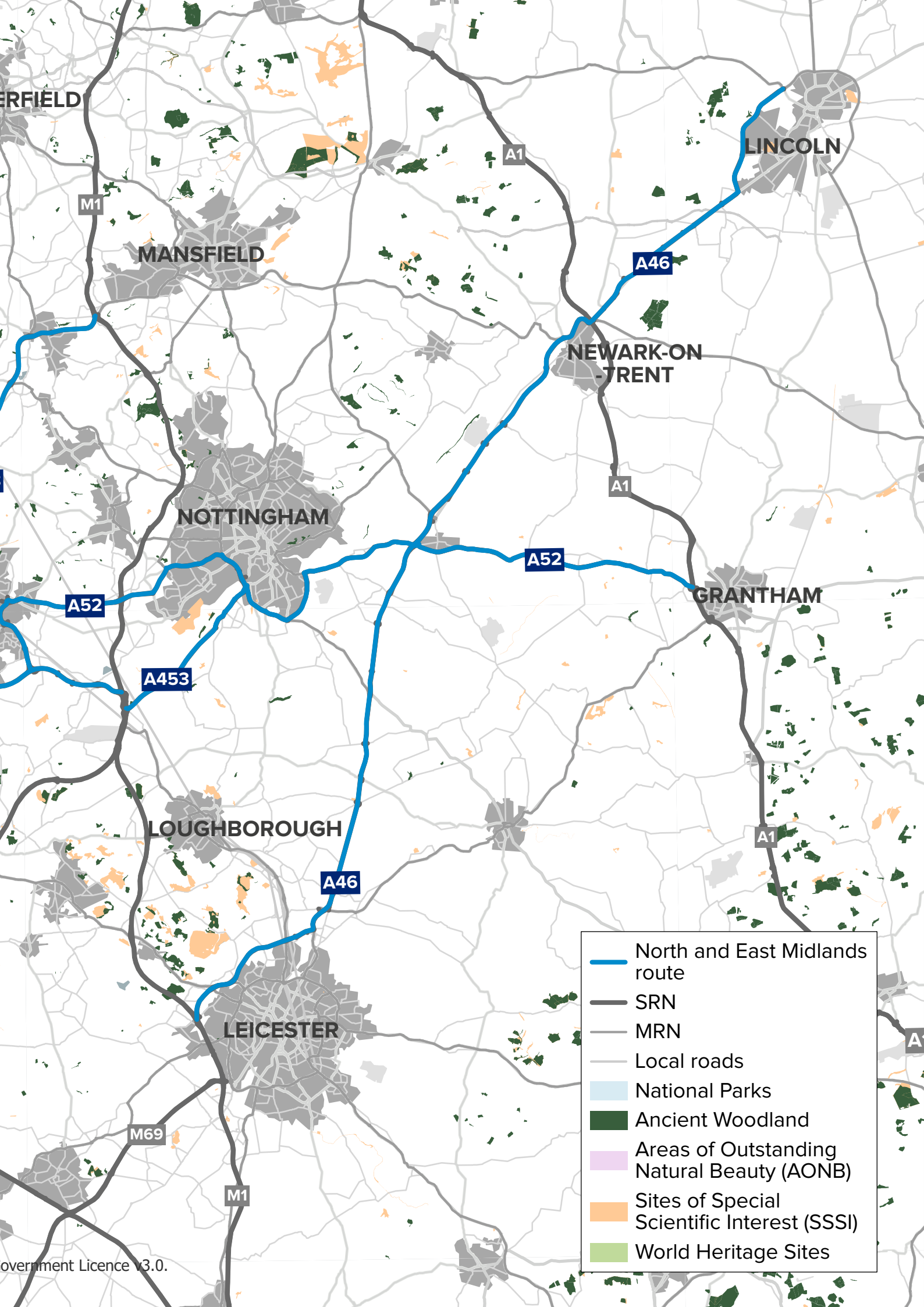


Figure 9: Environmental constraints



Our network connects the country

02 The route

The North and East Midlands route, which includes approximately 175 miles of the strategic road network, links Stoke-on-Trent, Derby, East Midlands Airport, Nottingham, Grantham, Leicester, Newark and Lincoln, through the counties of Staffordshire, Derbyshire, Nottinghamshire, Leicestershire and Lincolnshire. It is a key cross-country corridor linking the East and West Midlands. The route links the main arterial north-south routes to each other, namely the M6, M1 and A1.

The route is an important link into the Peak District National Park and also runs through the UNESCO World Heritage Site of Derwent Valley Mills north of Derby. The North and East Midlands route provides transport corridors linking several towns and cities including Stoke-on-Trent, Derby, Nottingham, Leicester and Lincoln. The route consists entirely of A-roads, which are mostly dual carriageways of varying standards. The route intersects with many other parts of the strategic road network, particularly those providing north-south connectivity between the regions of the UK.

These routes include:

- the M1 at Junction 28, Junction 25, Junction 24 and Junction 24A, and Junction 21A
- the M6 at Junctions 16 and 15
- the A1 at Newark-on-Trent and at Grantham.

The A50 between Stoke-on-Trent and Derby is predominantly dual carriageway with several at-grade junctions between Stoke-on-Trent and Sudbury. The A50 provides an important strategic link between the East and West Midlands, particularly for freight traffic. It also caters for movement of local traffic and access to employment particularly in more urban areas such as Stoke-on-Trent, major advanced manufacturing clusters in Uttoxeter and Derby, and East Midlands Airport.

The A500 joins the A50 to the M6 at Junction 15 and Junction 16, but also facilitates local journeys within Stoke-on-Trent.

The A38 provides a strategic link between the South and West Midlands and the M1 at Junction 28 Pinxton Interchange (South Normanton). This facilitates local short distance journeys around Derby, as well as providing access to the Peak District, Derbyshire Dales and industrial areas around Alfreton.

The A46 is predominantly dual carriageway except for sections at Newark and Lincoln. It has an important function to connect the M1 and A1, thereby providing a south-west to north-east corridor. The A46 is known as the 'Trans-Midlands Trade Corridor'[16] and also facilitates access, particularly for freight, to international gateways including the Humber ports.

The A52 provides a key east-west link between the A1, A46, M1, and beyond to the M6 via the A50, also whilst facilitating short distance journeys around and through the urban areas of Nottingham and the east of Derby.

The A5111 Raynesway and the A6 link the A52 at Derby to the A50 south of Derby. Most of the A52 is dual carriageway, however the section between the A52/A46 Saxondale junction and the A1 at Grantham is single carriageway.

16 Department for Transport (March 2020) *Road Investment Strategy 2: 2020-2025*. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/951100/road-investment-strategy-2-2020-2025.pdf

The main centres of employment along the route are Stoke-on-Trent, Derby, Nottingham and Leicester with smaller but significant centres of employment in Uttoxeter, Newark-on-Trent and Lincoln. The route also provides direct access to East Midlands Airport which is an important employment centre and international gateway for goods and passengers.

Some areas fall into the top 10% of the most deprived areas in England, according to the Index of Multiple Deprivation[17], notably parts of Stoke-on-Trent, Derby, Leicester, Nottingham, Newark-on-Trent and Lincoln, all of which are dependent on good connectivity across the route for access to services and economic opportunities.

This route strategy is based on the road network as of the start of the second road period (2020-2025). Construction of the A52 Nottingham Junctions scheme and A500 Etruria (now completed) schemes commenced during the first road period (2015-2020). The A50 Uttoxeter (at the junction with the A522) and A453 Widening schemes were also opened to traffic on the North and East Midlands route in the first road period (2015-2020). We recognise that some of the journeys on this route are part of longer journeys and therefore need to be considered in conjunction with strategies on other routes.

17 Ministry of Housing, Communities & Local Government (September 2019) *English indices of deprivation 2019*. https://www.gov.uk/government/statistics/english-indices-of-deprivation-2019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Collingham 4
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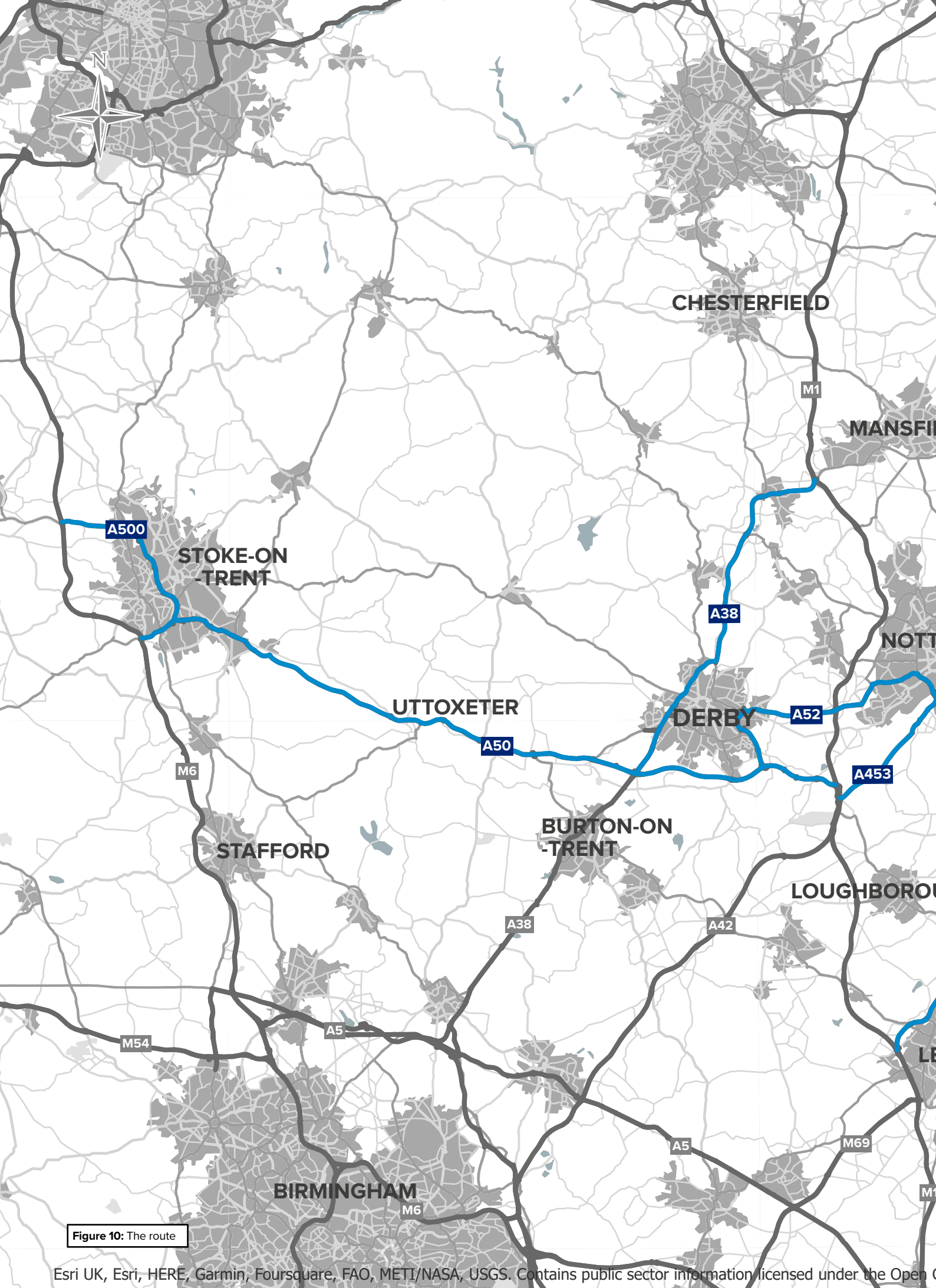
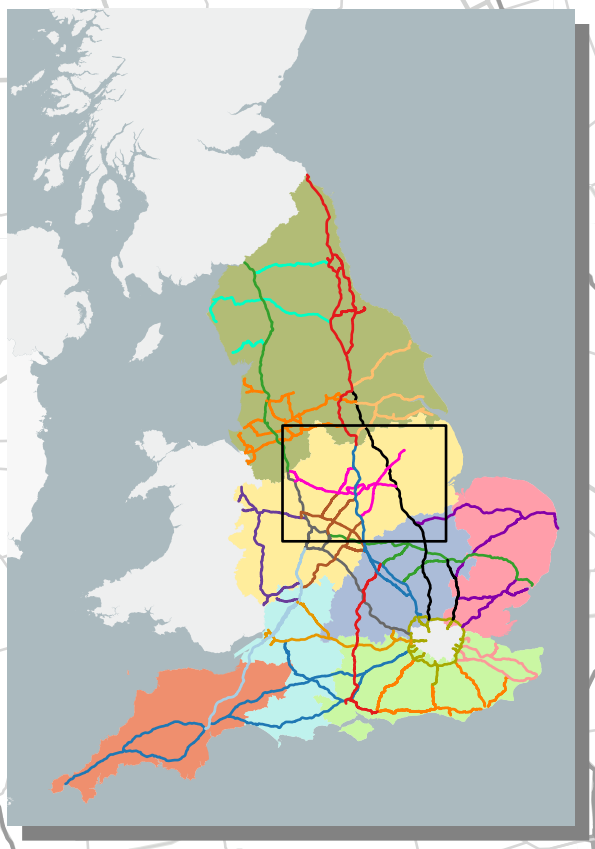


Figure 10: The route



LINCOLN

NEWARK-ON
-TRENT

GRANTHAM

A1

A46

A52

North and East Midlands route

SRN

MRN

Local roads

Listening to your feedback

03 Engagement with customers and neighbours

Engagement with customers and neighbours has been central to developing our route strategies. The development of the route strategies is one of the key steps of initial research in the development of the Road investment strategy (RIS). This engagement, together with data analysis, will inform RIS3 (2025 to 2030) and beyond. It builds on a wealth of evidence from previous route strategies and our ongoing monitoring of road condition and performance.

Engagement with customers and neighbours in the North and East Midlands area

Early engagement with the Department for Transport (DfT), Office of Rail and Road, Transport Focus and Midlands Connect (Sub-national Transport Body) and Network Rail shaped our engagement with customers and neighbours in the North and East Midlands area. We gathered evidence from a cross-section of Members of Parliament (MPs), interested parties, road users and communities at a route level to understand their needs for the future. This built on engagement that had taken place with national interested parties, such as environmental groups, organisations representing road users, business organisations and transport campaigning groups. This engagement has informed the development of the route objectives.

Engagement took place through:

MP roundtables: MPs were invited to a regional roundtable with the Roads Minister to share their views on priorities for our customers and neighbours within their constituencies.

Regional workshops: As part of a programme of workshops with interested parties at a national and regional level, we invited interested parties to workshops on route strategies for the North and East Midlands route in late 2021. Attendees included local authorities, airports and port authorities, transport operators, and other key route-based interested parties, such as major businesses.

We designed the workshops to seek views on both current and future challenges and opportunities for the strategic road network (SRN), in relation to the DfT's six strategic objectives. Views were sought on how the routes interacted with the major road network (MRN), local roads, public transport, walking and cycling, and links to the wider SRN. Interested parties also provided insight into key growth proposals and locations along the route, including committed and emerging economic and housing growth and infrastructure proposals. Interested parties shared their own data, studies and observations of the route area.

Route strategies online feedback form: Local interested parties, road users and communities were invited to give their feedback on specific locations on motorways and A-roads and routes, and general comments on the road network, through the route strategies online feedback form. For the North and East Midlands route, regional interested parties were invited to workshops or to use the online form to share their views and feedback.

The information gathered was a mix of evidence, studies and personal experience. All the evidence gathered through these engagement methods was considered alongside route analysis and data to inform the development of the route objectives. The evidence was supplemented by route-based information from Transport Focus' *Strategic Road User Survey*[18] to gain an understanding of the breadth of feedback.

Key themes from engagement

We have drawn out the common themes that emerged from our engagement with our customers and neighbours on the North and East Midlands route to inform our route objectives. The themes have been aligned with the DfT's six strategic objectives:

i) Views on: Improving safety for all

- Road safety concerns were raised, particularly in regard to some sections of the A52, A50 at Uttoxeter and the A38 at Derby, as they impacted on the ability of local communities to safely use and cross these roads
- Junctions on the A50 including Toyota Island and Sudbury

ii) Views on: Network performance

- Delays at junctions such as Hobby Horse (A46/A607), the A50 at Uttoxeter, the A38 around Derby, the A52 in Nottingham and the A46 around Lincoln, were considered to lead to lengthened journey times for both strategic and local road users, at most times of the day
- Network performance is a key issue in and around the M1 Junction 21A and along the A46 to the Syston area with current delay levels
- Lack of resilience within the SRN causing strategic traffic to use inappropriate local roads
- Ensuring the SRN close to Leicester, for example the M1 Junction 21A to A46 Hobby Horse (Syston area), is to function for local and strategic trips in the face of substantial economic and housing growth
- Coordinated investment (capital and revenue) in locally delivered sustainable measures where that helps to remove 'local trips' from the SRN
- Some routes, particularly the A50/ A500, A38 and A46, serve strategic as well as local functions, and this affects network performance with traffic frequently joining and leaving the SRN
- Greater provision needed for alternative heavy goods vehicle (HGV) parking and freight facilities

iii) Views on: Improved environmental outcomes

- Poor quality environment around the A52, with significant air quality issues and severance for active travel modes
- SRN planning needs to contribute towards wider objectives - health, wellbeing, quality of life, equality and so forth - and include the infrastructure to support active travel

iv) Views on: Growing the economy

- A need to improve connectivity as the A50/ A500, A46 and A38 routes are important freight corridors for Midlands economic growth
- Ensure the SRN is able to cope with a growing logistics sector, as the region is within the 'golden triangle' of logistics[19].
- Businesses in the East Midlands are more dependent on the SRN than any other area.
- High growth in demand for warehousing and its associated access via the SRN across the region more generally.

18 Transport Focus Strategic roads user survey website: https://www.transportfocus.org.uk/insight/strategic-roads-user-survey/

19 There is no formal definition of the 'golden triangle'. It is generally accepted to be an area bounded by Nottingham, Birmingham and Milton Keynes, served by the M1, M6 and M42 motorways.

- Most of the growth in housing development around Leicester and in Leicestershire more broadly has an impact on the M1 Junction 21A and the A46 from Junction 21A to Hobby Horse.
- Housing and employment development plans along the A50, A52 and A46 add pressure to existing locations experiencing delays
- Prepare for high volumes of heavy goods vehicles and LGVs at national distribution centres, free ports, and overnight parking facilities
- Existing delays on the network may impact growth opportunities

v) Views on: Managing and planning the SRN for the future

- Operational issues: litter picking is a challenge with no hard shoulder (A50)

vi) Views on: Technology-enabled network

- Improved communications are required, particularly on and approaching the SRN A-roads, to better inform road users of issues on the network
- Gantry signs to warn of delays before joining the SRN and connecting to a route.
- Improved driver information [is needed] to manage network problems (Clifton Bridge).
- The SRN and the MRN require a more reactive system to signal incidents and diversions, with a joined up approach between networks.
- Opportunities to integrate information technology between the SRN and the MRN
- Data sharing across the SRN and the MRN to inform local journeys
- Greater provision of electric vehicle charging facilities to assist road users, particularly away from the main settlements on more rural roads

Engagement quotes from customers and neighbours

Figure 11: Quotes from customers and neighbours

Route satisfaction

Satisfaction scores have been obtained from Transport Focus through their Strategic Roads User Satisfaction Survey from the last 12 months to May 2022. It covers the roads in this route but it should be noted that the satisfaction scores may not fully align with the extent of the roads in the route. Figure 12 shows how satisfied drivers were with aspects of their journey and how they felt during their journey.

Additional comments and data from the Transport Focus survey of drivers on the SRN can be found on the Transport Focus data hub website[20].

The engagement themes and feedback from MPs, interested parties, road users and communities has been considered as part of the wider analysis in Chapter 5.

Strategic roads user survey satisfaction scores

The survey was not run between April 2020 and March 2021 due to COVID-19. It restarted in April 2021 with a new methodology, so results prior to March 2020 and from April 2021 are not directly comparable.

National Highways Region: Midlands,
National Highways Area: Area 7 East Midlands, Area 28 A50 A564
Individual road: A6 A38 A46 A50 A52 A453 A500

Last 12 months*** May 2022 (last 12 months)

** result hidden as less than 75 responses
*** Before March 2019 and from April 2021 to February 2022 this is year-to-date, not past 12 months

Figure 12: Satisfaction scores from headline results

20 Transport Focus data hub: https://transportfocusdatahub.org.uk/

Working with our partners

04 Network collaboration

The strategic road network (SRN) does not exist in isolation. Most journeys on the SRN are part of a longer journey, involving other road networks or different transport modes.

To deliver safe and efficient journeys for our customers and to support economic and housing growth, at National Highways we have built relationships with other organisations to ensure the SRN maximises its contribution to the overall transport system, which includes local roads, rail networks, links with the devolved nations and international connectivity. We work with other network operators (such as Network Rail), airports and ports, Sub-national Transport Bodies, Transport for Wales and Transport Scotland, as well as combined authorities and local highway authorities. This is in line with National Highways' Licence requirements to consider opportunities for collaborative solutions. We recognise that joint early planning of interventions outside our network will ultimately improve the SRN and deliver greater benefit to the customer than could be achieved alone, where this delivers value for money.

An integrated transport network

Route strategies recognise the role that the SRN plays within the wider transport network. In planning for the future of the SRN, we recognise the importance of working closely with other network planners and operators to ensure our transport networks work well together, and that our investment priorities are aligned where possible.

Some parts of our network are operated on our behalf by a third party under Design-Build-Finance Operate (DBFO) arrangements. We work closely with these operators to deliver seamlessly for road users. On the North and East Midlands route this includes the A50, operated by Connect Roads until 2026.

Sub-national Transport Bodies have a key role in their regions in creating transport strategy and identifying key areas for investment, including for highways. There are seven such bodies in England, who are tasked with developing transport strategies and studies for their particular area.

Through the collection of evidence with their local authorities and Local Enterprise Partnerships, their work highlights multimodal issues, needs and opportunities. A list of potential interventions for transport are then provided to the Secretary of State for Transport, including where to prioritise investment in the major road network (MRN). We work closely with the Sub-national Transport Bodies on interdependencies and align our approaches where possible. The Sub-national Transport Body that covers this route is:

- Midlands Connect

National Highways and Sub-national Transport Bodies have worked together to develop an engagement framework. The need for closer working was highlighted as a priority in *DfT's Road investment strategy 2*[21], and within our *Strategic business plan*[22]and *Delivery plan*[23]. It enables National Highways and Sub-national Transport Bodies to work together to achieve mutually beneficial outcomes for transport users, regional economies and the environment. Our approach to engagement is contained in *Our vision for route strategies*[24], which sets out a shared commitment for a continued open, constructive and collaborative relationship. This is supported by engagement and action plans for each Sub-national Transport Body which are proving instrumental in ensuring consistency and transparency in the information we share.

21 Department for Transport (March 2020) *Road Investment Strategy 2: 2020-2025*. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/951100/road-investment-strategy-2-2020-2025.pdf
22 Highways England (2020) *Strategic business plan: 2020-2025*. https://nationalhighways.co.uk/strategic-business-plan/
23 Highways England (2020) *Delivery Plan: 2020–2025*. https://nationalhighways.co.uk/delivery-plan/
24 Highways England (2021) *Vision for route strategies: planning for the future of our roads*. https://nationalhighways.co.uk/media/w0vhd3un/vision-for-route-strategies.pdf

The plans are monitored and reviewed regularly, with annual reviews occurring ahead of each new financial year.

At a more local level we also work with local authorities, who are the highway authorities for local roads, including those on the MRN.

This collaboration ranges from operational matters to more strategic issues to ensure that the overall highway network operates safely, efficiently and effectively, providing high quality and seamless customer journeys. The local authority planning teams work closely with our spatial planning teams. In enabling new employment spaces and homes to be developed, we engage appropriately as a statutory consultee in the planning system and the evidence collected through the route strategies will support this decision making.

Midlands Connect

Midlands Connect is the Sub-national Transport Body for the Midlands and is the transport arm of Midlands Engine (which acts as a focal point to drive economic growth in the region). It is a partnership of local authorities, Chambers of Commerce, Local Enterprise Partnerships, national agencies and airports.

Midlands Connect published its first *Strategy*[25] in 2017, and since then it has researched, developed and progressed transport schemes designed to deliver social, economic and environmental benefits. The 2017 strategy was refreshed in 2022. Midlands Connect's new strategy, *Fairer, greener, stronger: a Strategic Transport Plan for the Midlands*[26], sets out an investment programme that improves strategic connectivity between the East and West Midlands, to neighbouring regions and to Wales.

This strategic investment will be complemented by improvements to local connectivity made by local authorities and regional economic growth plans from the Midlands Engine.

Midlands Connect has identified three grand challenges that strategic transport investment must help tackle to achieve its vision of a fairer, greener and stronger Midlands.

1. **Fairer:** Levelling up and strengthening the region and UK. Being ready for HS2; enhancing quality of life; and integrating transport networks
2. **Greener:** Decarbonising transport and adapting to climate change. Contributing to achieving 'Net Zero ' by 2050; ensuring resilient networks; and minimising the environmental impacts of new infrastructure
3. **Stronger:** Driving resilient economic growth. Providing fast and reliable transport connections; and enabling population and employment growth.

The new *Strategic Transport Plan* sets out five priorities to improve regional connectivity:

- Aspirations for rail
- A future road network that is reliable, resilient and efficient for all
- Helping to move goods
- Responding to transport challenges in rural areas
- Maximising technology-related opportunities to improve connectivity

25 Midlands Connect (March 2017) *Midlands Connect Strategy: Powering the Midlands Engine*. https://www.midlandsconnect.uk/media/1224/midlands-connect-strategy-march-2017.pdf

26 Midlands Connect (April 2022) *Fairer, greener, stronger: a Strategic Transport Plan for the Midlands*. https://www.midlandsconnect.uk/strategy

In terms of roads, Midlands Connect is seeking investment to improve the service to users of the SRN and the MRN, to make best use of technology and help to accelerate use of electric cars and alternatively fuelled goods vehicles, and to futureproof roads against the impacts of climate change and to protect the environment.

Midlands Connect has undertaken studies on a number of important trade and logistics corridors that, if enhanced, could catalyse business growth, boost productivity and support the development of new housing and export markets.

Through these studies, Midlands Connect has identified eleven priority locations for investment during the third road period (2025-2030) where the SRN needs to 'work harder'. In most cases, specific solutions for these locations have not been identified, with multimodal solutions expected to be considered. The priority locations identified on this route are:

- the A46 in the Syston area
- the central section of the A50/A500 corridor
- the A1/A52 junction at Grantham
- M6 Junction 15 (where A500 joins M6)
- M1 Junction 28 (where A38 joins M1)

Interaction with the major road network and local roads

The major road network (MRN) is the middle tier of England's road network, comprising the busiest and most economically important local authority A-roads. It is key to supporting the economic vitality of England, particularly with its role, along with the SRN, of delivering 'first and last mile' connections and onward journeys. It acts as a connecting spine for the SRN, with one of the objectives in establishing the MRN being to support the SRN through improving journeys across both networks. The MRN represents the roads that our partners in local authorities and Sub-national Transport Bodies see as being strategically most important, along with the SRN.

The relationship between the SRN and MRN is complex. The two networks connect people with economically important locations across England, as well as providing resilience for each other. Interventions on one network can also significantly influence travel behaviours on the other. Most SRN journeys involve elements of both networks.

It is therefore important that decisions about the SRN, MRN and other local roads are made in a joined-up way to ensure that the networks are consistent, coherent and complementary. We recognise that the key to the success of the Road Investment Strategy is ensuring the impacts of any interventions are appropriately considered across all networks as well as at their junctions. Both networks play a key role in customers' journeys, and they expect a seamless transition between the two. We are continually seeking to identify collaborative solutions that meet our obligations under the National Highways Licence to improve network performance and provide integration benefits. In developing the route strategies, we aim to ensure the planning for the SRN, MRN and other local roads is complementary.

In the east of the North and East Midlands area, the MRN provides connections from the A46 to Worksop via the A57, Grimsby via the A46 and A15, and Mansfield via the A617, A60 and A38. The A606 links Nottingham to Melton Mowbray.

To the west, the MRN provides connections to the Peak District and Derbyshire Dales via the A6, A52, and A520. The MRN provides links from Stoke-on-Trent to Stafford via the A34, and Leek via the A52 and A520.

Freight and logistics

The Future of Freight: a long-term plan (DfT June 2022)[27] sets out priorities for the UK's freight industry. It recognises that in 2019 the sector contributed 10% of the UK non-financial business economy and £127 billion gross value added (GVA) through more than 200,000 enterprises, noting that, with imports and exports comprising 63% of gross domestic product (GDP) in 2019, we are reliant on the freight and logistics sector for our economic wellbeing.

In the UK, around 1.65 billion tonnes of freight are lifted by all modes each year. Of this, approximately 400 million tonnes are carried by road through the Midlands region.

There is more warehousing space in the East Midlands than any other region, accounting for nearly 20% of the UK total, and providing facilities for retail, transport, manufacturing, food and other sectors.

The route is home to a large number of national distribution centres, concentrated within the 'Golden Triangle'[28] of wholesale and retail, transportation and storage activities in the area bounded by Nottingham, Birmingham and Milton Keynes.

There are also two intermodal rail freight terminals: East Midlands Distribution Centre (EMDC) at Castle Donington, and SEGRO logistics Park (East Midlands Gateway).

East Midlands Airport has the largest dedicated air freight operation, home to several international distribution companies, and handling over 440,000 tonnes of goods each year[29]. Distribution centres operate within and adjacent to the airport, including East Midlands Gateway (EMG).

The airport and EMG (known collectively as 'EMAGIC') is one of the three main sites comprising East Midlands Freeport, along with the Ratcliffe-on-Soar Power Station site and the planned East Midlands Intermodal Park (EMIP) south of Derby. Good strategic connectivity via the SRN and rail network will be important to the Freeport's ability to bring together investment and deliver economic regeneration in the area.

The A50 in particular serves a critical role in national, regional and local distribution networks. The percentage of heavy goods vehicles using the route is highest on the A38 and A50, where heavy goods vehicles are over 16% of all traffic.

The published *National Survey of Lorry Parking*[30] undertaken by the Department of Transport in 2017 showed that this part of the country therefore needs a higher level of parking provision not only for heavy goods vehicles serving the large distribution centres, but because it is an important stop-off point for transit traffic moving from mainland Europe to Scotland, the North and Ireland.

The survey found that the East Midlands had more lorries parking than there was space, with the West Midlands region close to exceeding capacity. The level of inappropriate parking in lay-bys and local roads was also found to be high, particularly in the East Midlands. This was linked to the high number of distribution hubs with surrounding A-roads that lack rest areas.

27 Department for Transport (June 2022) *Future of Freight: a long-term plan.* https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1085917/future-of-freight-plan.pdf
28 There is no formal definition of the 'golden triangle'. It is generally accepted to be an area bounded by Nottingham, Birmingham and Milton Keynes, served by the M1, M6 and M42 motorways.
29 East Midlands Airport website. https://www.eastmidlandsairport.com/about-us/cargo/
30 AECOM on behalf of the Department for Transport (2018) *National Survey of Lorry Parking*. https://www.gov.uk/government/publications/national-survey-of-lorry-parking

Diversionary routes

To operate a resilient road network, we need to be able to effectively divert traffic off the SRN in the event of unplanned incidents (such as collisions or emergency roadworks), or as part of planned closures (such as planned improvement schemes). The MRN, along with the rest of the local road network, supports the SRN as diversion routes during these events.

We have agreed diversion routes for emergency events with local authorities. Diversion routes for planned events are discussed and agreed with local authorities on a case-by-case basis. These routes are dependent upon the nature of the incident, and the suitability and availability of the surrounding network. In some cases, the diversion route may not be suitable for certain types of traffic, such as heavy goods vehicles (HGVs), or non-motorway traffic, such as cycles and tractors. In other cases, diversionary routes may not be available due to events on the local road network. We work closely with local authorities to ensure that suitable diversion routes are available.

Network Rail and other network operators

The SRN plays an important role in the movement of passengers and freight across England, and it needs to be considered alongside the wider transport network. The rail network is also important in moving freight and people over longer distances and helping commuters travel into congested cities. Better integration between road and rail can help to transfer more journeys onto rail. This can help to relieve congestion on the SRN, as well as improve the environment by increasing the use of more sustainable transport modes.

At a strategic level we work closely with Network Rail and train operators to find opportunities to better integrate the two networks to benefit the movement of freight and people. This involves seeking opportunities to place rail stations in strategically important locations with easy access to the SRN.

The Network Rail Delivery Plan[31] presents a vision of "putting passengers and freight users first". This recognises that Network Rail can improve the daily lives of people across the country by striving to constantly improve the quality of its service across the whole railway system. Network Rail delivers its vision through a regional structure committed to responding to the needs of local customers and interested parties, more quickly than if such decisions were to be made at a national level.

Several important rail stations are located near to the North and East Midlands route. These include Nottingham, Derby, East Midlands Parkway, Leicester and Stoke-on-Trent which provide connectivity to London, Birmingham and the South West, Sheffield and further north. The route provides critical highway access to a Strategic Rail Freight Interchange located at East Midlands Gateway, part of the future Freeport site.

The eastern leg of High Speed 2 (HS2) will be built from the West Midlands to East Midlands Parkway by the early-mid 2040s. From here, HS2 trains will continue directly to Nottingham, Derby, Chesterfield, and Sheffield on the upgraded and electrified Midland Main Line.

We also work with the operators and promoters of urban rapid transit systems where there are opportunities for better integration. For example, through the creation of park and ride sites to remove traffic from the road network.

31 Network Rail *Our Delivery Plan for 2019-2024.* https://www.networkrail.co.uk/who-we-are/publications-and-resources/our-delivery-plan-for-2019-2024/

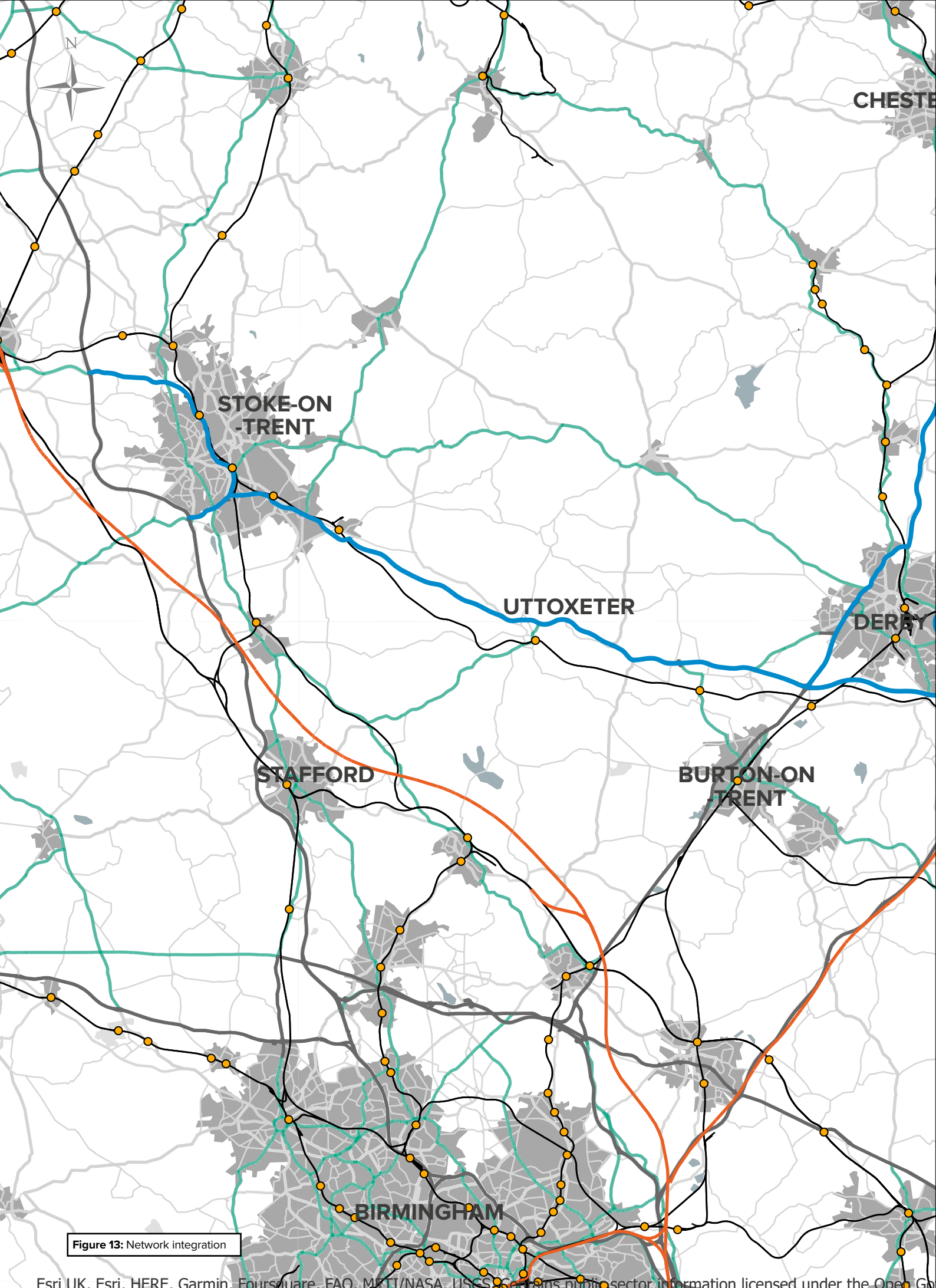
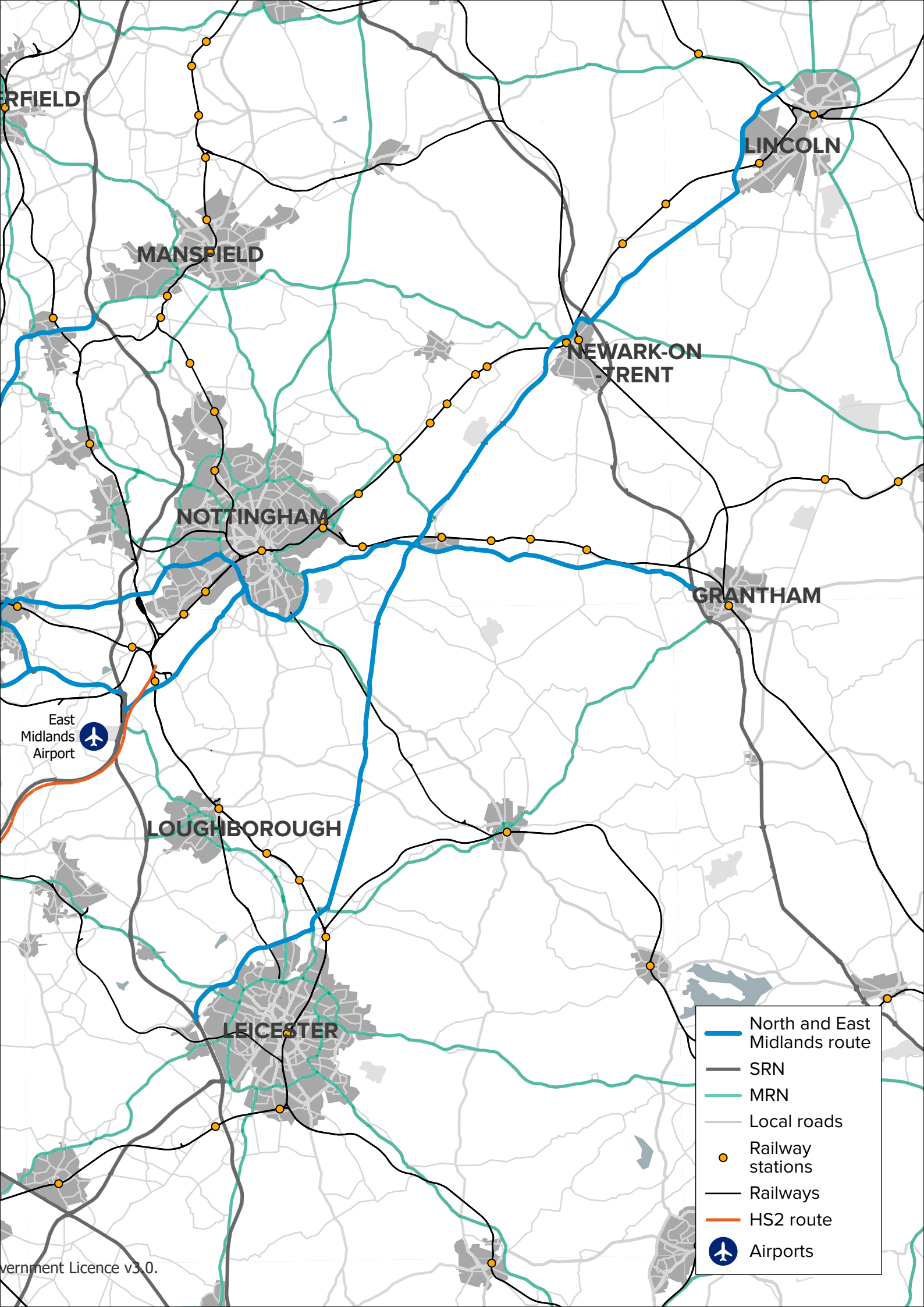


Figure 13: Network integration



Strategic connectivity

The SRN plays a key social and economic role in connecting England with the devolved authorities of the UK, particularly Wales and Scotland, but also, via ports, Northern Ireland. We work closely with Transport for Wales and Transport Scotland to ensure our key cross-border routes are joined up effectively with those in Wales and Scotland to ensure easy journeys for our customers. This strategic connectivity is reflected in the Government's commitment to strengthening transport connections across the UK, guided by Sir Peter Hendy's *Union connectivity review*[32] published in late 2021. The report recommends the creation of UKNET, a strategic transport network spanning the entire United Kingdom. UKNET would be based on a series of principal transport corridors between key urban and economic centres, including international gateways. The findings of this report have been considered in our route strategies, particularly for our cross-border routes and roads connecting to important ports.

The North and East Midlands route provides key connections to important road links between England, Wales and Scotland, including the A5, A483 and A458 to north and mid Wales (Midlands and Gloucestershire to Wales route) and the M1 (London to Scotland East (South) route), A1 (London to Leeds route) and M6 (London to Scotland West (South) route) towards Scotland. These are important routes for both passengers and freight and many of the objectives for the SRN in this area have been driven by the context of improving connectivity.

International connectivity

One of the objectives of the SRN is to support the important economic activity involved in international passenger and freight movement via good connections to ports and airports. A key aspect of route strategies is ensuring that future investment continues to support these essential movements.

For this North and East Midlands route, the A50, A453 and A52 provide connectivity to East Midlands Airport, for freight and passengers. The A46 also provides links to the ports of Immingham and Grimsby.

32 Hendy, P. (November 2021) *Union Connectivity Review: Final Report*. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1036027/union-connectivity-review-final-report.pdf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Challenges and issues on the route

05 Challenges and issues

We recognise that there are existing challenges and issues on the network and these are outlined against the Department for Transport's six strategic objectives as part of the route strategy evidence base.

1. Improving safety for all

The International Road Assessment Programme (iRAP) Star Ratings are based on road inspection data and provide a simple and objective measure of the level of safety which is 'built-in' to the road. The higher the star rating, the safer the road. iRAP Star Ratings are produced for each 100-metre section of road, based on detailed inspections of roadside features as well as traffic flow, speed, pedestrian and cyclist use, and crash data.

iRAP data helps us to predict future risk within a wider Safe System approach. Safe System thinking accepts that humans will make mistakes but considers what is within the scope of our influence to limit the injuries sustained. The iRAP approach to managing future risk complements the more traditional approach of analysing historical incident data provided by STATS19 as a means of predicting future collisions and casualties.

STATS19 data are the statistical data published by the Office for National Statistics about personal-injury road traffic collisions reported to the police. STATS19 remains the most detailed, complete, and reliable single source of information on road casualties covering the whole of Great Britain, in particular for monitoring trends over time.

For the purposes of National Highways Route Strategies, the total fatal and serious injuries are aggregated by the section of road on which they occurred, based on the National Traffic Information Service (NTIS) network.

The NTIS network used for displaying traffic data is the full extent of the roads for which National Highways are the highway authority. The NTIS network is modelled for each side of the carriageway, such that NTIS links are one-directional and split at junctions. The data used only includes main carriageways; slip roads, roundabouts and other types of road are not modelled in this dataset. The length of an NTIS link can vary greatly depending on what part of the network it represents. Use of the NTIS network provides a common geometry which can be used to compare the STATS19 data with network performance and other metric data.

A combination of star ratings and historic data can help us to prioritise route treatments. Where the density of incidents resulting in death or serious injury is high, and the star rating is low (poor), it indicates something can be done to prevent future collisions where people are killed or seriously injured.

The Road Safety Foundation (RSF) produces maps that show the statistical risk of fatal or serious injury crash occurring. The risk is calculated by comparing the frequency of road crashes that result in death and serious injury with how much traffic each road is carrying. For example. the risk on a road carrying 10,000 vehicles a day with 20 crashes is ten times the risk on a road that has the same number of crashes but which carries 100,000 vehicles.

The latest available iRAP data show that the following sections of the route are rated as 1-star or 2-star (the lowest safety categories):

- the A52 east of Nottingham to Grantham
- the A46 at Newark-on-Trent
- the A46 at Lincoln
- the A38 north-west of Derby
- the A52 between Derby and Nottingham
- the A50 at Uttoxeter and south-east of Stoke-on-Trent
- the A46 around the north of Leicester

STATS19 data show that there are collisions where people were killed or seriously injured on the:

- A50 south of Derby
- A52 west of Grantham
- A52 east of Nottingham
- A46 north of Leicester
- A500 Stoke-on-Trent

Using the latest available data the following parts of the route are classified as medium risk roads by the Road Safety Foundation Crash Risk Mapping:

- the A46 around Newark-on-Trent
- the A46 between A1 and Lincoln

Improving safety and minimising collision rates is a key consideration for all our routes

Key challenges

There are route sections which have low safety ratings from both iRAP and/ or the Road Safety Foundation Crash Risk Mapping. The following sections of the route have the lowest iRAP ratings of 1 or 2:

- the A52 between Nottingham and Grantham
- the A46 at Newark-on-Trent
- the A46 at Lincoln
- the A38 north-west of Derby
- the A52 between Derby and Nottingham
- the A50 at Uttoxeter and south-east of Stoke-on-Trent
- the A46 around the north of Leicester


Diverted traffic
A46
A607
A607
(M1)

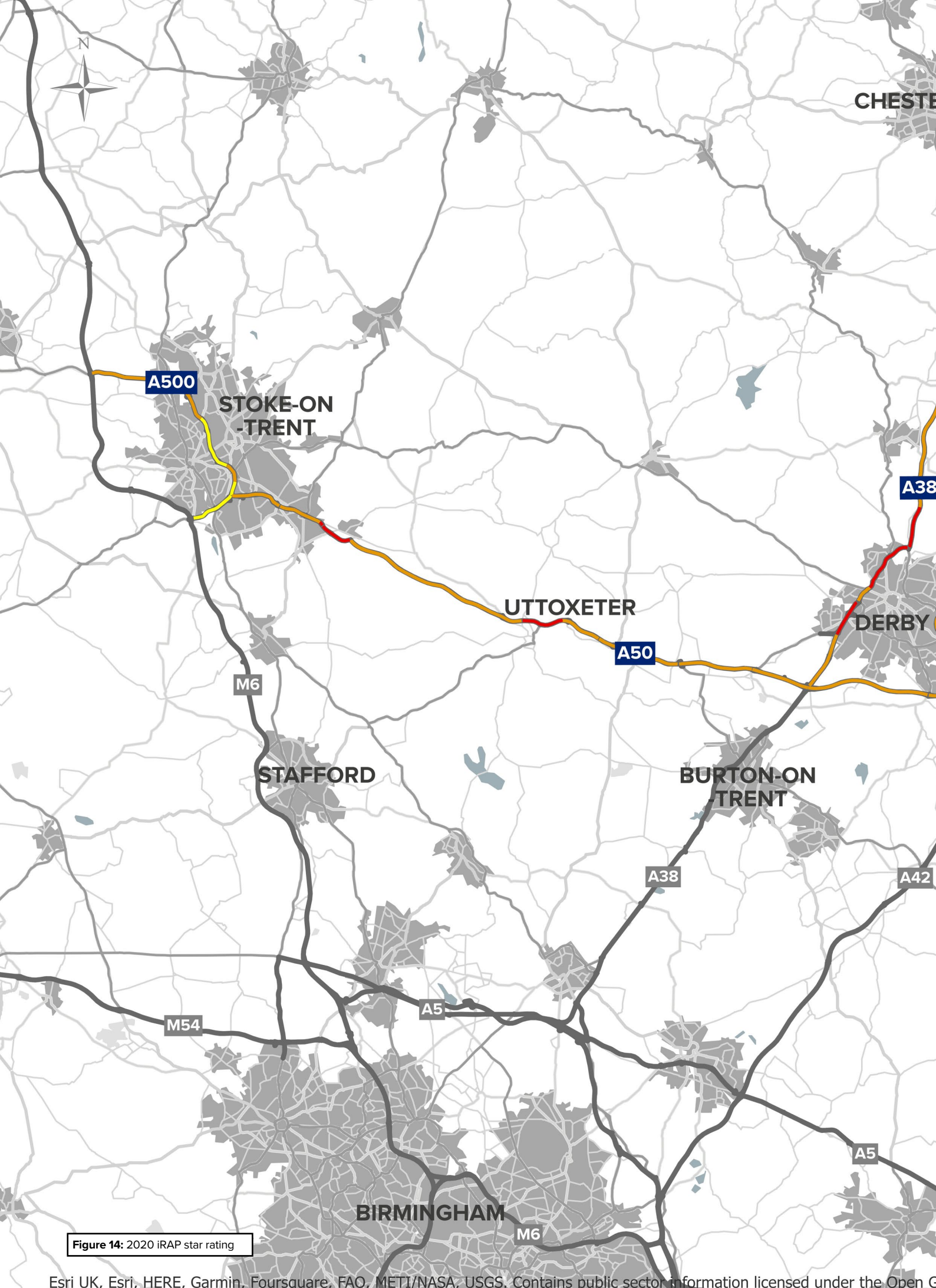
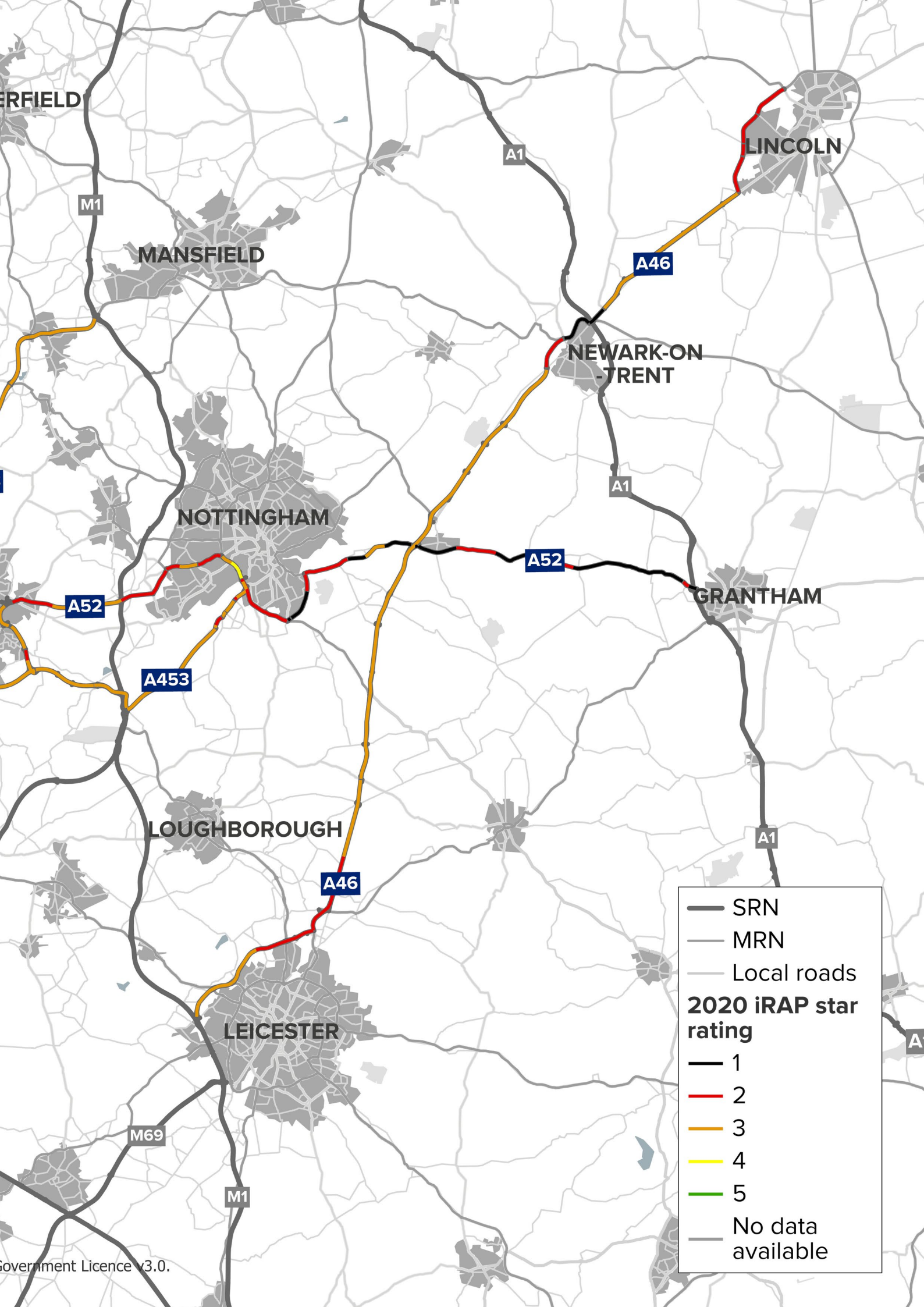


Figure 14: 2020 iRAP star rating


ERFIELD
LINCOLN
A1
M1
MANSFIELD
A46
NEWARK-ON
-TRENT
A1
NOTTINGHAM
A52
A52
GRANTHAM
A453
LOUGHBOROUGH
A1
A46
LEICESTER
M69
M1
SRN
MRN
Local roads
2020 iRAP star rating
1
2
3
4
5
No data available
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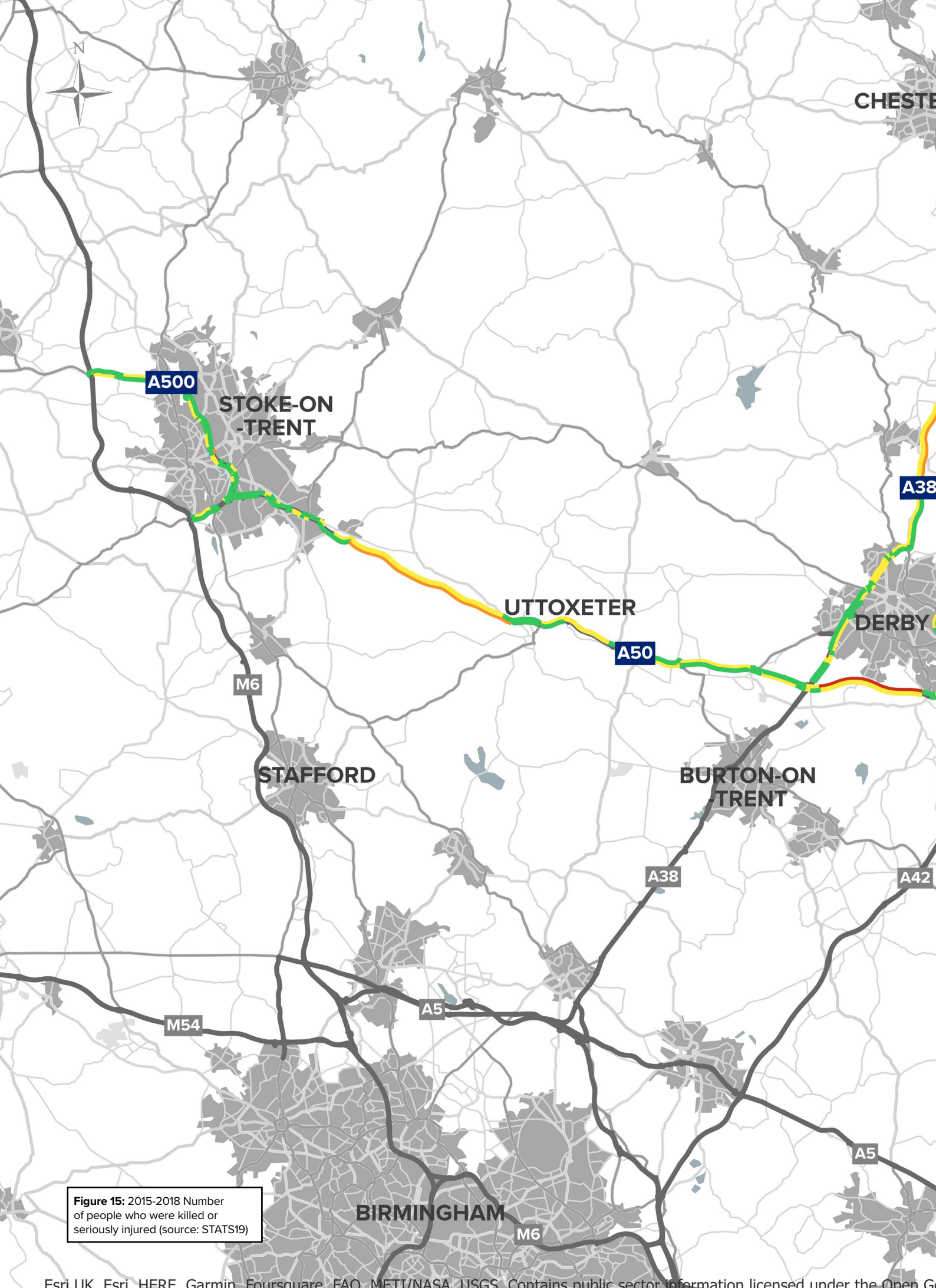
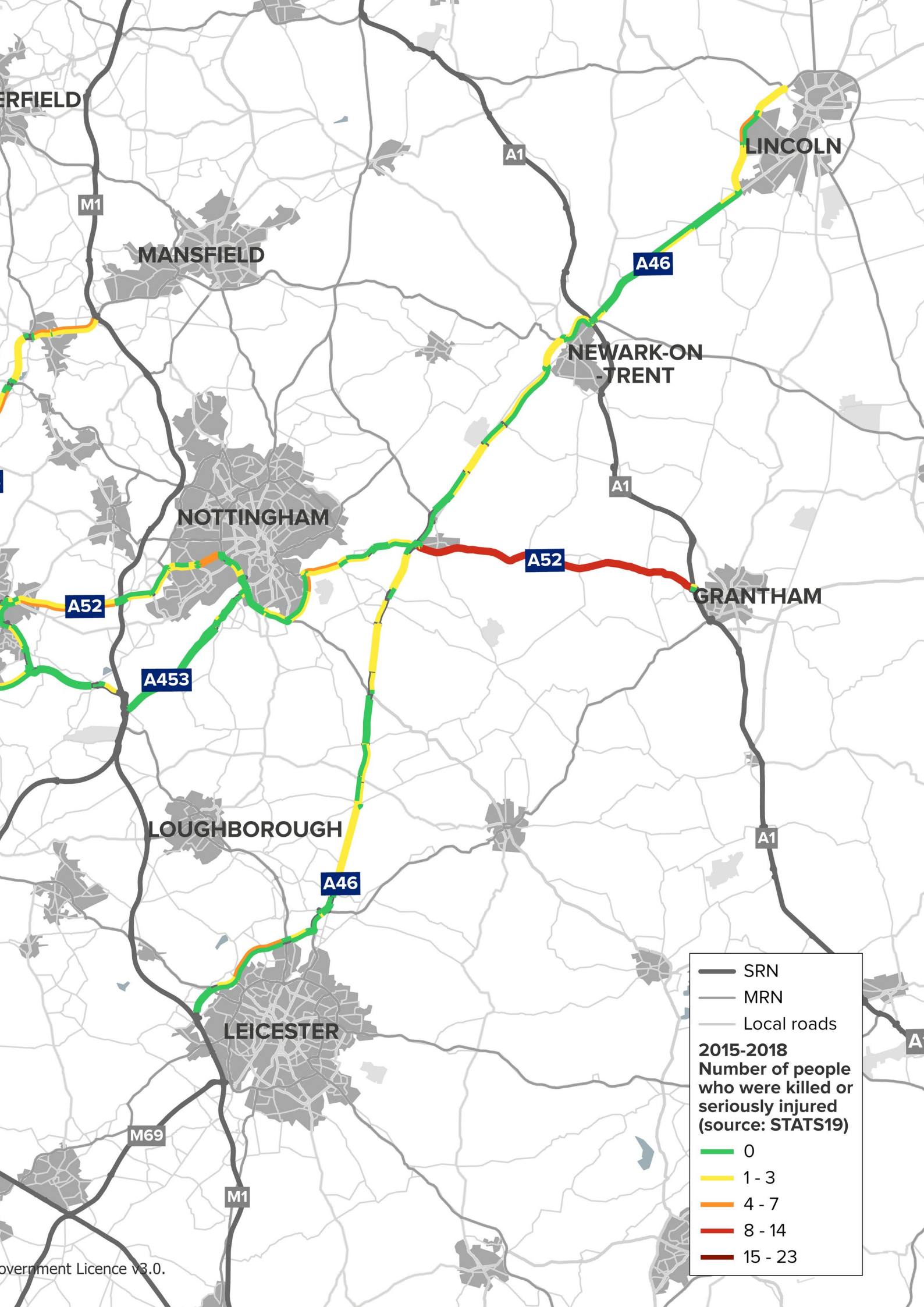


Figure 15: 2015-2018 Number of people who were killed or seriously injured (source: STATS19)



2. Network performance

Network performance is measured by average peak period delay, seasonal delay, and journey time reliability. Many sections of the North and East Midlands route experience one or more of these types of delay.

Unreliability of journey times is evident for the A500 around Stoke-on-Trent, the A50 at Uttoxeter, on the A38 north of Derby and on the A46 at Newark. Figure 16 shows sections of the route which experience long average morning peak delays are:

- the A46 across the north of Leicester between M1 Junction 21A and Hobby Horse Roundabout
- the A46 around Newark and its junction with the A1
- the A46 around Lincoln
- the A52 from its junction with the A46 to the east of Nottingham
- the A453 to south of Nottingham through Clifton
- the A500 around Stoke-on-Trent
- the A38 around Derby and on the northbound approach to M1 Junction 28 Pinxton Interchange

We want to improve journey times on route sections which currently experience high levels of delay and are expected to worsen in the future

The A46 to the north of Leicester at the junction with the A607 (Hobby Horse Roundabout) is heavily congested, particularly at peak times. Average peak period delays in this section are over 30 seconds per vehicle per mile (pvpm) in both the morning and evening peak periods.

The A50 at Uttoxeter and A500 Stoke-on-Trent also experience average peak period delays greater than 50 seconds pvpm, making this an unreliable section of the route.

The A46 between Leicester and Lincoln has a number of sections where delays occur.

Average peak period delay is measured in seconds per vehicle per mile and is the difference between average delay in the morning or afternoon peak period and the average delay during free flow conditions.

Seasonal delay refers to the difference between the average afternoon peak delay for Fridays in August 2019 (high demand in summer holidays) and the average delay during very low demand periods (in this case, Christmas day is used). This measure is designed to reflect the parts of the network that do not appear to have a problem on average over the year but have seasonal peaks.

Seasonal delay is of interest to tourist traffic, particularly people travelling to airports, or other destinations where arriving later than intended could have significant implications.

Reliability is the difference between the typical travel time, allowing for average peak period delays, and the observed travel time. This measures the amount of variation due to unexpected variations or unplanned events. Like delay, it is measured in seconds per vehicle mile. It is a concern for most drivers, but particularly affects just-in-time freight traffic and other strategic journeys.

This is mainly where the A46 intersects with other arterial routes, for example the A1 Newark on Trent where average peak period delays of 50 to 80 seconds pvpm are seen, or where there is significant interaction with local traffic, for example the Lincoln bypass.

The A52 around Nottingham experiences average peak period delays of over 60 seconds pvpm at junctions such as Wollaton Park and Queens Medical Centre, but also where there is interaction with local traffic and pedestrians or cyclists. The A38 north of Derby approaching M1 Junction 28 experiences significant average peak period delays of over 30 seconds pvpm and interested parties have concerns that this may be exacerbated by planned A38 Derby Junctions scheme improvements to the Kingsway junction, Markeaton Island and Little Eaton Island, thereby pushing the delay further north on the A38.

The A38, A50, A500 and A46 are key routes for freight and manufacturing, and reliability can negatively impact businesses such as JCB (Uttoxeter), Toyota (A50), East Midlands Gateway and Rolls Royce (Derby).

Interested parties state that there is a lack of resilience on the M1 when there is an incident or collision, exacerbated by a lack of alternative north-south routes in some locations, for example north of East Midlands Airport. Interested parties have also stated that congestion levels also contribute to incidents and collisions, worsening the problem, and that delays and incidents on the M1 can cause traffic to divert onto less suitable roads, affecting local communities.

The percentage of heavy goods vehicles using the route is highest on the A38 and A50 where heavy goods vehicles are over 16% of all traffic.

National Highways has a suite of five regional traffic models (RTMs) covering England's strategic road network. The models allow us to identify future performance and delay on the network, assisting with the development of the route strategies. The RTM models use projected growth, expected trends and changes to the network (including National Highway's RIS2 schemes) to forecast the performance of the network in 2031.

Where delays currently exist, they are forecast to increase further by 2031, particularly where there is planned development, such as south of Stoke- on-Trent (A50/A500), south of Derby (A6 and A50). Figure 17 shows that delays are also forecast in other areas, such as the A52 through Nottingham and the A38 on the approach to M1 Junction 28 where the average morning peak delay increases to over 60 seconds pvpm by 2031.

Key challenges

- Traffic on sections of the A50, A52, A38 and A46 can experience high levels of delays across the day, particularly during peak periods
- Where delays currently exist, they are forecast to increase further by 2031

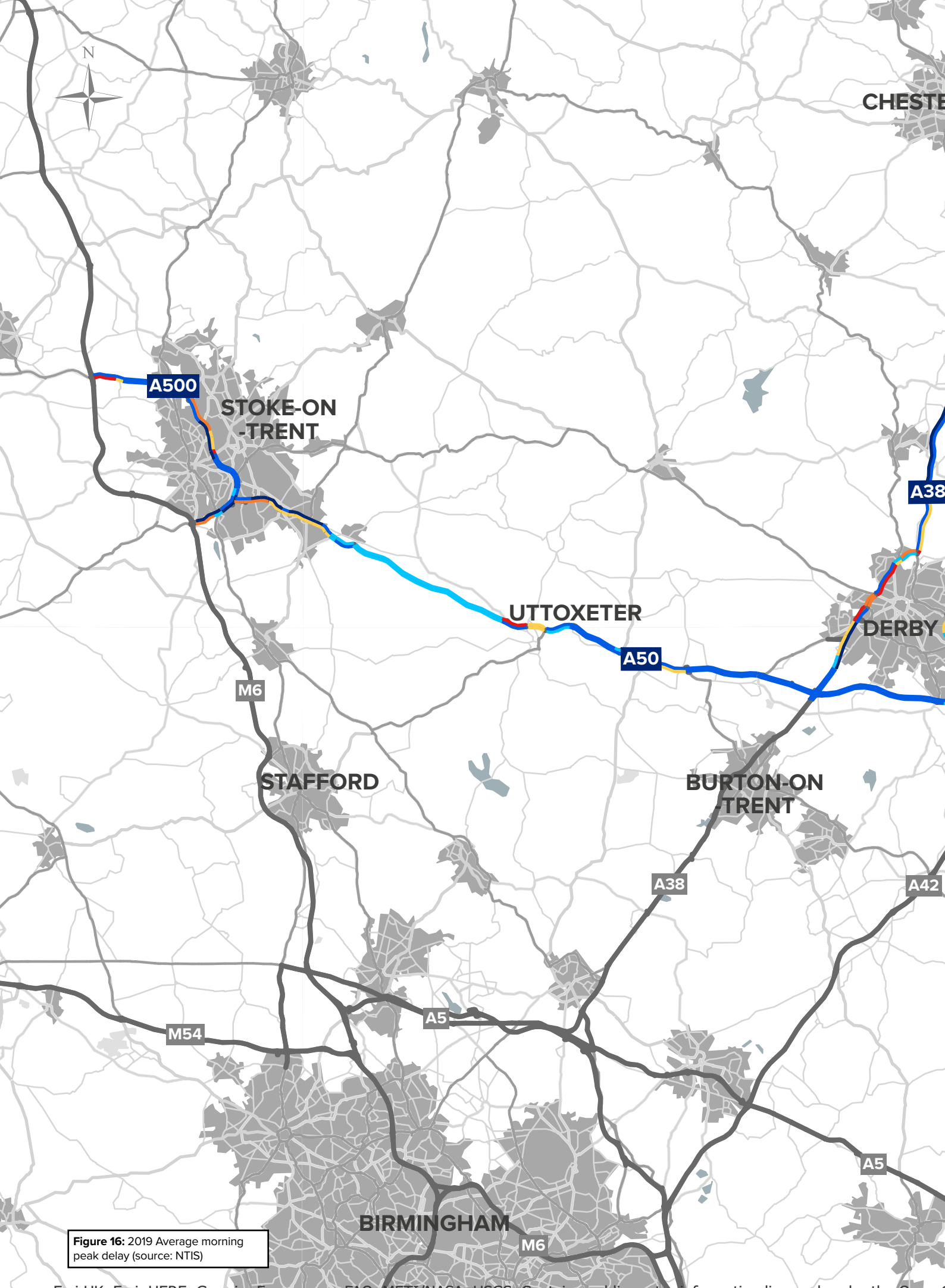
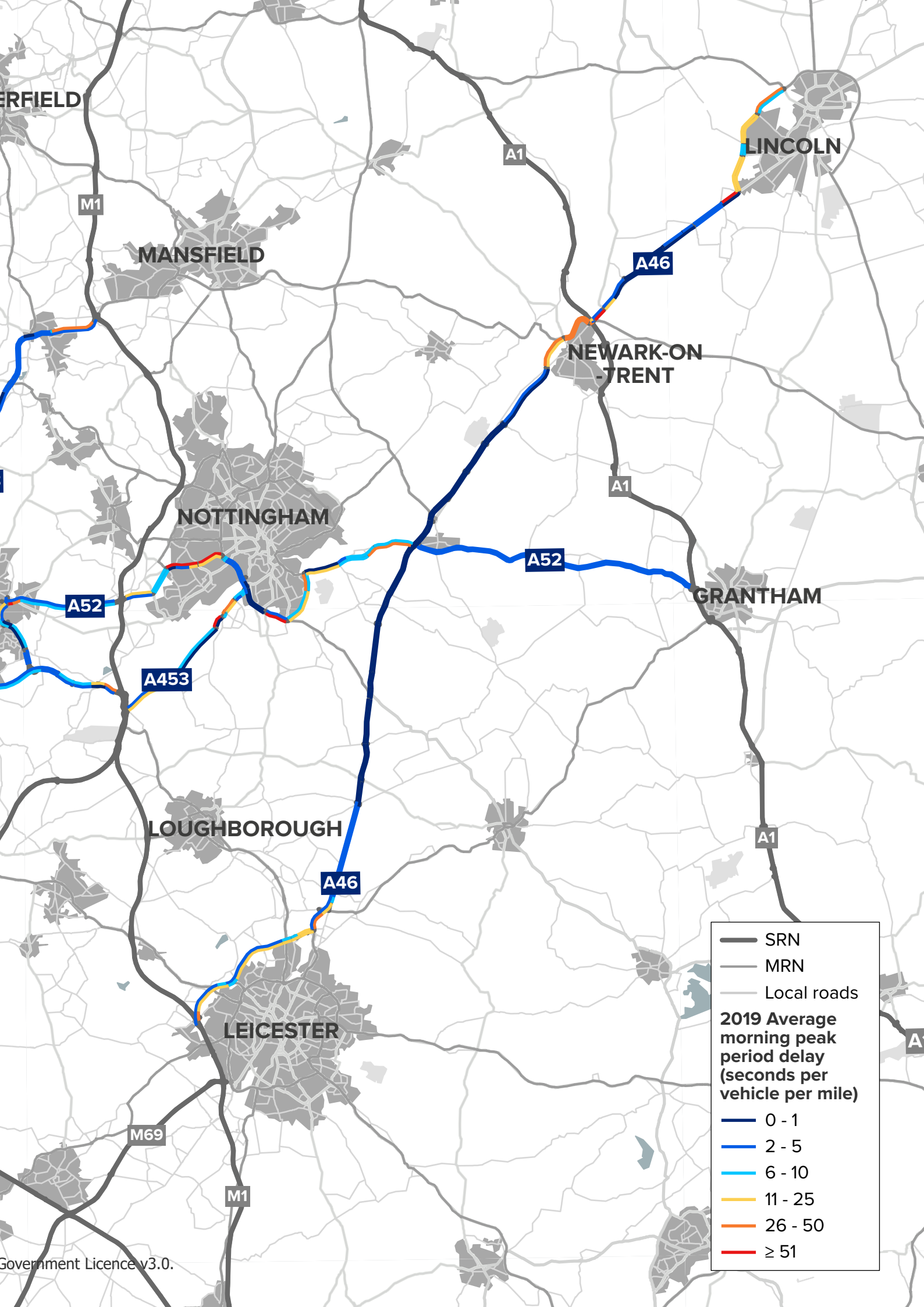


Figure 16: 2019 Average morning peak delay (source: NTIS)



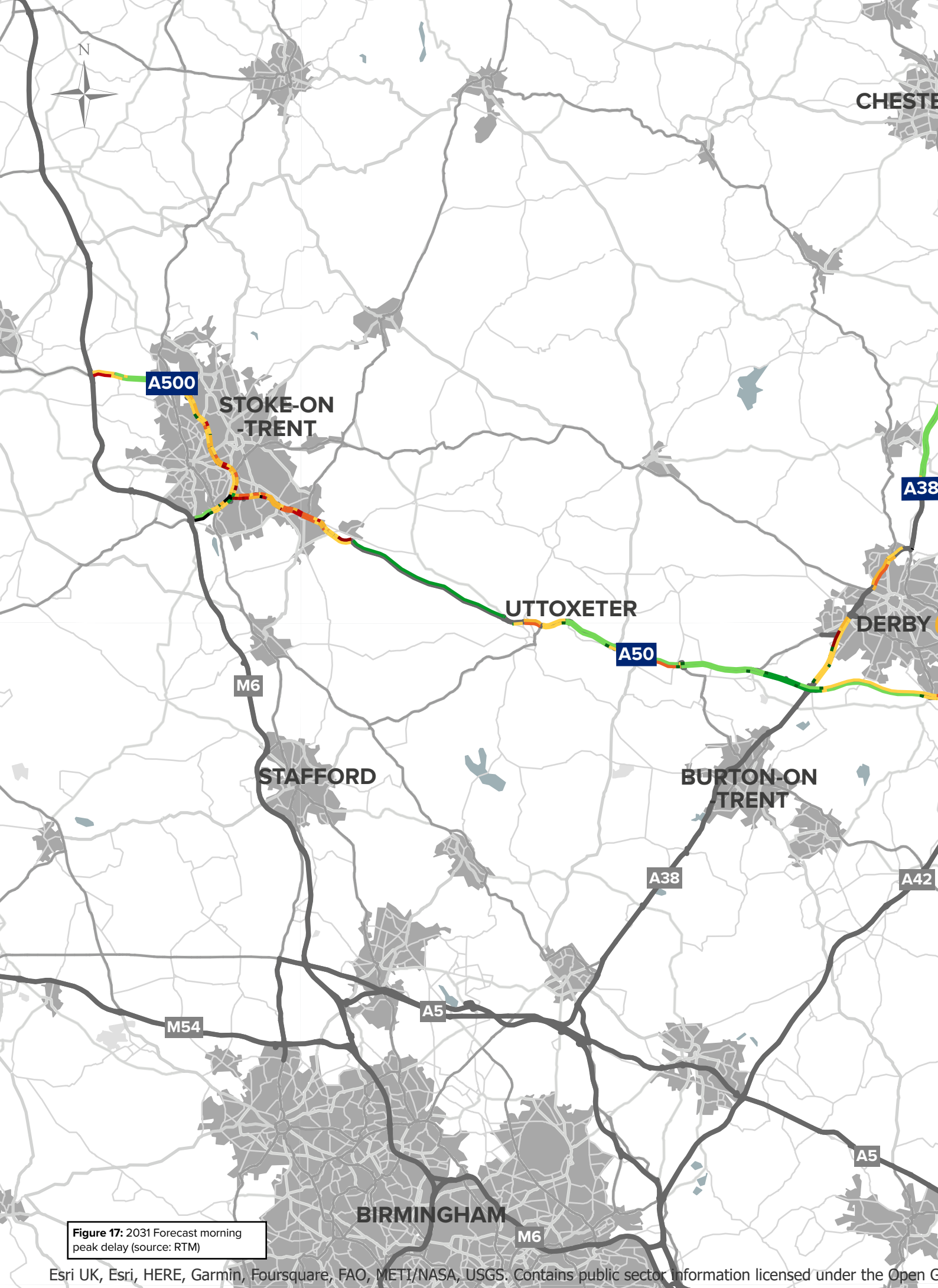
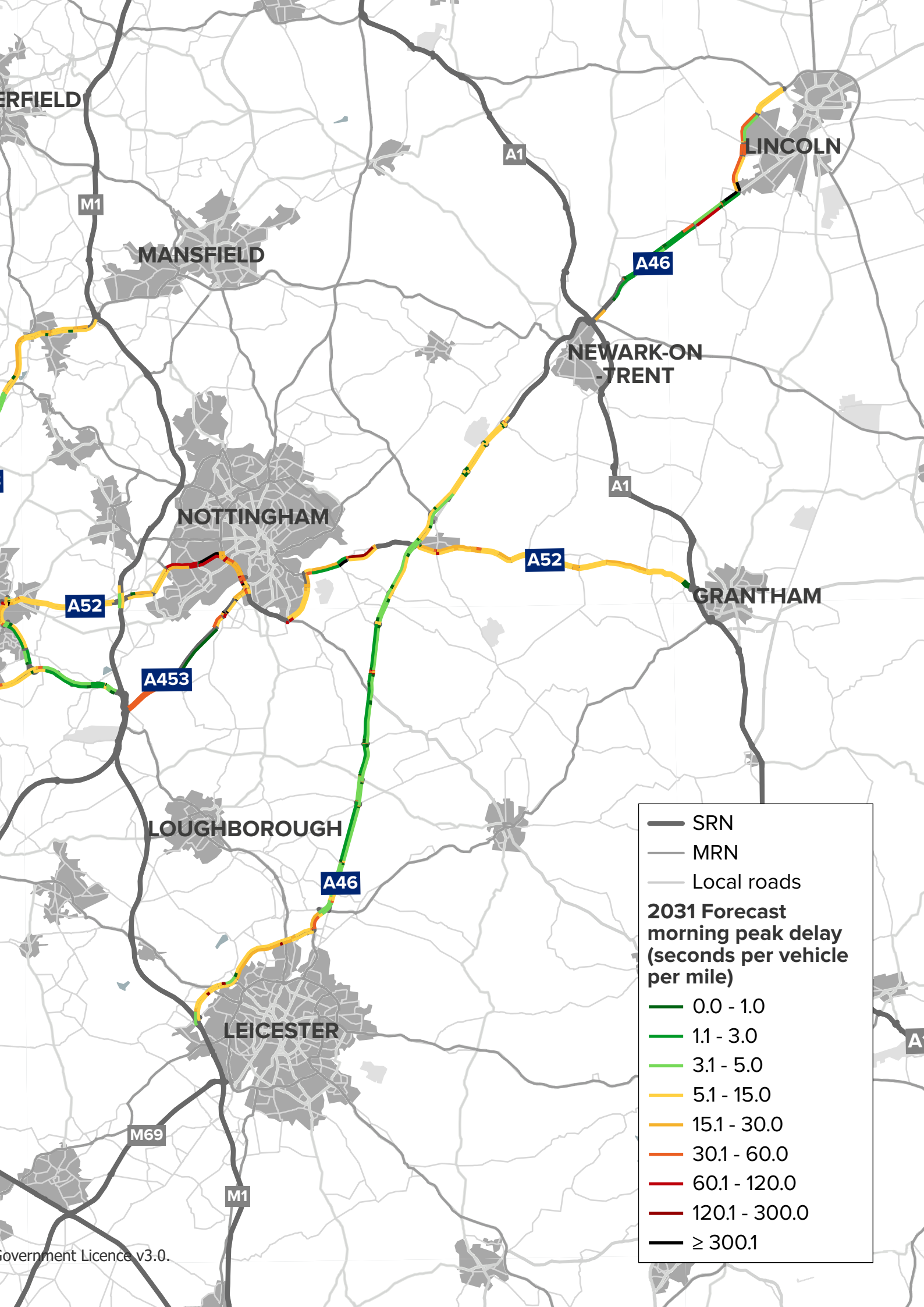


Figure 17: 2031 Forecast morning peak delay (source: RTM)



3. Improved environmental outcomes

Climate change is affecting society as a whole, and the transport sector is no exception. As the government-owned company tasked with building and maintaining the strategic road network (SRN), we need to show both how we can help tackle the causes of climate change and how we are preparing for a changing climate. In 2021 we published our *Net zero highways* plan[33] to show how we will meet the target of net zero greenhouse gas emissions.

The latest climate projections from the Met Office have helped us to understand how the climate is changing, including that summers will on average be hotter and drier, while winters will be milder and wetter and critically, that extreme weather will become more common. We have also seen, from reports such as the *Climate Change Committee's*[34] third and most recent independent assessment of climate risk, that there are key risks from a changing climate for infrastructure, such as risks to bridges from flooding and erosion and risks to subterranean and surface infrastructure from subsidence.

We are committed to net zero carbon construction by 2040 and net zero carbon travel by 2050. This will involve significant changes to the way we build and manage our network, including in the including in the North and East Midlands route. We will need to consider better integration with other transport modes and how to support the transition to electric cars and zero carbon heavy goods vehicles.

Much of the route passes through or close to urban areas. There are a substantial number of receptors within 300 metres of the carriageway which may experience higher noise levels on the A38 near Derby and the A52 (Derby to M1; between the A46 and A1 and south of Nottingham). There are many Noise Important Areas along the route, reflecting the urban nature of a large part of the areas through which it passes. There are also several concrete road sections remaining on the A52 which may cause increased noise for residents, in particular the A52 at Bottesford.

Air quality describes how polluted the air we breathe is. Poor air quality can cause both short-term and long-term effects on the health of humans and other living beings. The amount of air pollution depends on the concentrations of different substances in the atmosphere, such as sulphur dioxide, oxides of nitrogen, and particulate matter. In the UK, the concentrations of these pollutants are regulated and regularly monitored. If a local authority identifies any locations within its boundaries where targets are not being achieved, it must declare an Air Quality Management Area (AQMA) and put together a plan to improve air quality in that area.

While noise is often an inevitable consequence of societal activities, it can have serious implications for human health, quality of life, economic prosperity and the natural environment. Elevated levels of noise, particularly from traffic, can be associated with heart attacks, strokes and hearing impairment, as well as sleep disturbance and annoyance. While there's no legal limit to road noise, environmental noise regulations in the UK require regular noise mapping and the creation of action plans for Noise Important Areas (areas exposed to the highest levels of noise).

Severance is where transport infrastructure or motorised traffic passes through settlements and acts as a physical or psychological barrier, limiting people's ability or desire to move through that area. This can reduce accessibility to key services, and damage local social networks and community cohesion.

33 National Highways (2021) *Net zero highways: our 2030 / 2040 / 2050 plan.* https://nationalhighways.co.uk/media/eispcjem/net-zero-highways-our-2030-2040-2050-plan.pdf

34 Climate Change Committee (June 2021) *Independent Assessment of Climate Risk.* https://www.theccc.org.uk/publication/independent-assessment-of-uk-climate-risk

The Derwent Valley Mills UNESCO World Heritage Site is close to the route, the southern part of which meets the A38 north of Derby.

In terms of air quality, the route sections where there is a high number of receptors within 100 metres of the route which may be more likely to experience adverse air quality impacts are:

- the A50 south- east of Stoke-on-Trent
- the A38 west and north of Derby
- the A6 south of Derby
- most of the A52 between Derby and Grantham
- the A46 Newark-on-Trent
- the A46 section adjacent to Leicester

Large Air Quality Management Areas cover most of Nottingham (including parts of the A52 and A453) and Stoke-on-Trent (including parts of the A50 and A500). There are also smaller Air Quality Management Areas in Derby, Castle Donington, Kegworth, Leicester, Grantham and Lincoln.

Severance by main roads and the lack of provision of active travel facilities are major concerns for interested parties. The A52 through Nottingham lacks active travel facilities, as does the A46 and A50, particularly where they pass through the many communities along its route. The A500 runs through significant urban areas in Stoke-on-Trent, with limited facilities for pedestrians and cyclists.

Interested parties would like to see reduced greenhouse gas emissions by providing alternative modes of travel and encouraging a lower share of journeys to be made by car, and better managing the SRN.

Where possible we will seek to protect environmentally important locations and reduce air quality and noise impacts on communities served by the route

Key challenges

- A desire to maintain and protect areas of outstanding natural beauty with environmental designations and cultural heritage
- A large number of receptors which may be more likely to experience adverse air quality impacts are within 100 metres of the route, or are within designated Air Quality Management Areas
- A substantial number of receptors within 300 metres of the route which may experience increased levels of noise or are within a Noise Important Area
- A desire to reduce severance impacts on local communities
- A desire to minimise greenhouse gas emissions
- A desire to build resilience to future climate change

4. Growing the economy

The main centres of employment along the route are Stoke-on-Trent, Burton-on-Trent, Derby, Leicester, Nottingham and Lincoln but there are also significant centres of employment at JCB, Toyota and East Midlands Airport. A number of Economic Opportunity Areas are served by the route:

- East Midlands Airport
- Leicester City Centre
- A50 corridor
- Loughborough and Leicester Science and Innovation Enterprise Zone
- Ceramic Valley Enterprise Zone
- Nottingham Enterprise Zone
- Nottingham City Centre

Some of the areas served by the route are in the highest 25% most-deprived parts of the UK[35] parts of the urban areas of Stoke-on-Trent, Derby, Leicester, Nottingham, Newark and Lincoln fall particularly into the 10% of most-deprived areas. Much of the route falls into a medium category in terms of levelling up (categorisation used to inform the levelling up agenda) with Stoke, Uttoxeter, parts of Derby and around Newark falling into the greatest need category (based on productivity, unemployment Performance Indicators and shows the condition and skills, transport connectivity and commercial and residential vacancy rates)[36].

Interested parties noted that for some areas served by the route, reliable road and rail connections to key employment and service destinations are required to provide opportunities beyond those available within local areas. All of the strategic road network (SRN) in the route is vital to the economies of the Midlands, and beyond, as well as supporting local traffic and employment links across the region and supporting planned housing development.

The strategic road network has a critical economic function in supporting national and cross-border connectivity and areas with high levels of deprivation

The economy of the East Midlands has a high share of businesses in sectors which are dependent on the SRN, such as primary materials, manufacturing and construction, in addition to logistics. Despite the importance of good connectivity to the economic success of the region, connections across the area by road can be unreliable due to existing congestion and delay problems and impact of incidents on other parts of the SRN such as the M1. Significant growth in economic activity and jobs is expected throughout the corridor, particularly in economic opportunity areas associated with the logistics sector. Locations where growth is expected include:

- around East Midlands Airport (including the Freeport sites)

Key challenges

- The A50, A46 and A38 are important to the economy of the North and East Midlands including the warehousing and logistics sectors
- Significant growth in economic activity and employment is expected along the route around East Midlands Airport and south of Derby
- Significant housing growth is expected close to many of the cities and towns along the route

35 Ministry of Housing, Communities & Local Government (September 2019) *English indices of deprivation 2019*. https://www.gov.uk/government/statistics/english-indices-of-deprivation-2019

36 Department for Levelling Up, Housing and Communities (March 2022) *Levelling Up Fund Round 2: updates to the Index of Priority Places*. https://www.gov.uk/government/publications/levelling-up-fund-round-2-updates-to-the-index-of-priority-places

5. Managing and planning the SRN for the future

Maintaining the strategic road network

We deliver a comprehensive programme of maintenance to keep our assets in the right condition to provide our customers with the right level of service; ensuring that the road network remains safe and fully open for use. We collect data on the condition of all of our assets so that our teams of specialist engineers can fully understand their current condition and identify the optimum time to intervene, maintaining the asset and replacing parts before they fail and impact customer journeys.

Our asset inspections to collect much needed condition data are undertaken through a number of methods - survey vehicles collecting road surface condition for the whole of the network every year right through to structures inspections, where we undertake over 23,000 inspections of individual structures every two years. The majority of our asset routine maintenance activities and the replacement of thousands of asset components as they near end of life are undertaken at night to minimise customer disruption, meaning that most of this work is never seen.

Road surface

The measure for road surface condition has been updated for 2022/23 onwards. The condition is reported as one of our Key Performance Indicators and shows the condition of all available lanes of the main carriageway (excluding Design-Build-Finance-Operate (DBFO) lengths) based on three elements of the road surface condition namely - the levels of surface rutting (caused by wheel tracks being formed in the surfacing), skid resistance (how slippery the road is) and longitudinal profile (how bumpy the road feels) with a target of 96.2% or more in good condition. At the time of publication, the road surface had a score of 96.7% in good condition, thereby meeting the national surfacing condition target.

This route consists of approximately 950 lane-kilometres of road surfacing. The surface condition across the route is considered to be sound, with 96% of pavement asset not requiring investigation for possible maintenance.

Bridges and structures

There are 821 structures across the route, including bridges and large culverts. According to an analysis of current data, 93% of our structures are in very good or good condition. By carrying out inspections of each individual structure every two years, we identify any defects that may require maintenance, thereby helping to ensure that structural components are replaced before they fail.

Figure 18 below shows how investment in this route has improved the average condition scores of structures, since 2006. The average condition score is derived from asset inspections on structural components, accounting for the relative importance and size of each component. If no maintenance or renewals were planned, the scores would be expected to decline from 100 (perfect) as the structures deteriorate over time. We have a rolling renewals programme to replace asset components identified in our inspection programme, improving the structure condition to ensure all structures remain in a safe condition and fully open for use.

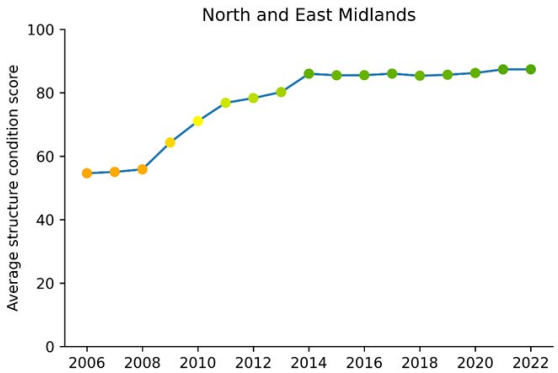


Figure 18: Average condition scores of structures, since 2006

This route has only one tunnel, the Meir tunnel, which opened to traffic in 1997. The management of tunnel assets vary from the management of other structures in two ways. Firstly, the assets within a tunnel have a wide variety of design lives, from 120 years for the tunnel structure, to far less for the technology systems for operations and fire life safety. Secondly, tunnel systems require 24/7 control by our operations centres, to maintain safe operation.

Drainage

Drainage assets are represented by both linear assets (for example underground pipes, channels, ditches, drains) and nonlinear assets (for example gullies and chambers). At national level, 90% of the drainage assets are in good structural condition and 87% are in good service condition.

Geotechnical features

The geotechnical asset, comprising over 12,000 kilometres of earthworks embankments and cuttings carrying the road network is assessed through a programme of inspections and rated for its ability to provide the right level of safe functionality. The condition assessment of this asset is that 99.61% is in good condition to continue to function correctly. We use the inspection surveys to identify where any of our geotechnical features may require maintenance now or in the future, to ensure they are never at risk of failure.

Future developments

We have been transforming our approach to maintenance through our Operational Excellence and Asset Management Transformation Programmes. Bringing our key asset maintenance decision making and planning activities back in-house so that our own staff are responsible for planning maintenance activities, along with improving the consistency of our end to end maintenance and asset replacement programmes will bring significant benefits.

Our asset management transformation also includes the improved analysis to identify the investment required on the strategic road network during the third road period (2025- 2030). The business case will provide evidence to support future maintenance investment, clearly articulating the costs and benefits of delivering an effective maintenance and asset replacement programme.

Operations

We are establishing a nationally consistent approach to the management of our operational capability through our Operational Excellence change programme. This will deepen our understanding of how our interventions impact on the performance of the network and on the journeys of our customers. We are using the latest analytical software to process traffic data and gain insight into:

- How our operational services can improve safety and provide security to road users
- How the attendance of a traffic officer has an impact on incident durations
- How information provided by National Highways can benefit road users who plan their journeys beforehand and then while on their journeys

By better understanding our current operational performance, we can create a baseline from which we can identify opportunities for improvement.

Key challenges

- Contributing toward the national target of 96.2% or more of carriageway being in good condition
- Maintaining the good condition of the strategic road network's geotechnical assets
- Ensuring that drainage assets are maintained so that their good structural and service conditions can be upheld

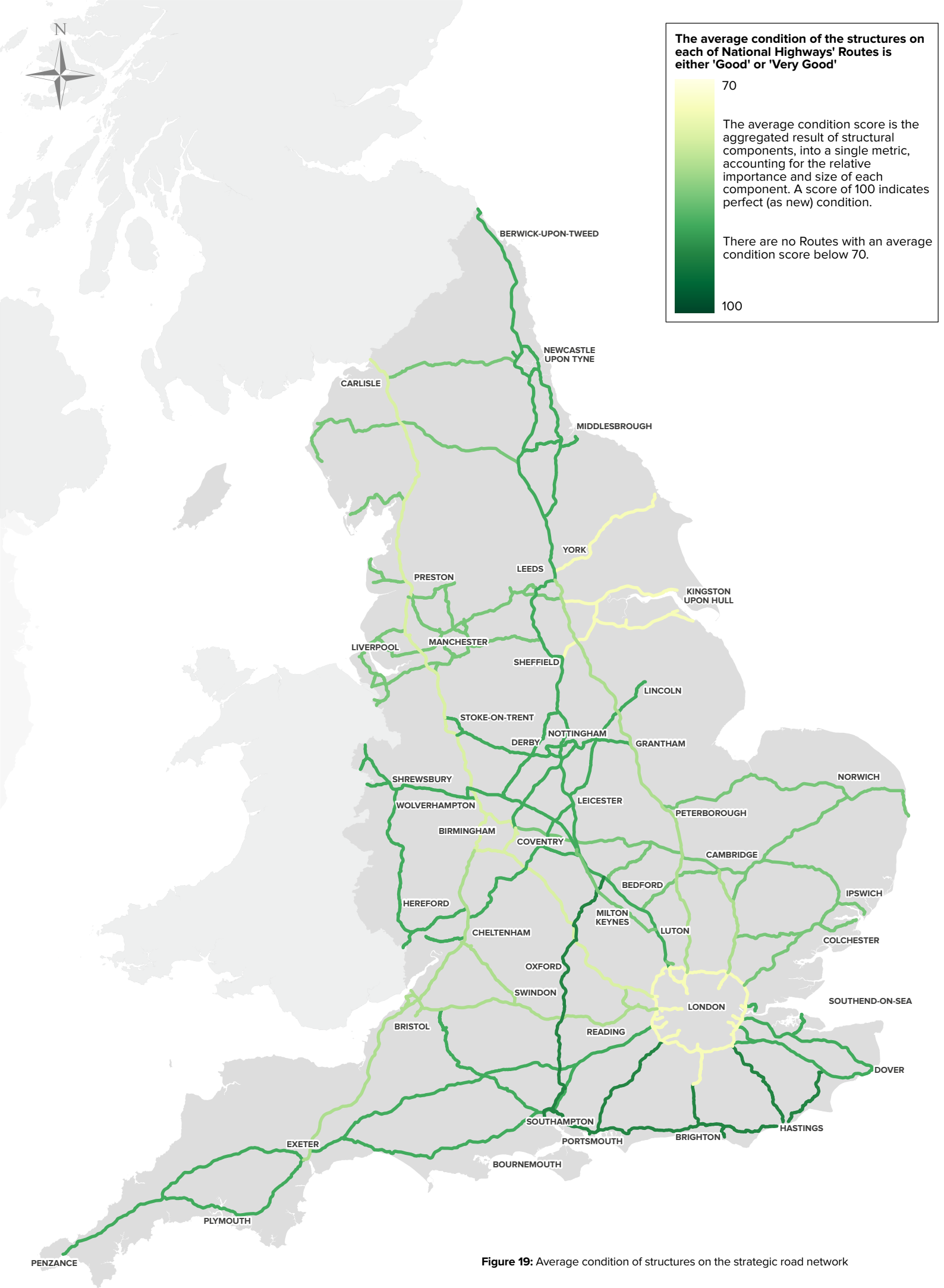


Figure 19: Average condition of structures on the strategic road network

6. A technology-enabled network

Facilities to improve journey quality and network efficiency on the strategic road network (SRN) are of key concern to our interested parties, road users and communities. High quality travel information before and during travel helps to:

- reduce day-to-day delays and improve reliability of the SRN
- minimise the adverse impacts of incidents
- improve the quality of journey experience
- allow people to make more informed travel choices including about when and how to travel

Real time information on this route is generally limited. This is partly due to a high proportion of the route being of mixed standard, all-purpose trunk road. There is good coverage of charging facilities for electric vehicles in Nottingham city centre but elsewhere facilities on the SRN are more limited, particularly on the A50, A46 and A52 away from the main population centres.

The move towards ending the sale of new petrol and diesel cars by 2030, and the transition to electric vehicles for freight transport, will require a greater number of charging points in future. Interested parties also noted the need for refuelling facilities for all alternative fuels on the SRN, responding to any future developments in vehicle fuelling technology.

We will support improved communications and facilities for all

The Government's 2022 electric vehicle infrastructure strategy[37] sets out a vision for 2030 where charging infrastructure will be removed as both a perceived and real barrier to the adoption of electric vehicles. The Strategy outlines the intention to accelerate the rollout of high-powered chargers on the SRN through the £950 million rapid charging fund[38], aimed at increasing provision of electric vehicle charging.

Key challenges

- There is a lack of real-time information for road users during journeys on the route
- Integration of traffic management between the SRN and local roads
- There is a need for more electric vehicle charging points outside of major urban areas

37 Department for Transport *UK electric vehicle infrastructure strategy* website: https://www.gov.uk/government/publications/uk-electric-vehicle-infrastructure-strategy

38 Office for Zero Emission Vehicles *Rapid charging fund* website: https://www.gov.uk/guidance/rapid-charging-fund

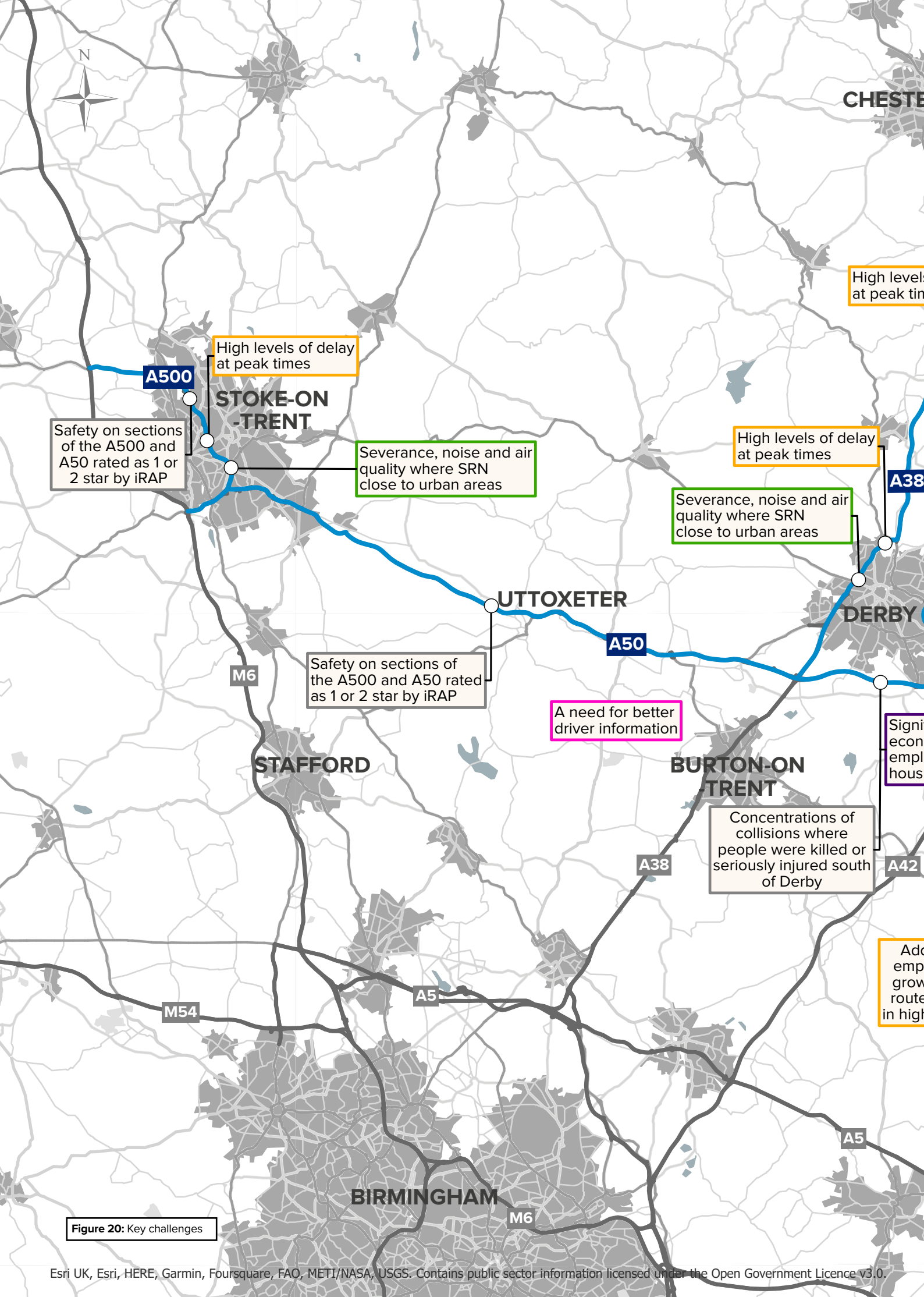
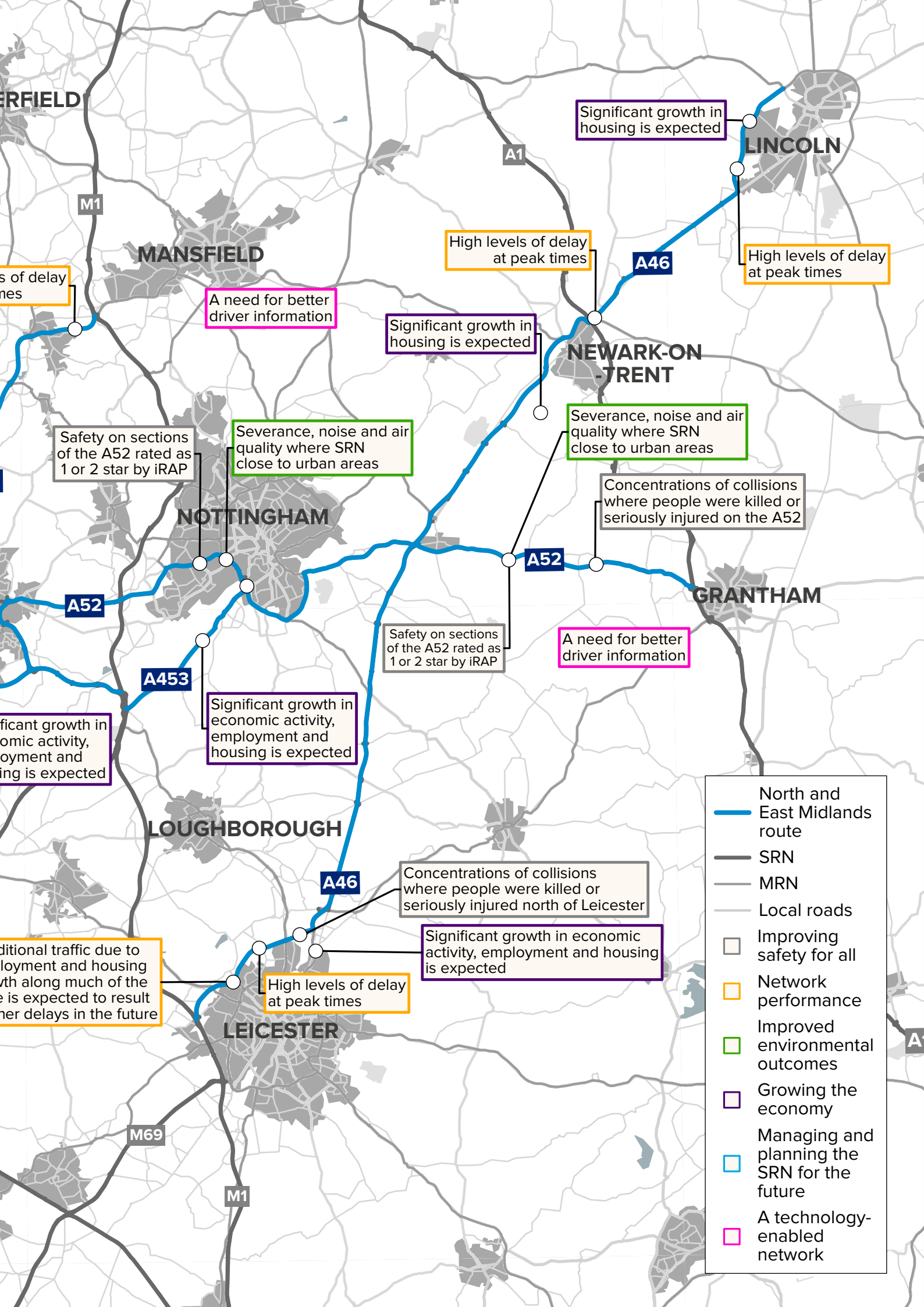


Figure 20: Key challenges


Significant growth in housing is expected
LINCOLN
A1
M1
MANSFIELD
High levels of delay at peak times
A46
High levels of delay at peak times
A need for better driver information
Significant growth in housing is expected
NEWARK-ON -TRENT
Severance, noise and air quality where SRN close to urban areas
Safety on sections of the A52 rated as 1 or 2 star by iRAP
Severance, noise and air quality where SRN close to urban areas
Concentrations of collisions where people were killed or seriously injured on the A52
NOTTINGHAM
A52
A52
GRANTHAM
Safety on sections of the A52 rated as 1 or 2 star by iRAP
A need for better driver information
A453
Significant growth in economic activity, employment and housing is expected
LOUGHBOROUGH
A46
Concentrations of collisions where people were killed or seriously injured north of Leicester
Significant growth in economic activity, employment and housing is expected
High levels of delay at peak times
LEICESTER
M69
M1
North and East Midlands route
SRN
MRN
Local roads
Improving safety for all
Network performance
Improved environmental outcomes
Growing the economy
Managing and planning the SRN for the future
A technology-enabled network

Our ambition for the route

06 Initial route objectives

We want to provide safer and more reliable journeys for all those who use or live alongside our network on the North and East Midlands route, and help the region achieve its economic and housing growth ambitions. Based on our engagement and data analysis, we have defined six route objectives for the area.

We developed the route objectives based on:

- feedback from customers and neighbours outlined in Chapter 3
- opportunities to collaborate with other network operators, outlined in Chapter 4
- constraints and challenges, as highlighted in Chapter 5
- how best to contribute to the Department for Transport's (DfT's) six strategic objectives

Each route strategy includes a series of specific route-based objectives. These objectives, informed by extensive data analysis and engagement with customers and neighbours, set out our ambition for each route. Although route objectives are route-specific, they should also be considered in the context of our commitments and ambitions for the whole network, as per our Licence agreement. This means that, while we may identify certain locations within a route for further consideration, we will seek to address these locations in line with our ongoing commitment to achieving our safety, environmental and technology obligations across the strategic road network.

It should be noted that there is overlap between the objectives, and we recognise they cannot be considered in isolation from each other. They should be considered alongside our asset plan.

The route objectives, their supporting narratives, and locations for further consideration will together inform the development of the Road investment strategy (RIS). They do not represent a commitment to road-based interventions but are intended to enable multimodal interventions to be explored as part of later study phases. It should be noted that the route objectives do not signify an assurance of investment in a particular route, nor do they remove the need to follow statutory processes.

As these are initial route objectives subject to wider feedback, we have not at this stage set out in detail how we will measure progress against them. Understanding how interventions and initiatives have addressed the challenges identified is a complex and long-term task and the approach to it will need to be devised alongside the wider performance specification for the third road period (2025-2030). We expect to set out our approach to this more clearly in the finalised route strategy overview reports to be published alongside our *Strategic business plan* and *Delivery plan* later in this second road period (2020-2025).

Route objectives and DfT's strategic objectives

In Figure 21 we illustrate the six route objectives on our route map and, in Table 1, we show how they contribute to the Government's strategic objectives for our network as a whole.

Table 1: How the route objectives map to the DfT's strategic objectives

	Ref	Route objective
	**A**	**Improve safety for all:** provide safe journeys around Leicester and Lincoln (A46), Nottingham (A52) and Stoke (A500) to benefit road users, interested parties and local communities
	**B**	**Provision of a resilient network:** improve road users' experience of reliable journeys through provision of a resilient network
	**C**	**Be a better neighbour:** be a better neighbour by safeguarding the environment and reducing the impact of air quality, noise and severance on local communities of Stoke-on Trent (the A500), Derby (the A38) and Nottingham (the A52)
	**D**	**Support sustainable economic and housing growth:** support sustainable economic and housing growth at key sites to the south of Derby, north of Leicester, East Midlands Gateway, east of Nottingham and Lincoln
	**E**	**Support the needs of the freight industry:** support the needs of the freight industry (including heavy goods vehicle facilities) to ports both within the route corridor, for example, East Midlands Airport, and as a connector to ports, including Freeports, and destinations outside the route, for example the Ports of Immingham and Liverpool, and Birmingham Airport
	**F**	**Better informed drivers:** improve communication to better inform drivers and improve driver experience throughout the route, including on local roads approaching strategic road network junctions

DfT's strategic objectives for our route

Improving safety for all	Network performance	Improved environmental outcomes	Growing the economy	Managing and planning the SRN for the future	A technologyi-enabled network
✓	✓				
	✓		✓		
	✓	✓			
	✓		✓		
	✓		✓		
	✓		✓	✓	✓

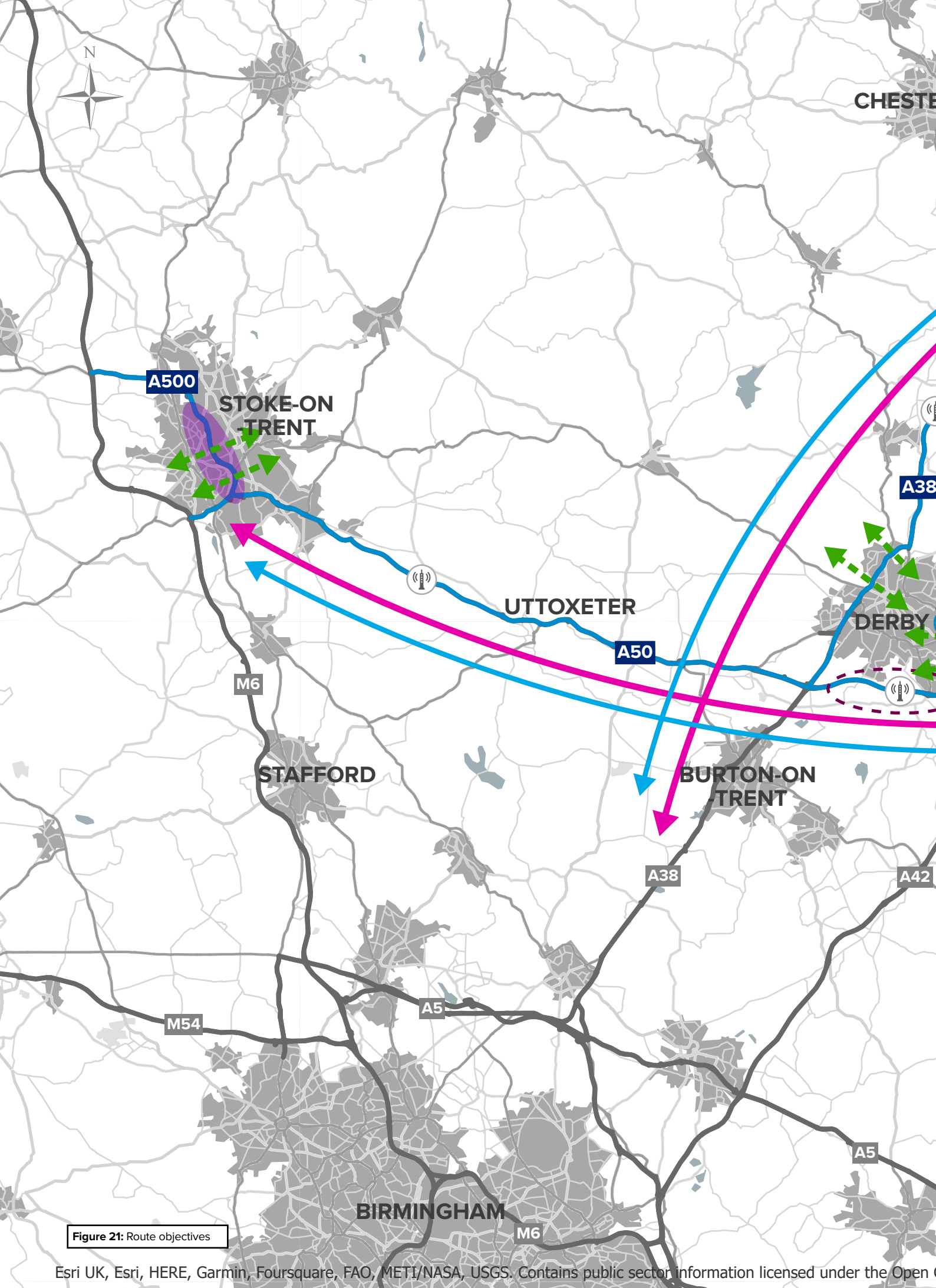
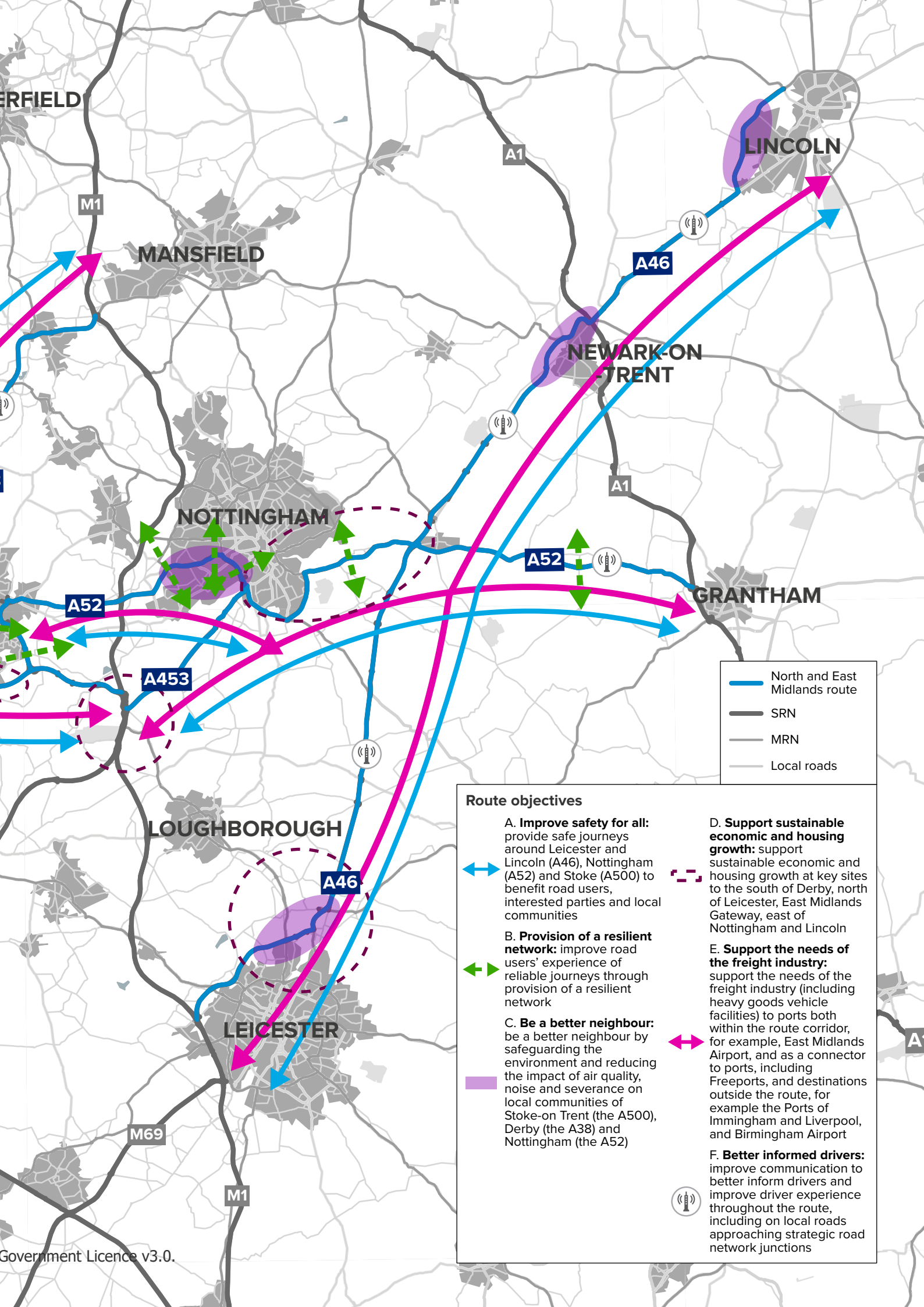


Figure 21: Route objectives



A. Improve safety for all

Objective

Provide safe journeys around Leicester and Lincoln (A46), Nottingham (A52) and Stoke (A500) to benefit road users, interested parties and local communities

Context

The route consists of mixed standard A-road dual and single carriageways. Numerous local roads join the strategic road network (SRN) (particularly on A50 and A52) where conflicts between local and regional traffic can occur. Incidents on the SRN can have significant impacts on the surrounding local roads, increasing traffic flows above capacity in some cases, worsening likelihood of congestion, delay and collisions which can impact local communities when traffic diverts onto local roads.

Our network considerations

STATS19 data show that there are collisions where people were killed or seriously injured on the:

- A50 south of Derby
- A52 west of Grantham
- A52 east of Nottingham
- A46 north of Leicester
- A500 Stoke-on-Trent

There are safety issues at a number of junctions on the A52 including close to Wollaton Park at the junction with the A46 to the west of Nottingham. Safety issues on the A50 are particularly noted at Toyota Island (A50/A38 junction) and the A50 at Uttoxeter. Safety issues are noted on the A46 around Syston and Lincoln.

These are generally the junctions with greater delay and/ or conflicting movements between local and regional traffic. Interested parties identified safety concerns at some junctions where vehicles queue back onto the main carriageway.

The design of the A52, particularly the single carriageway sections, was seen by interested parties as a significant contributing factor to the safety record. Safety is a particular concern for interested parties where the SRN passes through urban areas such as Stoke, Nottingham, Newark, and Lincoln.

Outcomes

- Reduced number of collisions
- Fewer delays due to incidents, reducing business transport costs

DfT's Strategic objectives

Improving safety for all

Network performance

Timeframe based on the issues and constraints identified

Now — **Existing safety issues have been identified**

Future Road Periods — **Continuation of the issues identified in the current road period (2020-2025)**

B. Provision of a resilient network

Objective

Improve road users' experience of reliable journeys through provision of a resilient network

Context

The North and East Midlands route provides key connections to international gateways both directly and, through onward connectivity, to destinations outside the route. Within the route corridor, East Midlands Airport (EMA) is situated off the A453 just south of M1 Junction 24. The A46, A52 and A453 provide connections between the A1 and M1 from the North-East of England.

The A46 between Leicester and Lincoln provides access to the Humber Ports, through onward links via the A15 and M180 or A46 to Grimsby and Hull, from both the A1 and M1 corridors making it an important freight connection between the South-West, Midlands and the Humber.

The A38 and A42, via the M42 and A38 south of the route, provide access to the West Midlands and the key international gateway of Birmingham Airport from the East Midlands and further east.

Our network considerations

The route sections which provide links to these international gateways all experience journey delays and unpredictable journey times. In addition there are sections of the A46 around the north of Leicester where average peak period delays are over 30 seconds per vehicle per mile, observed in both morning peak and evening peak periods.

There are also average peak period delays on other arterial routes (such as the A46 at Newark) or where there is significant interaction with local traffic (for example at Lincoln). Average peak period delays on the A52 around Nottingham are in excess of 60 seconds per vehicle per mile in both the morning and evening peak periods.

Feedback from interested parties is that freight traffic is particularly affected by these delays and journey time unreliability. On all these sections it is anticipated that planned development, including East Midlands Freeport, will increase the volume of traffic on the route.

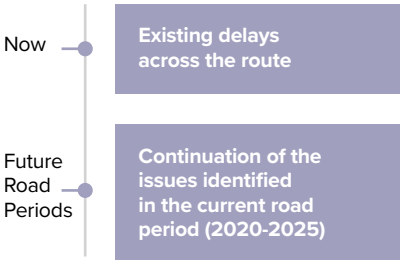
Outcomes

- Improved journey times
- Improved journey reliability
- Improvements in business traffic efficiency and reductions in transport costs

DfT's Strategic objectives

- Network performance
- Growing the economy

Timeframe based on the issues and constraints identified



C. Be a better neighbour

Objective

Be a better neighbour by safeguarding the environment and reducing the impact of air quality, noise and severance on local communities of Stoke-on-Trent (the A500), Derby (the A38) and Nottingham (the A52).

Context

Many of the roads in the route run close to, or through communities and residential properties in cities, towns and villages. The traffic using these roads can adversely affect the health and quality of life of the residents of those areas, including because of noise, air quality and severance impacts.

Our network considerations

Much of the route passes through or close to urban areas. There are a substantial number of receptors within 300 metres of the carriageway which may experience higher noise levels on the A38 near Derby and the A52 (Derby to M1; between the A46 and A1 and south of Nottingham).

There are many designated Noise Important Areas adjacent to the route where the roads are close to the urban areas of Stoke-on-Trent, Uttoxeter, Derby, Nottingham, Newark-on-Trent and Lincoln.

In terms of air quality, the route sections where there is a high number of receptors within 100 metres of the route which may be more likely to experience adverse air quality impacts are:

- the A50 south- east of Stoke-on-Trent
- the A38 west and north of Derby
- the A6 south of Derby
- most of the A52 between Derby and Grantham
- the A46 Newark-on-Trent
- the A46 section adjacent to Leicester

The A500, A50 and A52 also run close to, or through numerous Air Quality Management Areas (AQMAs). These are in similar locations to those affected by noise, namely Stoke-on-Trent, Derby, Castle Donington, Kegworth, Nottingham and Lincoln.

Environmental and safety impacts on local communities can increase when delays or incidents occur on the strategic road network in this route, as well as on the M1 (London to Scotland East (South) route), causing traffic to divert onto the local road network.

Severance of communities by main roads, and the lack of provision of active travel facilities are of concern for interested parties.

There is a desire amongst interested parties to protect local habitats and to achieve environmental enhancement and adopt high standards of design.

Outcomes

- Improved air quality and public health
- Improved quality of life and improved access to opportunities for community residents

DfT's Strategic objectives

- Network performance
- Improved environmental outcomes

Timeframe based on the issues and constraints identified

Now

Numerous receptors which may be experiencing higher noise levels and adverse air quality

Future Road Periods

Continuation of the issues identified in the current road period (2020-2025)

D. Support sustainable economic and housing growth

Objective

Support sustainable economic and housing growth at key sites to the south of Derby, north of Leicester, East Midlands Gateway, east of Nottingham and Lincoln

Context

There are a significant number of employment sites (both new and planned) along the route, taking advantage of the central strategic location within the UK. However, a number of these are at locations with current congestion, delay and safety issues. There is a significant unmet housing need at several locations along the route and, as a result, there are many large sites identified for residential development in Local Plans, or longer-term proposals for residential development. Some of the larger sites are at Leicester, south of Derby, at Lincoln and at Grantham.

Through the Local Authority planning process, National Highways works with local authorities and developers to identify opportunities to promote developments that are, or can be made, sustainable; developments that allow for uptake of sustainable transport modes and support wider social and health objectives, and which support existing business sectors as well as enabling new growth.

New developments are likely to result in some additional demand for travel by private car and heavy goods vehicles. We recognise that the strategic road network (SRN) is part of the transport provision needed to unlock new commercial development. We expect the promoters of development to manage down the traffic impact of developments, particularly where the potential impact is on sections of the SRN that could experience capacity problems in the future.

Some local authorities are concerned that current network performance and a lack of capacity on the SRN (and other travel modes) will constrain future development and growth in the area.

Many of the most-deprived areas along the route are in the towns and cities, which are more likely to be impacted by air quality and noise. (see Figure 22).

Our network considerations

Key locations where existing network performance and capacity on the SRN (and other modes) are likely to constrain future development and growth have been identified around Leicester, Newark, Lincoln, south Derby (Hospital expansion and A6 housing development), Nottingham (affecting M1 Junction 24) and in the Grantham area.

With expected growth in traffic, delays are forecast to increase across the route, most notably on routes such as the A50/A453 linking to M1 Junction 24/24A, the A46 north of Leicester and the A38 north of Derby (approaching M1 Junction 28).

Outcomes

- Support delivery of sustainable growth plans
- Housing need is met in these locations
- Reduced overall need for travel (if homes can be provided close to employment opportunities

DfT's Strategic objectives

- Network performance
- Growing the economy

Timeframe based on the issues and constraints identified

Now

Numerous proposals for significant housing and employment development

Future Road Periods

Continuation of the issues identified in the current road period (2020-2025)

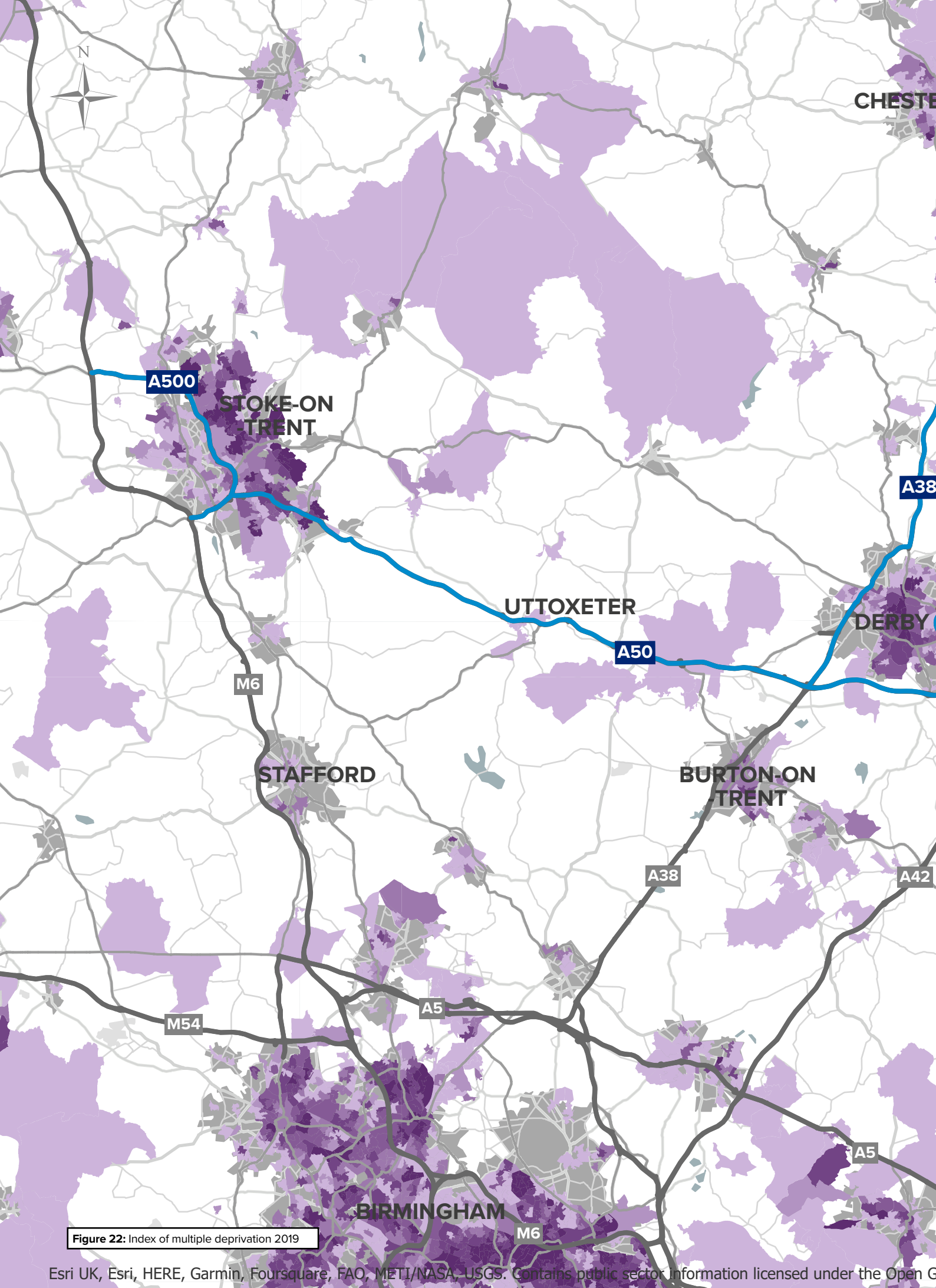
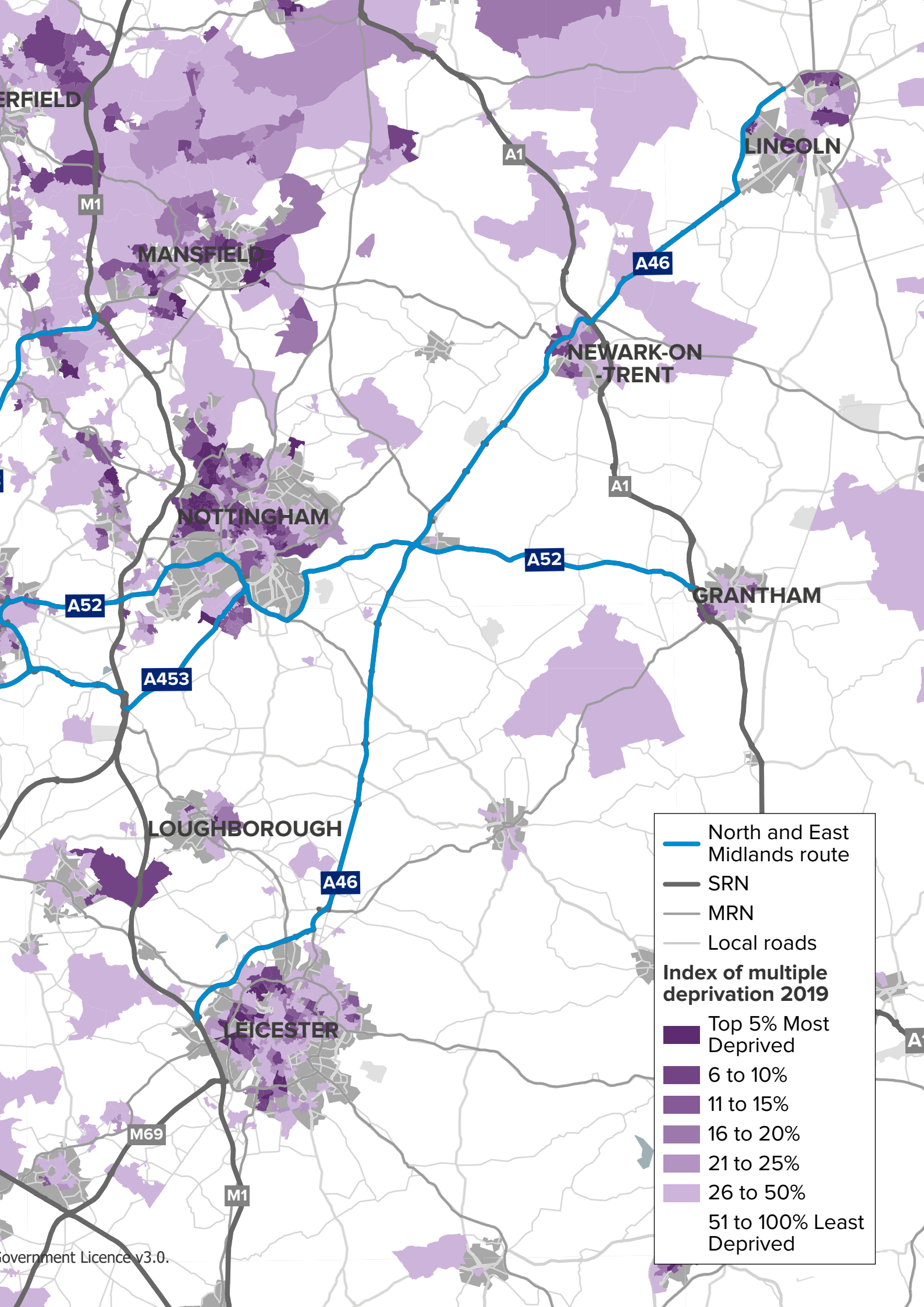


Figure 22: Index of multiple deprivation 2019



E. Support the needs of the freight industry

Objective

Support the needs of the freight industry (including heavy goods vehicle facilities) to ports both within the route corridor, for example East Midlands Airport, and as a connector to ports, including Freeports, and destinations outside the route, for example the Ports of Immingham and Liverpool, and Birmingham Airport

Context

High traffic volumes result in delays and unreliability of journey times at many locations on the route including at junctions. These delays have knock-on effects on local communities, the environment, on the quality of users' journey experience, and adds additional transport costs to businesses. Businesses often cite journey time predictability as important as actual journey time, especially those operating just-in-time delivery systems or using international gateways as is the case with many businesses in the East Midlands.

A more efficiently-managed network can also reduce overall vehicle miles travelled and journey times. Logistics operations can be adversely impacted by a lack of suitable overnight parking and rest stops for heavy goods vehicles in the right locations and price.

The health and safety of heavy goods vehicle drivers can be jeopardised by the need to park in unsuitable locations, such as laybys, industrial estates and residential areas.

Our network considerations

Existing lorry parks are heavily utilised, especially in the East Midlands where inappropriate overnight lorry parking (in lay-bys) is also frequently observed. There is significant demand for additional lorry parking around Leicester and East Midlands Airport.

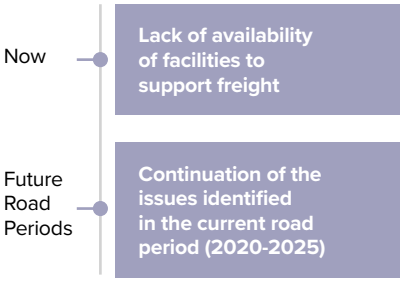
Outcomes

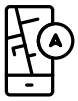
- Improved efficiency and resilience of the strategic road network
- Overall reduction in delays and distance travelled
- Reduction in emissions of greenhouse gases
- Improved conditions for freight vehicle operators, and the performance and efficiency of the UK freight sector

DfT's Strategic objectives

- Network performance
- Growing the economy

Timeframe based on the issues and constraints identified





F. Better informed drivers

Objective

Improve communications to better inform drivers and improve driver experience throughout the route, including on local roads approaching strategic road network junctions

Context

Improved driver information before and during journeys, including information available before joining the strategic road network (SRN) would allow drivers to make informed route decisions.

Our network considerations

Traffic levels are at or over capacity, particularly at junctions, resulting in delays and reduced journey time reliability at many locations, including the A50 around Uttoxeter, A500 around Stoke and the A46 around Leicester. This results in regular delays at peak times and significant delays after an incident, making these unreliable sections of the route.

There is limited driver information available on much of the route, or on local roads approaching the SRN, meaning drivers are unable to make informed decisions about their choice of route.

These traffic delays have numerous knock-on effects on local communities, where traffic might use less suitable roads as an alternative to the SRN, the environment, on the quality of the users' journey experience, and as additional transport costs to businesses.

Outcomes

- Reduced traffic delays in these locations
- Fewer delays due to incidents, reducing business transport costs

DfT's Strategic objectives


Network performance


Growing the economy


Managing and planning the SRN for the future


A technology-enabled network

Timeframe based on the issues and constraints identified

Now	**Limited real time information available**
Future Road Periods	**Continuation of the issues identified in the current road period (2020-2025)**

Table 2: Evidence used to inform objectives

Objective		Extent	Chapter 3 Views raised by our customers and neighbours	Chapter 4 Integration with our partners' strategies and priorities	Chapter 5 Challenges and issues identified
A	**Improve safety for all:** Improve safety for all: provide safe journeys around Leicester and Lincoln (A46), Nottingham (A52) and Stoke (A500) to benefit road users, interested parties and local communities	Sections of the A46, A52 and A500	Concerns of interested parties related to road safety on: • Various sections of the A46 including to the north of Leicester and at Lincoln, • The A500 through Stoke on Trent • The A52 between M1 and Nottingham • Junctions on the A50 including Toyota Island and A50 Uttoxeter	National Highways works with other operators, including Local Authorities, to ensure that the overall highway network works safely, reflecting that the safety of those who travel and work on our roads remains National Highways' top priority.	There are route sections which have low safety ratings from both the International Road Assessment Programme (iRAP) and/or the Road Safety Foundation Crash Risk Mapping. The following sections of the route have the lowest iRAP ratings of 1 or 2: • the A52 east of Nottingham to Grantham • the A46 at Newark-on-Trent • the A46 at Lincoln • the A38 north-west of Derby • the A52 between Derby and Nottingham • the A50 at Uttoxeter and south-east of Stoke-on-Trent • the A46 around the north of Leicester
B	**Provision of a resilient network:** improve road users' experience of reliable journeys through provision of a resilient network	Whole route, particularly A50, A38 Derby, A46 Syston, A46 Newark, A46 Lincoln, A52 through Derby and Nottingham	Concerns of interested parties were: • Delays at junctions such as Hobby Horse (A46/A607), the A50 at Uttoxeter, the A38 around Derby, the A52 in Nottingham and the A46 around Lincoln, were considered to lead to slow journey times for both strategic and local road users, at most times of the day • Lack of resilience of the strategic road network (SRN) leading to [resulting in] strategic traffic using inappropriate local roads. • Coordinated investment (capital and revenue) in locally delivered sustainable measures where that helps to remove 'local trips' from the SRN • Some routes, particularly the A50/ A500, A38 and A46, serve strategic as well as local functions, and this mix affects network performance	• One of Midlands Connect's priorities for regional connectivity is: A future road network that is reliable, resilient and efficient for all	Key challenges and issues related to this objective are: • Traffic on sections of the A50, A52, A38 and A46 can experience high levels of delay across the day, particularly during peak periods • Where delays currently exist, they are forecast to increase further by 2031

Objective		Extent	Chapter 3 Views raised by our customers and neighbours	Chapter 4 Integration with our partners' strategies and priorities	Chapter 5 Challenges and issues identified
C	**Be a better neighbour:** be a better neighbour by safeguarding the environment and reducing the impact of air quality, noise and severance on local communities of Stoke-on-Trent (the A500), Derby (the A38) and Nottingham (the A52)	Stoke-on Trent (the A500), Derby (the A38) and Nottingham (the A52)	Concerns of interested parties were: • Low quality environment on the A52, with significant air quality issues and severance for active travel modes • Strategic road network planning needs to contribute towards wider objectives - health, wellbeing, quality of life, equality etc - and include the infrastructure to support active travel	One of Midlands Connect's three grand challenges is to "Greener: Decarbonising transport and adapting to climate change. Contributing to achieving 'Net Zero ' by 2050; ensuring resilient networks; and minimising the environmental impacts of new infrastructure".	Key challenges and issues related to this objective are: • a desire to maintain and protect areas with environmental designations and cultural heritage • A large number of receptors which may be more likely to experience adverse air quality impacts are within 100 metres of the route, and/or are within designated Air Quality Management Areas • A substantial number of receptors within 300 metres of the route may experience higher levels of noise and/or within a Noise Important Area • A desire to reduce severance impacts on local communities • A desire to minimise greenhouse gas emissions • A desire to build resilience to future climate change

Objective		Extent	Chapter 3 Views raised by our customers and neighbours	Chapter 4 Integration with our partners' strategies and priorities	Chapter 5 Challenges and issues identified
D	**Support sustainable economic and housing growth:** support sustainable economic and housing growth at key sites to the south of Derby, north of Leicester, East Midlands Gateway, east of Nottingham and Lincoln	Sections of the A50, A38, A46, A52 and A453	Concerns of interested parties were: • a need to improve connectivity as the A50/ A500, A46 and A38 routes are important freight corridors for Midlands economic growth • Ensure strategic road network (SRN) is able to cope with growing logistics sector - region is within the 'golden triangle.' • Businesses in this area are more dependent on the SRN than any other area. • High growth in demand for warehousing across the region more generally. • Most housing growth that comes forward in Leicester and Leicestershire has an impact on the M1 Junction 21A area and the A46 from Junction 21A to Hobby Horse. • housing and employment development plans along the A50, A52 and A46 add pressure to existing delay locations • Prepare for high volumes of heavy goods vehicless and long goods vehicles at national distribution centres, free ports, and overnight parking facilities • existing delays on the network may impact growth opportunities	• Helping to move goods	• The A50, A46 and A38 are important to the economy of the North and East Midlands including the warehousing and logistics sectors. • Significant growth in economic activity and employment is expected along the route around East Midlands Airport and south of Derby. • Significant housing growth is expected close to many of the cities and towns along the route.

Objective		Extent	Chapter 3 Views raised by our customers and neighbours	Chapter 4 Integration with our partners' strategies and priorities	Chapter 5 Challenges and issues identified
E	**Support the needs of the freight industry:** support the needs of the freight industry (including heavy goods vehicle (HGV) facilities) to ports both within the route corridor (e.g. East Midlands Airport) and as a connector to ports, including freeports, and destinations outside the route (e.g. Ports of Immingham and Liverpool, and Birmingham Airport)	All sections of the route	Concerns of interested parties were: • greater provision needed for alternative heavy goods vehicle (HGV) parking and freight facilities • Ensure strategic road network (SRN) is able to cope with growing logistics sector - region is within the 'golden triangle.' • Businesses in this area are more dependent on the SRN than any other area. • Prepare for high volumes of HGVs and long goods vehicles at national distribution centres, free ports, and overnight parking facilities	• One of Midlands Connect's priorities for regional connectivity is: Helping to move goods	• The A50, A46 and A38 are important to the economy of the North and East Midlands including the warehousing and logistics sectors. • Limited freight rest facilities along much of the route
F	**Better informed drivers:** : improve communications to better inform drivers and improve driver experience throughout the route, including on local roads approaching strategic road network junctions	All sections of the route	Concerns of interested parties related to communications were: • improved communications are required, particularly on and ap-proaching the strategic road network (SRN) 'A' roads, to better inform road users • gantry signs to warn of de-lays before joining the SRN and connecting to a route • Improved driver information [is needed] to manage network problems (Clifton Bridge). • We need solution across the SRN/ major road network (MRN) – to sign for incidents and diver-sions, a more reactive system. Joined up approach between networks. • Opportunities to integrate information technology • Data sharing across SRN/ MRN to inform local journeys • greater provision of electric vehicle charging facilities is required to assist road users, particularly away from the main settlements on more rural roads	• One of Midlands Connect's priorities for regional connectivity is: Maximising technology-related opportunities to improve connectivity.	• There is a lack of real-time information for road users during journeys on the route • Integration of traffic management between the SRN and local roads • There is a need for more electric vehicle charging points outside of major urban areas.

Unlocking regional potential

07 Locational areas for consideration and potential collaboration

We know the importance that investment in our network can make locally, regionally and nationally. It can make areas more attractive for inward investment, unlock new sites for employment and housing and facilitate regeneration. It can also ease congestion, improve our customers' journeys and support environmental improvements in urban and rural communities along our network.

In this chapter, we outline our proposed locational areas for further consideration, which will be explored in future road periods to achieve the North and East Midlands route objectives and the Department for Transport's (DfT's) six strategic objectives. These do not represent a commitment as funding will be considered as part of the development of the third *Road Investment Strategy* (RIS) and other investment processes. Furthermore, they do not represent a final list of our potential investment locations and will be refined in our final Route strategy overview report, published alongside our RIS3 *Strategic business plan* and *Delivery plan* for 2025-2030.

Alignment with government objectives

Route strategies are aligned to the DfT's six strategic objectives and will also contribute to the RIS3 performance metrics set as part of the RIS-setting process.

Improving safety for all

Safety is our top priority and we are committed in the second road period (2020-2025) to reducing the number of road users killed or seriously injured on the strategic road network (SRN), by 50% (from the 2005-2009 baseline) by the end of 2025, with a long-term vision of zero harm. This includes our contractors adopting a safe system approach to ensure roadworker safety. Our operational and strategic planning teams continue to work to prevent incidents from occurring and are focussed on reducing incident severity through a package of activities to promote safer roads, safer people, safer vehicles and coordinated collision response. We are also learning from other organisations and interested parties about what works best and collaborate with them to improve safety for all. Safety is embedded in our study programme to inform future investment priorities for RIS3 and beyond.

Network performance

Our operational and strategic planning teams continue to explore what steps can be taken to make journeys more reliable and not subject to delay, as well as safer, while protecting and respecting the environment. This involves working with our partners such as Sub-national Transport Bodies and other operators such as Network Rail to consider interventions to improve network performance as we recognise the SRN does not stand alone from other transport infrastructure, in particular local roads, and users expect journeys to be seamless regardless of transport mode or ownership. Through our study programme we will identify appropriate types of intervention recognising the need for integration, environmental and digital consideration balanced against costs.

Improved environmental outcomes

We are continuously working to ensure our roads work more harmoniously with the communities that live alongside them and the environments that surround them. We embed environmental considerations into all our activities, ranging from infrastructure design to scheme delivery and ensuring we meet our statutory obligations, and the way we manage and operate our network. In developing our intervention programmes, we will consider a broad range of interventions including technology enabled solutions and integration with other operators' networks as we understand the gravity of the climate situation and are committed to playing its part in reducing carbon emissions. Our carbon policy commitments are:

- As a net zero Britain will still travel by road in 2050, we will ensure a properly maintained, future-ready road network, that is fitted to support the transition to electric vehicles, is key to reducing emissions from transport
- This programmatic coordinated delivery approach will act as a catalyst for: production management, off-site construction, reducing network disruptions, unlocking economies of scale, and supporting delivery of Net Zero targets
- It will also help us understand how interventions should be delivered, either through grouping or as standalone projects
- We expect this approach will create opportunities for increased efficiencies, and enable us to deliver more within our funding. We also expect this approach to help us support the Government's long-term aims for the nation, such as contributing to net zero carbon, and social values

Growing the economy

We recognise that the SRN is a significant economic asset for the UK and is essential for people to access jobs, and for businesses and logistics firms moving goods around the country. Our regional planning teams continue to work closely with local planning authorities to support sustainable growth and development aspirations, including integration with other modes. We also continue to work with businesses to understand their needs such as quality lorry parking facilities and ensuring reliable and resilient integration with ports, airports and rail terminals through which we access global markets. The SRN also has a role in achieving the Government's moral, social and economic programme of levelling up the United Kingdom. Our forward intervention programme will seek to support the growth agenda where possible and appropriate.

Managing and planning the SRN for the future

We recognise that our network is complex and varied and requires careful stewardship to keep it in good condition. Our ongoing maintenance programme is essential to safety and keeping our roads open, while our renewals activity allows us to maintain, safeguard and modernise all our assets, and provide increased resilience in relation to extreme weather. Research and data help us to understand what our network needs over the short and long term and to inform our planning. We continue to be committed to delivering our work in a way that minimises disruption to our customers and maximises value to taxpayers.

A technology-enabled network

In designing our intervention programmes, we will consider our Digital Roads vision for how we harness data, technology, and connectivity to improve the way the SRN work is designed, built, operated and used for the future. This will enable safer journeys, faster delivery and an enhanced customer experience for all, recognising the specific challenges of delivering technology and relevant information in more rural and remote parts of the network. The vision is structured around three themes: Design & Construction; Operations; Customers. The approach embeds digital, data and technology across the intervention programmes, providing the building blocks for a digital future for roads.

Programmatic approach to investment

As part of our new route strategies process, we are developing a more programmatic approach to how we develop our investment plans. This will help us determine the complexity of potential investments and what high value interventions are more deliverable.

This programmatic coordinated delivery approach will act as a catalyst for; production management, off-site construction, reducing network disruptions, unlocking economies of scale and supporting delivery of Net Zero targets.

It will also help us understand how interventions should be delivered, either through grouping or as standalone projects.

We expect this approach will create opportunities for increased efficiency, enable us to deliver more within our funding and in collaboration with other investment programmes.

We also expect this approach to help us support the Government's long-term aims for the UK, such as contributing to net zero carbon.

Figure 23 shows how the route objectives defined in the route strategies, along with the associated cluster analysis of performance metrics, help to refine an initial set of locations for future investigation. Further iterations of sifting as information and analysis evolves will help to inform the Government's setting of RIS3 (2025-2030) and beyond. The input from route strategies early on in this process will ensure that all schemes which are ultimately taken forward align with the route objectives.

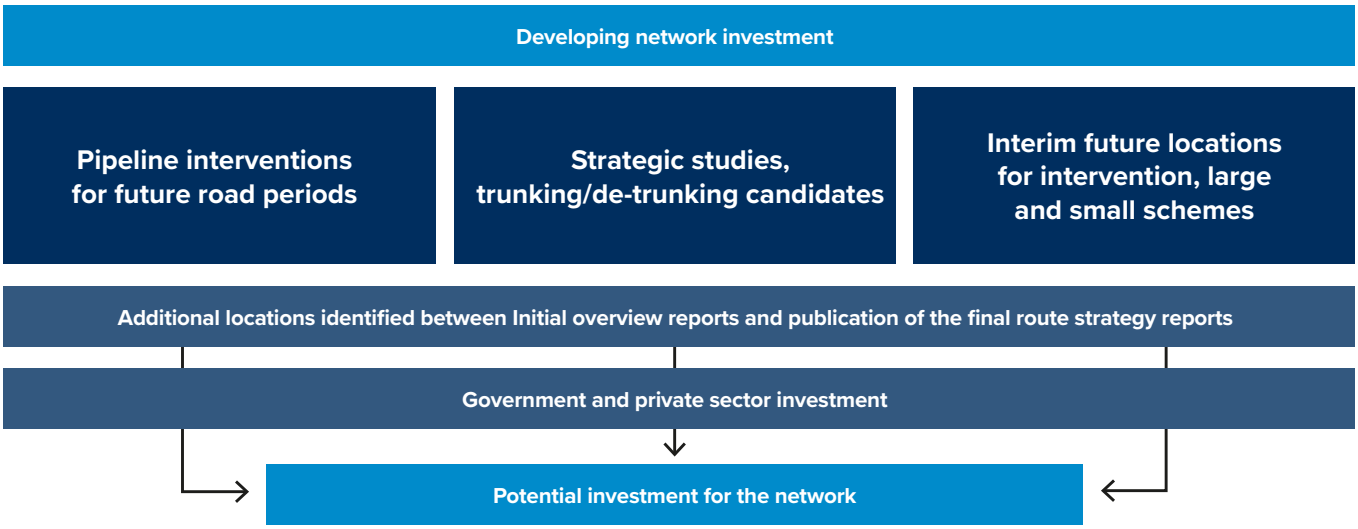


Figure 23: Process to identify potential investment on the network

Types of investment and funding sources

There are a variety of funding streams which enable us to invest in our network and which form part of our investment planning. These are summarised in the following section, along with the current committed schemes associated with each funding source for the North and East Midlands route. Key funding sources could include:

- RIS Funding – a funding stream administered by National Highways, set by the government's publication of the RIS:
  - RIS2 schemes are committed by DfT to be delivered as part of the *Road Investment Strategy*, as outlined in the following RIS2 table. The statement of funding confirmed that £24 billion will be provided during the second road period (2020-2025) to deliver this work, noting that some RIS2 commitments will continue into the third road period (2025-2030)
  - RIS4 (2030-2035) pipeline schemes, previously earmarked for RIS3 (2025-2030), will continue to be developed in line with our statutory processes and considered for inclusion within RIS4. These are potential future schemes originally identified by National Highways and set as part of RIS2 by DfT. These schemes are not currently committed for construction.
- Maintenance funding and asset renewal – within National Highways there is funding set aside for network maintenance and renewing ageing assets across the network. The budget for these is included in the RIS settlement
- Potential targeted funding streams that may be made available to National Highways during the third road period (2025-2030) as part of the wider RIS settlement, focused on making improvements that will make the biggest difference and deliver lasting benefits
- Other external sources of funding for delivering infrastructure enhancements on, or close to, the SRN including government, third parties, private sector developments, and inward investment

RIS2

The following schemes are committed for the second road period (2020-2025) on the North and East Midlands route:

Scheme number	Scheme	Description	Start of works	Open for traffic
Committed for the second road period (2020-2025)				
1	A52 Nottingham Junctions	Improvements at eight junctions along the A52 to cope with the existing problems and provide capacity for the increase in traffic anticipated when planned local developments are completed. The scheme aims to: • reduce queuing and delays • ease congestion by increasing capacity at the junctions • ensure journey times are more reliable • improve pedestrian and cycle routes at the junctions • make the road safer for all users support growth in the area	2017	2023-24
2	A38 Derby Junctions	Replacement of three roundabouts on the A38 in Derby: • A38/A5111 Kingsway roundabout • A38/A52 Markeaton roundabout • A38/A61 Little Eaton roundabout Roundabouts to be replaced with grade-separated interchanges, removing the last at- grade junctions on the A38 in the East Midlands and removing the conflict between local and strategic traffic. The specific objectives of the A38 Derby Junctions scheme are to: • reduce congestion and improve the reliability of journey times between Birmingham, Derby and the M1 • help facilitate regional development and growth in Derby City and its surroundings • improve safety for all road users, and for those people living near the junctions • connect people by maintaining existing facilities (for example, crossings and ramps) or providing new means for cyclists, pedestrians and disabled users to cross the road	2023-24	Third road period (2025-2030)
3	A46 Newark Bypass	Improving the capacity of the single carriageway and junctions of the A46 at Newark, and provide better links to the A1. The aims of the scheme are to: • boost business productivity and economic growth by providing a more reliable road network and improved local access • increase capacity, reduce delays and incidents, and improve journey times • improve resilience on the network	Third road period (2025-2030)	–

RIS4 pipeline

There are no RIS4 pipeline schemes for the fourth road period (2030-2035) identified on the North and East Midlands route. However, M6 Junction 15 Potteries Southern Access is a RIS4 pipeline scheme on the London to Scotland West (South) route which adjoins this route. Leicester Western Access is a RIS4 pipeline scheme on the London to Scotland East (South) route which adjoins this route at Junction 21A on the M1.

Other notable schemes

On the North and East Midlands route there are three other notable schemes including:

- The Newark Southern Link Road which will connect the A46 to the A1. Funding is from Homes England (formerly the Homes and Communities Agency), a developer, Newark and Sherwood District Council, and the D2N2 Local Enterprise Partnership's Local Growth Fund

- The North Hykeham relief road (funded via the Local Large Majors programme) which is in development and due to start construction in 2025. This will link into the A4 south of Lincoln
- The Grantham Southern Relief Road project includes a new junction on the A1.This is being delivered by Lincolnshire County Council with funding support from National Highways, through the Growth and Housing Fund, and other partners, and is scheduled to be open for traffic by Autumn 2023

Strategic studies, trunking and de-trunking

National Highways undertakes Strategic Studies to analyse complex problems that may need to be addressed over multiple road periods. Strategic Studies can involve close working with key partners including Sub-national Transport Bodies and the DfT, the consideration of options for improvements, and can be used to help to decide on whether to fund any proposed improvements in the future.

There are no Strategic Studies currently identified on the North and East Midlands route.

National Highways was asked to explore changes to the SRN to ensure the network aligns with RIS2 Strategic priorities reflected in the strategic *business plan*[39]. This plan relates to improving connections between main urban centres, to international gateways, to peripheral regions (for levelling up) and strategic cross-border routes (to strengthen union connectivity). It included a commitment to explore potential asset ownership changes between ourselves and local highway authorities that could be implemented no earlier than the start of RIS3. The DfT has produced a shortlist of 18 trunking and two de-trunking candidates, identified following the draft RIS2 public consultation in 2018, for us to assess desirability and viability of asset transfer. De-trunking is the process of returning a National Highways road to the local Highway Authority control and vice versa for trunking. These candidates were put forward by a range of external stakeholders including local authorities, Local Enterprise Partnerships and Chambers of Commerce, then shortlisted by the DfT. There is ongoing work to review the assessment evidence and recommendations, after which government ministers are expected to announce the candidates that will progress to the detailed development stage, which will be led by National Highways and incorporated in the forward study programme and wider RIS3 process.

Locations identified through route strategies for future investigation

National Highways undertakes route studies to investigate locations across the network. In addition, locations of interest have been raised by interested parties through the route strategy engagement process.

To supplement this, as part of the route strategies process outlined in this document, National Highways has used cluster analysis to identify further locations for future investigation and undertaken an exercise to align these locations to the route objectives for the North and East Midlands route.

The cluster analysis allows decision-makers to easily identify which sections of roads should be prioritised for further investigation. The assessment is a two-part process. In the first part, for each route strategy, the objectives are defined geospatially. This allows us to identify over which sections of the SRN the objectives converge, therefore quickly identifying the links that helps us to achieve the maximum number of objectives. The second part of the assessment uses our understanding of the network from performance data to allow a further filter to remove links that are already performing well. This results in a filtered shortlist of SRN links or sections of roads that should be prioritised for further investigation. These have been grouped into areas of interest where they are in close proximity geographically. Should a location not be identified for further investigation as part of this initial process, this does not preclude it from being added to the list of areas of interest in the future.

The use of regional traffic models for the 2031 scenario has enabled the identification of locations for further investigation based on the forecast network operation in the future, to plan the future of the network beyond the current RIS3 cycle. Typically, this has resulted in the extension of some areas of interest, as shown in the table of locations overleaf. In the final publication version of the route strategy reports, additional data from the regional traffic models will also be considered, to enable the identification of locations for further investigation in future roads periods.

There will be further development of any proposed mitigation at each location in line with National Highways' internal processes. In order to fund any proposed improvements National Highways will draw upon the funding streams as previously identified.

39 Highways England (2020) *Strategic business plan: 2020-2025*. https://nationalhighways.co.uk/strategic-business-plan/

Route strategies and regional traffic models

The route strategies have utilised the National Highways regional traffic models (RTMs) to identify future performance and delay on the network, which is the best data currently available.

Working with key stakeholders and interested parties, we have set out a number of potential candidate intervention locations which may require further development upon validation to check their alignment with the route strategy objectives.

New national traffic growth forecasts have now been released by the Department for Transport and as we carry out this exercise, we will consider how updated growth forecasts will impact on the identified areas for further investigation.

Alongside these more traditional road improvement schemes we will also need to support and encourage modal shift through transport integration and embrace emerging technologies to improve the performance of the network.

The impact on carbon and the environment will be central to all our thinking on which interventions are proposed to be taken forward.

Identified locations for future investigation and collaboration

Our analysis has set out the potential constraints and opportunities across the network and, in parallel, we are developing a RIS programme that is resilient to changing priorities, the carbon and environment agenda.

We have a wide range of potential intervention types within our toolkit, such as both non-roads and road-based solutions, to help us achieve our objectives. These could include:

Potential non-road interventions:

- Supporting wider network initiatives to improve the customer experience, such as provision and enhancements of facilities for the freight industry and electric vehicle charging
- Exploiting technology to improve safety and network operation, including roll out of connected corridors
- Delivering a portfolio of measures to encourage active travel
- Making environmental enhancements to minimise the impact of the SRN on surrounding communities
- Encourage modal integration and influencing demand for vehicles, particularly at interfaces with urban centres

Potential roads interventions:

- In addition to Lower Thames Crossing, we will continue to progress those remaining schemes in RIS1 and RIS2[40] that will not be in construction at the end of RP2, as well as the RIS4 pipeline, in line with government aspirations
- The pipeline schemes announced in RIS2 is the most developed portfolio of potential and we propose a renewed focus to ensure schemes: are resilient with an acceptable Value for Money; consider the Carbon Management in Infrastructure standard; are affordable, with lower cost options being developed; are environmentally responsible; are deliverable; and, have strong stakeholder support and / or are a good strategic fit (e.g., ports, levelling up)

We will also develop a significant portfolio of smaller safety and congestion interventions that improve localised issues as well as route treatments that address comparably poor safety performance (International Road Assessment Programme 1-star and 2-star roads) along selected All Purpose Trunk Road corridors.

40 Plans for new smart motorways have now been cancelled and previously paused smart motorways will now not go ahead

Table 3 and Figure 24 show the areas identified for further investigation, where interventions at these locations have the potential to help us achieve the majority of route objectives.

In line with National Highways' internal processes we will draw upon a wide range of funding streams, further developing any proposed intervention the issues identified, exploring:

- Collaboration and integration opportunities
- Synergies with existing planned schemes
- Opportunities with asset and maintenance priorities as set out in Chapter 5.5

As part of the ongoing evolution of the route strategies toward final publication we will further strengthen its role in being a strategic planning tool for interested parties who have a stake in the SRN and its future.

Table 3: Areas of interest for further investigation

Area location	Area of interest	Area issues	Now	Future road periods
		A500		
A500 around Stoke-on-Trent	**A**	**Growth in housing and employment** is expected at Stoke-on-Trent and Uttoxeter. Community severance has been identified through parts of Stoke-on-Trent, and **collisions** where someone has been killed or seriously injured have been recorded on the A500, particularly south and east of Stoke-on-Trent. There are **limited facilities particularly for walkers and cyclists** through the urban areas of Stoke-on-Trent along this section. Freight connectivity is important to facilitate east–west movements using the A50/A500 between the M1 and M6. **There is evidence of average peak period delay along this section** impacting both strategic and local traffic. As an important freight corridor, recurring congestion impacts business in the area. There is limited communication with road users due to a **lack of technology** on the A500.	✓	✓
		A50		
A50 Uttoxeter to A38	**B**	**Growth in housing and employment** is expected at Stoke-on-Trent and Uttoxeter. Collisions where someone has been killed or seriously injured have been recorded at Uttoxeter and Sudbury. Part of the A50 at Uttoxeter has a low International Road Assessment Programme (iRAP) safety rating. **Freight reliability** is important and this is inhibited by **average peak period delay** and **delay** at junctions at Uttoxeter and Sudbury. As an important freight corridor and one of **Midlands Connect's priority areas for investment**, recurring congestion along this section impacts business in the area. **Roadside facilities** are very limited on the A50, including parking for heavy goods vehicles and coaches, as well as electric vehicle charging infrastructure and other services. There is limited communication with road users due to a **lack of technology** on the A50.	✓	✓
A50 from A38 to M1	**C**	**Extensive employment growth**, particularly in the warehousing and logistics sector, is expected, including at East Midlands Airport, and East Midlands Gateway (part of East Midlands Freeport). Planned housing growth south of Derby is expected. Walking, cycling and horse riding routes by the A50 experience **severance**. There is limited communication with road users due to a **lack of technology** on the A50. **Freight connectivity** is important to support existing business and anticipated growth (particularly East Midlands Freeport). **Roadside facilities** are limited on the A50, including parking for heavy goods vehicles and coaches, as well as electric vehicle charging infrastructure and other services. There have been a number of recorded collisions where someone has been killed or seriously injured **south of Derby** and on the **A38/A50 junction circulatory**.	✓	✓

Area location	Area of interest	Area issues	Now	Future road periods
		A38		
A38 north of Derby to M1 Junction 28	**D**	There are **significant levels of queuing and average peak period delay** northbound between Alfreton and M1 Junction 28 at peak times impacting both local and strategic traffic. **Growth in employment and economic** activity is expected at South Normanton (M1 Junction 28), which is one of **Midlands Connect's priority areas for investment**. There is limited communication with road users due to a **lack of technology** on the A38. **Roadside facilities** are limited on the A38, including parking for heavy goods vehicles, as well as electric vehicle charging infrastructure and other services.	✓	✓
		A52/A6		
A6 Alvaston to A52 Spondon	**E**	There **are average peak period delays** on the A52 close to the junction with the A511 Raynesway and on the A6 Thulston roundabout at peak times. There is limited communication with road users due to a **lack of technology** on the A52. Receptors in the A6 south of Derby may experience **adverse air quality** impacts.	✓	✓
A52 from M1 Junction 25, and from A453 Clifton Lane, to Bingham	**F**	Collisions where someone has been killed or seriously injured have been recorded at a number of locations, particularly involving walkers, cyclists, and horse riders. Parts of the A52 section between Clifton and Bingham have a low iRAP safety rating. There are average peak period delays at several at-grade junctions along the A52. There is a high number of receptors close to the A52 that experience severance. There is a lack of active travel facilities where this section passes through communities of Nottingham. Significant growth is anticipated at Toton and M1 Junction 25. Large numbers of new homes are planned around Derby and Nottingham. There are receptors along most of this section that may experience adverse noise and air quality impacts.	✓	✓
A52 between the A52/A46 Saxondale Island and the A52/A1 junction at Grantham	**G**	**Collisions** where someone has been killed or seriously injured have been recorded at a number of locations, particularly involving walkers, cyclists, and horse riders. The A52 along this section has a low iRAP safety rating. There are **average peak period delays** at the A52/A1 junction at Grantham, which is one of Midlands Connect's priority areas for investment. There are receptors along most of this section that may experience adverse noise impacts. There is limited communication with road users due to a **lack of technology** on the A52.	✓	✓
		A46		
A46 from M1 to north of Syston	**H**	The A46 in the Syston area is one of Midlands Connect's priority areas for investment as it experiences **average peak period delays** and poor reliability, resulting in disruption for local and regional traffic. As an important freight corridor, average peak period delay impacts business in the area. Large numbers of **new homes** are planned around Leicester. **Collisions** where someone has been killed or seriously injured have been recorded at the Hobby Horse Junction. There is limited communication with road users due to a **lack of technology** on the A46. There are receptors along most of this section that may experience **adverse air quality** impacts.	✓	✓
A46 around Lincoln	**I**	The A46 at this location experiences **average peak period delays** and poor reliability resulting in disruption for local and regional traffic. As an important freight corridor, average peak period delay impacts business in the area. **Collisions** (where someone has been killed or seriously injured) have been recorded at several junctions around Lincoln. This section of the A46 has a low iRAP safety rating. There is limited communication with road users due to a **lack of technology** on the A46.	✓	✓

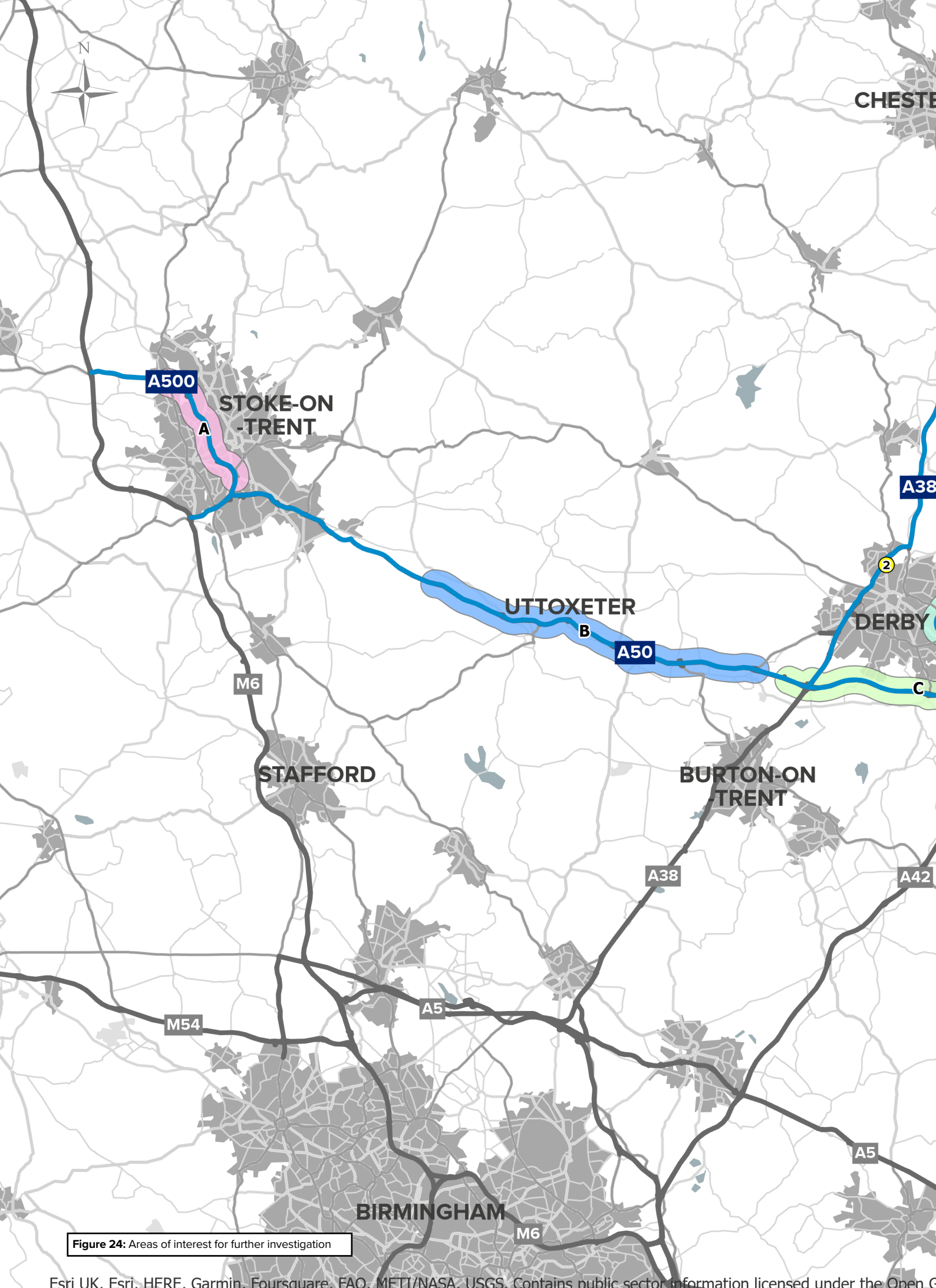
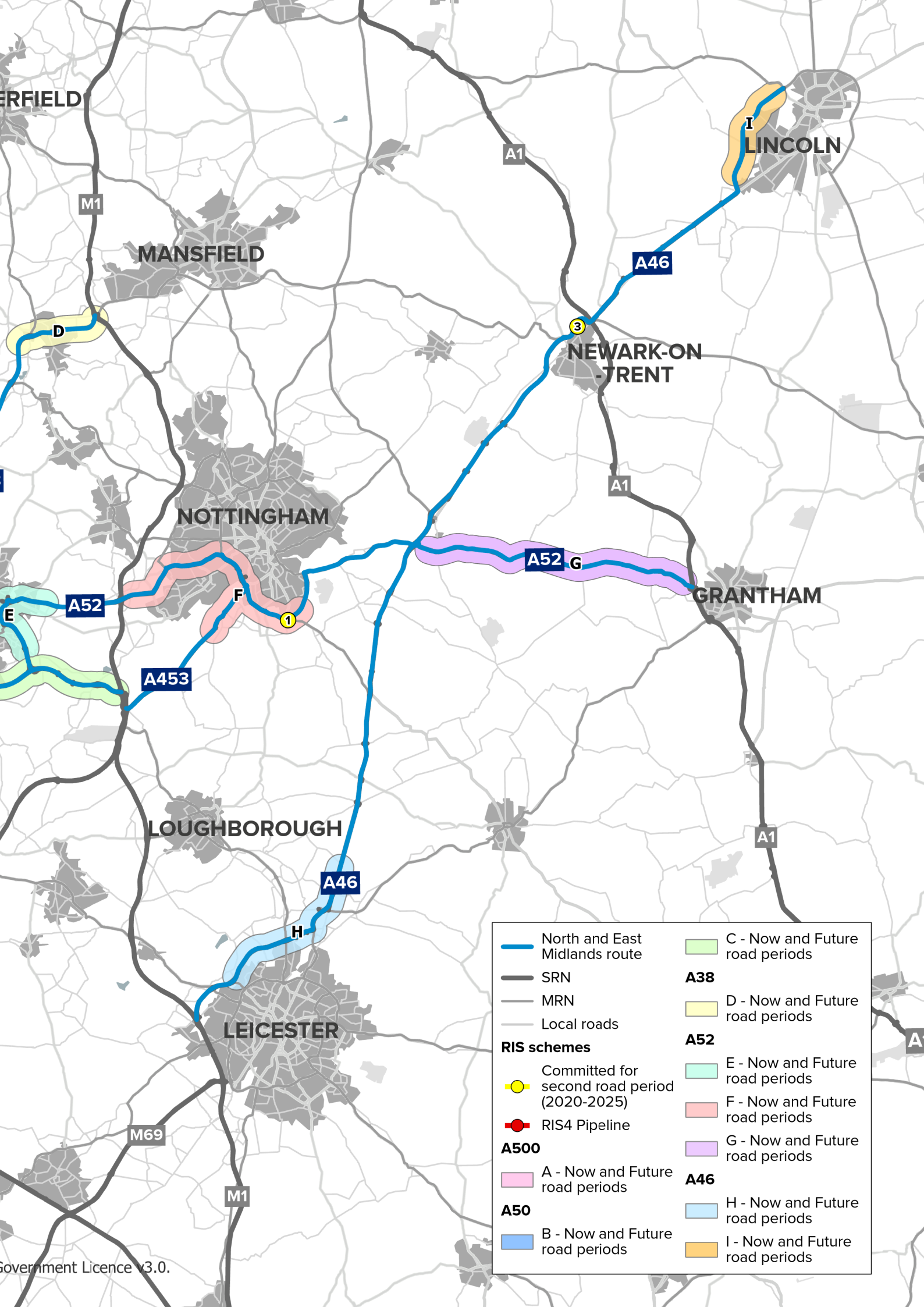


Figure 24: Areas of interest for further investigation



What happens next

08 Next steps

Our route strategies allow informed decisions to be made about our network. They have informed our *Strategic Road Network (SRN) initial report*, which sets our vision and priorities for the third road period (2025 – 2030) and beyond (from 2030). They are a forward planning tool for National Highways and our interested parties in their decision making, helping identify locations on our network for further consideration to inform investment opportunities, as well as to support decisions in prioritising potential solutions to enable us to continue to operate and maintain our network.

Alignment

They also align with the National Highways *Connecting the country: Our long-term strategic plan to 2050*[41] which sets out our 2050 vision for the SRN to be part of a seamlessly integrated transport system that meets our customers' needs by connecting the country safely and reliably, delivering economic prosperity, social value and a thriving environment. *Our long-term strategic plan to 2050* describes the short, medium and long-term steps to 2050 we believe are needed to make our vision a reality over successive road periods and has been informed by extensive horizon scanning, foresight analysis and engagement with key stakeholders across nine focus areas. The route objectives identified in the route strategies, which also respond to the needs of stakeholders, road users and communities, and the locations for further consideration to achieve these objectives are aligned with the 2050 vision.

Informing the next stage of planning

The route objectives and locations for further consideration will be used to inform our study programmes and consider opportunities for developing integrated and collaborative solutions with our interested parties.

The extensive engagement we have undertaken ensures feedback from our customers and neighbours is used to inform investment decisions. They will help us consider the interaction of our SRN with other transport networks, including the major road network and local roads. We also expect interested parties will use our route strategies to inform their wider investment programmes, supporting collaborative decision making.

For both the Route strategy initial overview reports and *Our long-term strategic plan to 2050*, there will be an opportunity for stakeholders, road users and communities to provide their feedback. This will be alongside DfT's separate consultation on the *SRN initial report* published at the same time.

The 20 finalised Route strategy reports and *Our long-term strategic plan to 2050* will be published by 2025, the end of the current road period (2020-2025), informing the *Strategic business plan* and *Delivery plan.*

Provide your feedback

To find out more about our route strategies and the development process, please visit our website: nationalhighways.co.uk/our-roads/our-route-strategies/

41 National Highways (2022) *Connecting the country: Our long-term strategic plan to 2050.* https://nationalhighways.co.uk/connectingthecountry

Glossary of terms

Term	Acronym	Description
Active users and active modes of transport		Active users and active modes of transport refers to walkers, cyclists and horse riders.
Air quality management area	AQMA	If a local authority identifies any locations within its boundaries where the Air Quality Objectives are not likely to be achieved, it must declare the area as an Air Quality Management Area (AQMA). The area may encompass just one or two streets, or it could be much bigger. The local authority is subsequently required to put together a plan to improve air quality in that area - a Local Air Quality Action Plan.
Area of Outstanding Natural Beauty	AONB	An area of outstanding natural beauty (AONB) is one of the classes of land protected by the Country-side and Rights of Way Act 2000 (CROW Act). It protects the land to conserve and enhance its natural beauty.
All Lane Running	ALR	All Lane Running (ALR) motorways apply controlled motorway technology, permanently converting the hard shoulder as a running lane, and feature emergency areas.
A-roads		Major roads intended to provide large-scale transport links between regional towns and cities.
Assets		National Highways assets include our infrastructure such as pavements, structures and tunnels
At-Grade Junction		An at-grade junction is a junction where two or more roads converge, diverge, meet or cross at the same height, as opposed to an interchange, which uses bridges or tunnels to separate different roads.
Clean Air Zone	CAZ	A clean air zone (CAZ) defines an area where targeted action is taken to improve air quality, and re-sources are prioritised and co-ordinated to deliver improved health benefits and support economic growth.
Collisions		The severity of a collision is based on the severity of the most severely injured casualty and is broken down into: • Slight collision: One in which at least one person is slightly injured but no person is killed or seriously injured • Serious collision: One in which at least one person is seriously injured but no person (other than a confirmed suicide) is killed • Fatal collision: A collision in which at least one person is killed
Department for Transport	DfT	Department for Transport (DfT) plan and invest in transport infrastructure to keep the UK on the move. DfT work with agencies and partners to support the transport network that helps the UK's businesses and gets people and goods travelling around the country.
Design-Build-Finance-Operate arrangements	DBFO	With a design-build-finance-operate arrangement, the private party provides financing and design, then builds and operates the facility. The public partner provides funding while the project is being used or is active.

Term	Acronym	Description
Diversionary Routes		National Highways agreed diversion routes represent the recommended routes for road users when a section of road has been closed.
Dynamic Hard Shoulder	DHS	Dynamic Hard Shoulder Running (DHS) motorways apply the controlled motorway technology and temporarily increase capacity by utilising the hard shoulder, and feature emergency areas. The hard shoulder is some of the time, but not always, used as a live running lane, with electronic signs to guide drivers when it is safe to use for live running.
Economic opportunity areas	EOAs	EOAs were developed to give us a more refined understanding of the types of priority economic growth opportunities that exist around the SRN and around the wider road and broader transport network. They are defined in terms of their common economic function and the spatial features of the location. These key growth areas are grouped by broad 'theme' (such as international gateways, multi-modal transport hubs, tourism destinations and housing locations) and their relative reliance on the SRN.
Freeport		Freeports are special areas within the UK's borders where different economic regulations apply. Free-ports in England are centred around one or more air, rail, or seaport, but can extend up to 45 kilometres beyond the port(s)
Heavy Goods Vehicle	HGV	A heavy goods vehicle (HGV) is a large vehicle intended for the transportation of heavy loads.
Growth Boards		Growth Boards have been established by some counties as a joined-up way of managing local future growth and supporting economic recovery.
International connectivity		Transport connectivity of the United Kingdom with Europe and the rest of the world.
In-vehicle Technology		This can be in-car systems that typically take the form of a touchscreen or display that is mounted on the dashboard. It can be a collection of hardware and software, which can provide information, data and connectivity to infrastructure to support the customer experience. It can also be the data and technology capability to enable the operation of the car (this might be connected services, autonomous capability, parking sensors, cameras etc.). It can be any technology within a vehicle.
Levelling up		Levelling up is a moral, social and economic programme for the whole of government. It places emphasis on ensuring no community is left behind.
Local Road Network		England's road network consists of motorways, major 'A' roads, and local classified and unclassified roads. The vast majority of motorways and major 'A' roads for the strategic road network (SRN) and are man-aged by National Highways. All other roads are managed by local authorities and make up the local road network (LRN)
Major Road Network	MRN	The major road network (MRN) is the middle tier of England's road network, comprising the busiest and most economically important local authority A-roads.

Glossary of terms

Term	Acronym	Description
National Highways Licence		The Licence sets out the Secretary of State's statutory directions and guidance to National Highways.
Noise Action Plans		Noise action plans provide a framework to manage environmental noise and its effects. They also aim to protect quiet areas in agglomerations (large urban areas) where the noise quality is good. Noise Action Plans provide a framework for the local management of the Important Areas.
Noise Important Areas	NIA	Noise Important Areas (NIAs) for roads and railways are based upon the strategic noise maps results and are produced in line with the requirements set out in the noise action plans.
Office of Rail and Road	ORR	The Office of Rail and Road (ORR) is the independent safety and economic regulator for Britain's railways and monitor of National Highways
Park and ride		A park and ride offers parking with public transport connections that allows commuters and other people heading to city centres to leave their vehicles and transfer to bus, rail or car share for the remainder of the journey.
Platooning		Heavy Goods Vehicle (HGV) platooning is the use of technology to allow HGVs to travel safely in close proximity at speed with the driver of the lead vehicle controlling the speed, acceleration and braking of the whole 'platoon'.
Receptor (Air quality and Noise)		Location which is sensitive to noise/air quality issues
Regional Traffic Model	RTM	National Highways has a suite of five regional traffic models (RTMs) covering England's SRN. The models allow us to identify future performance and delay on the network, assisting with the development of the route strategies
Reliability		Reliability is the difference between the typical travel time, allowing for recurring delays, and the ob-served travel time. This measures the amount of variation due to unexpected variations or unplanned events. Like delay, it is measured in seconds per vehicle per mile. It is a concern for most drivers, but particularly affects just-in-time freight traffic and other strategic journeys.
Road investment strategy	RIS	A Road investment strategy (RIS) is a strategy that outlines a long-term programme for National Highways' mo-torways and major A-roads with the stable funding needed to plan ahead.
Road period		The defined period of time over which the government gives a funding commitment. The length of a road period will be specified at the beginning of the RIS development process. Road periods will be multi-year in order to provide the supply chain with increased certainty of investment and intent. Based on current prac-tice within the other infrastructure sectors, it is expected that road periods will continue to be five years in length, though the actual length will be decided by the government of the day.
Route objectives		Objectives for each route, informed by engagement and analysis, to support the current and future needs of customers and neighbours.
Safe System approach		The Safe System is the current best practice safety culture in road safety, developed over many years and derived most notably from the Swedish Vision Zero and Dutch Sustainable Safety strategies. A best practice road safety culture approach based on the principles that humans make mistakes which could lead to serious injury or death for which it is a shared responsibility of the road user, road managers, vehicle manufacturers, etc. to take appropriate actions to ensure road collisions do not lead to serious or fatal injuries.
Seasonal delay		Seasonal delay refers to the difference between the average afternoon peak delay for Fridays in August 2019 (high demand in summer holidays) and the average delay during very low demand periods (in this case, Christmas day is used). This measure is designed to reflect the parts of the network that do not appear to have a problem on average over the year but have seasonal peaks. Seasonal delay is of interest to tourist traffic, particularly people travelling to airports, or other destinations where arriving later than intended could have significant implications.

Term	Acronym	Description
Severance		The separation of people from facilities and services they use within their community.
Sites of Special Scientific Interest	SSSIs	A Site of Special Scientific Interest (SSSI) is the land notified as an SSSI under the Wildlife and Countryside Act (1981), as amended. SSSI are the finest sites for wildlife and natural features in England, supporting many characteristic, rare and endangered species, habitats and natural features.
Smart motorway		A smart motorway is a section of motorway that employs active traffic management (ATM) techniques to increase capacity through the use of technology including variable speed limits. There are three types of smart motorway: 1. Controlled Motorway: variable speed limits with the hard shoulder operating as it would on a conventional motorway. 2. Dynamic Hard Shoulder (DHS) Running: Variable speed limits with the hard shoulder selectively opened as a running lane during periods where traffic levels are too high for only three lanes of running traffic. When activated, vehicles can use the hard shoulder as a running lane. 3. All Lane Running (ALR): variable speed limits with the hard shoulder removed and converted to a permanent running lane. Smart motorways have a whole system of inter-related safety features, not present on conventional motorways, working together to help keep drivers and their passengers moving safely. The system includes: • variable speed limits to help keep traffic moving, reducing frustrating stop-start traffic and making journeys quicker • clearly signed and orange-coloured emergency areas set back from the road and with telephones linking directly to our control rooms • detection systems to monitor traffic for changes in flows • CCTV cameras that our operators are able to move and zoom to monitor and manage congestion and incidents, where notified. The system has the ability to see 100% of the carriageway • signs and signals to provide better information to drivers which can alert drivers to hazards ahead and display Red X signs to close lanes to other traffic when a stopped vehicle is identified • enforcement cameras to deter the minority who break speed limits and ignore Red X signs • radar stopped vehicle detection
Spatial planning		Spatial planning decides how land should be used or protected. It also organises, designs and makes decisions on where new homes, roads and other infrastructure should be built. Spatial planning aims to make places attractive, safe and environmentally friendly. National Highways is a statutory consultee in the planning system and we encouraged others to seek early advice from us if their development proposal is likely to impact the strategic road network.
Special Areas of Conservation	SACs	A Special Area of Conservation (SAC) is the land designated under Directive 92/43/ EEC on the Conserva-tion of Natural Habitats and of Wild Fauna and Flora.
STATS19		Data on road traffic casualties on the roads in Great Britain are collected via the STATS19 process. These statistics are collected by police forces, either through officers attending the scene of incidents, from mem-bers of the public reporting the incident in police stations after the incident, or more recently online and then validated and published annually by DfT. STATS19 road traffic collision and casualty data is published annually by DfT in the Autumn and provides details of the previous calendar year. These reports have used the data available at the time of analysis, 2015-2018.
Statutory consultee		Statutory consultees are those organisations and bodies, defined by statute, which local planning authorities are legally required to consult before reaching a decision on relevant planning applications.
Strategic Rail Freight Interchange		A large multi-purpose rail freight interchange and distribution centre linked into both the rail and road system.

Glossary of terms

Term	Acronym	Description
Strategic Road Network	SRN	The strategic road network (SRN) covers more than 4,500 miles of motorways and major A-roads.
Strategic Traffic / Strategic journeys		Long distance traffic / journeys
Sub-national Transport Bodies	STBs	Sub-national Transport Bodies (STBs) have a key role in formulating transport strategy and identifying investment priorities at the sub-national level, including for highways. There are seven STBs in England, which are tasked with developing transport strategies and studies for their region. Through the development of their evidence bases with their constituent local authorities and Local Enterprise Partnerships, their work highlights multi-modal issues, need and opportunities, with investment priorities provided to the Secretary of State for Transport.
Transport-related social exclusion		Where limited access to transport or other issues with the transport system means that people cannot fully participate in society in the way they would like
Trunking / De-trunking		De-trunking is the process of returning a National Highways road to the local highway authority con-trol and vice versa for trunking
UNESCO World Heritage Site		Inscription as a UNESCO World Heritage Site is an acknowledgement of the global significance of such places.
Union connectivity		Transport connectivity between the nations of the United Kingdom.
Variable Messaging Signs		The Traffic Signs Regulations and General Directions 2016 (TSRGD) define a variable message sign as: “a device capable of displaying, at different times, two or more aspect…”. These aspects may take the form of a sign prescribed by the TSRGD, a legend in accordance with Schedule 16 to TSRGD, a non-prescribed temporary sign or a blank grey or blank black face. Thus, the expression “variable message sign” (VMS) encompasses all types of variable sign from simple flap-type signs to complex light-emitting panels.
Vulnerable Road User		Walkers, cyclists and horse riders

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