Route Strategy Initial Overview Report

Midlands and Gloucestershire to Wales

May 2023

national **highways**

Contents

The routes

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Sub-national Transport Bodies

■ England's Economic Heartland

■ Midlands Connect

■ South West Peninsula

■ 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.

PLYMOUTH

PENZANCE

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 Midlands and Gloucestershire to Wales 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 Midlands and Gloucestershire to Wales route, which includes approximately 180 miles of the SRN, provides important east–west transport links between England and Wales via the M54, A5, A458 and A483 to the north of the region and the M50 and A40 to the south.

The A49 connects these two corridors, providing a north–south link through the Welsh Marches, encompassing the counties of Gloucestershire, Herefordshire and Shropshire, with the Welsh border in the west.

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

- Birmingham to Exeter
- South Midlands
- London to Scotland West (South)

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:

- Route sections of the A40, A49, A5, A458 and A483 with safety ratings of only 1 or 2 from the International Road Assessment Programme
- Locations where people were killed or seriously injured in collisions on the A40, A49 and A5

Network performance

- Delays on route sections of the A40, A49 and A5, where there are single carriageways, numerous junctions and the routes pass through built-up areas
- Forecast future delays on route sections of the A40, A49 and A5, due to predicted increases in traffic flows on sections where there are current delays and additional route sections, such as the M50 and A40 around Ross-on-Wye
- Potential impact of delays and the ability to progress development opportunities around Shrewsbury, Hereford, Gloucester, Cheltenham and Tewkesbury

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 minimise greenhouse gas emissions

- A desire to build resilience to future climate change

- Safeguarding Areas of Outstanding Natural Beauty and other locations with environmental designations or of cultural heritage importance

- Air quality and noise impacts in settlements served by the route

- Severance in communities along the route

Growing the economy

- Commercial development and housing growth around Shrewsbury, Hereford, Gloucester and Tewkesbury

- Connections between rural areas served by the route, particularly those with high levels of deprivation, and the West Midlands, Gloucester and Bristol areas, to increase the economic potential of these areas and provide access to wider economic opportunities

- Cross-border connections between the Midlands and Wales, to support economic opportunities in both areas

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 SRN's geotechnical assets

- Ensuring that drainage assets are maintained so that their good structural and service conditions can be upheld

A technology-enabled network

- Traffic information for road users

- Refuelling facilities for alternative fuel vehicles

Legend

Midlands and Gloucestershire to Wales route

SRN

MRN

Local roads

OSWESTRY

SHREWSBURY

A483

A5

A458

LUDLOW

A49

LEOMINSTER

HEREFORD

ROS

A40

Esri UK, Esri, HERE, Garmin

N

A50

A50

M6

A42

A38

M1

TELFORD M54

BIRMINGHAM

M6

KIDDERMINSTER

M40

M5

A46

M50

TEWKESBURY

SS-ON-WYE
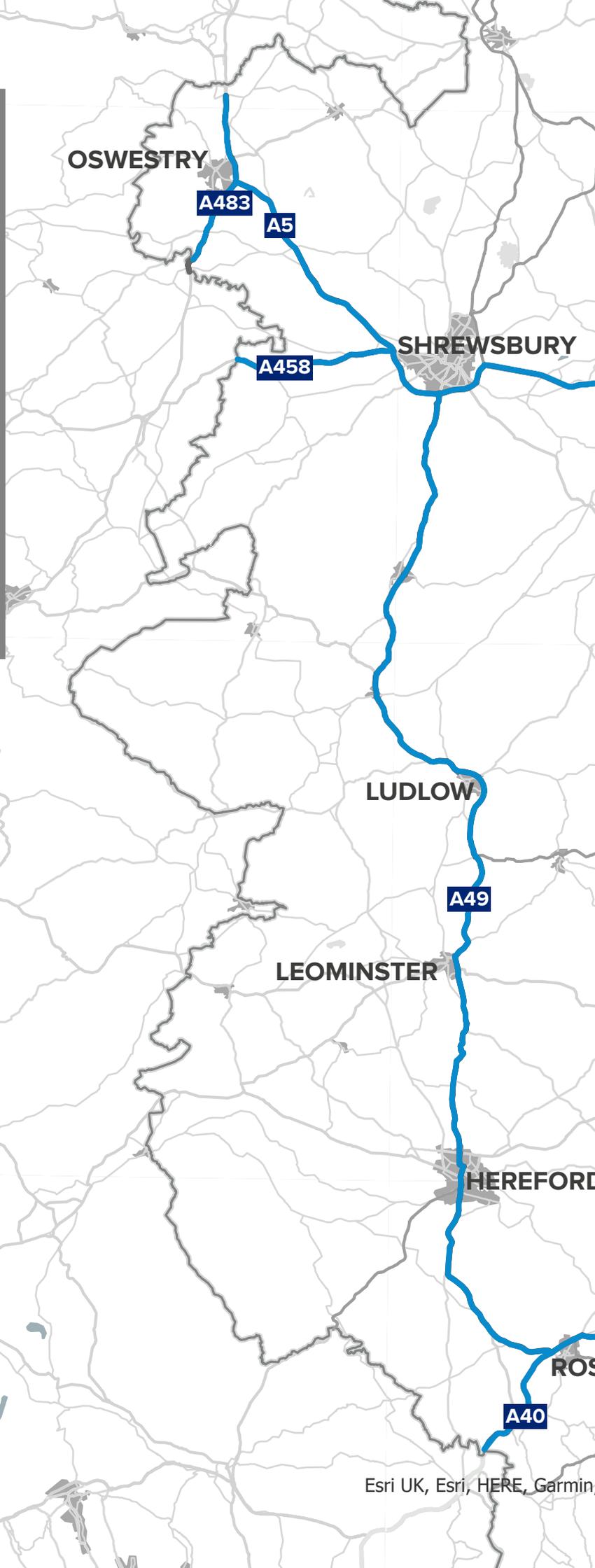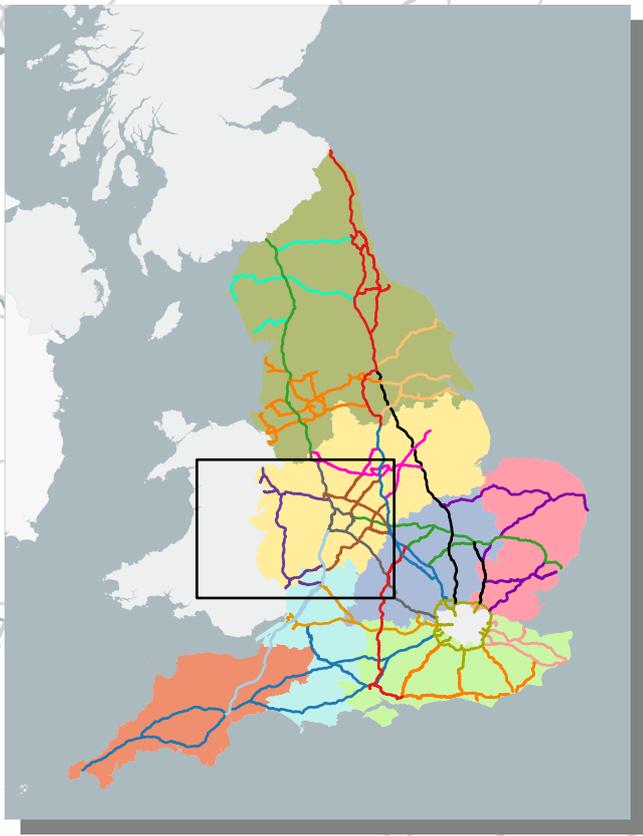
A40 GLOUCESTER

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.

Ref.	Route objective	DfT's strategic objectives for our 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
A	**Improve safety for all:** provide safe journeys on the A40, A49, A5, A458 and A483 to benefit all road users and local communities	✓					
B	**Improve cross-border connectivity between the Midlands and Wales:** improve the gateways of the A5, A458, A483 and A40 between Wales and the Midlands, supporting cross- border connectivity, freight strategy, economic links and the tourism industry of the Marches and Mid Wales		✓		✓		
C	**Support east-west connectivity to economic opportunities and services:** enable and support effective connections between communities with high deprivation and key employment opportunities and services in the West Midlands and the areas of Gloucester and Bristol				✓		
D	**Improve north-south connections through the Marches:** provide efficient, safe and reliable north-south connectivity for people and goods between and within settlements on the A49 corridor, particularly the economic centre of Hereford	✓	✓	✓	✓		
E	**Enable integration with active travel modes:** enable effective local connectivity through better integration and coordination with active travel modes at locations on or near to the A5, A458, A483, the A49 and the A40 north of Gloucester, to benefit active travel users and local communities		✓	✓			
F	**Be a better neighbour:** be a better neighbour by safeguarding the environment and reducing air quality and noise impacts on settlements with Air Quality Management Areas (AQMAs) and Noise Important Areas (NIAs), and along the A49, A483 and A5			✓			
G	**Promote improved communications for all users:** promote improved communications 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*[4].

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*.

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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:

- identify committed schemes for delivery as part of future RIS periods. This will be part of the wider RIS setting process

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- preclude the inclusion of other locations for consideration in the light of other evidence or imperatives

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 Midlands and Gloucestershire to Wales. 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.
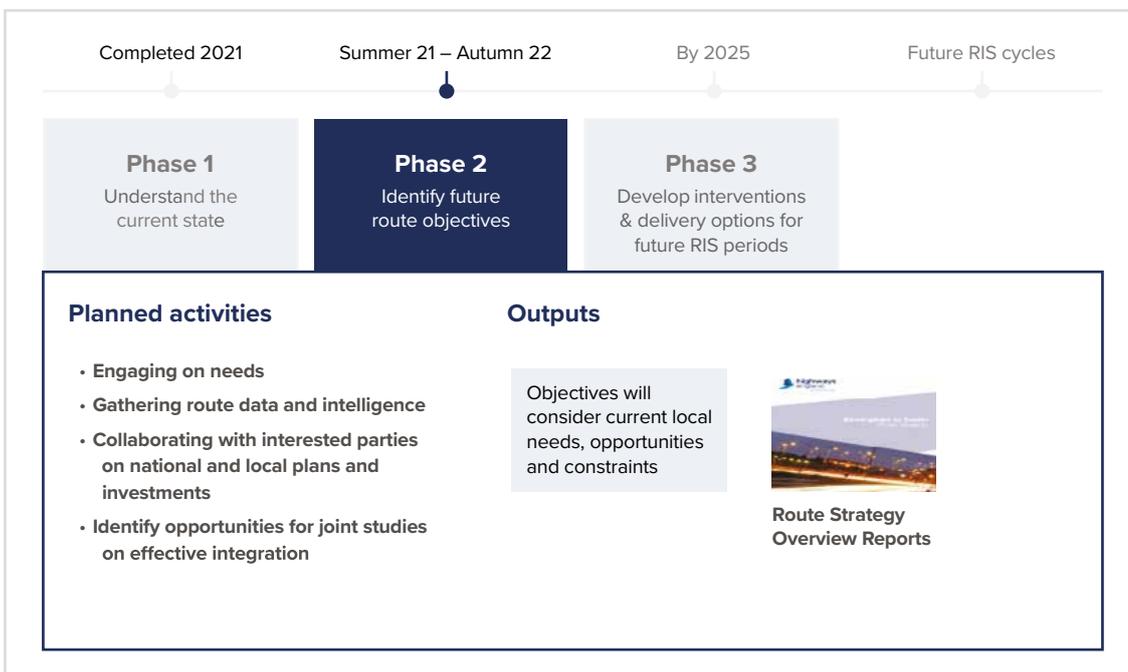

Figure 1: The route strategies delivery phases

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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.

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.

RESEARCH

- Strategic Studies
- Route strategies
- National Highways *Strategic Road Network (SRN) initial report*
- Public consultation on *SRN initial report*

DECISION

- Department for Transport produces Road *investment strategy*
- National Highways produces *Strategic business plan*
- Office of Rail and Road advises government on efficiency and deliverability of both

MOBILISATION

- Scheme development
- National Highways publishes *Delivery plan*
- Maintenance and renewals plans

DELIVERY

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.

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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/

EASY TO MAINTAIN

Minimal resource, cost and time to update, becoming an 'on the shelf' approach to strategic RIS planning.

FORWARD THINKING

Priorities for all parts of the strategic road network to inform multiple RIS cycles.

DYNAMIC

Flexible and responsive to significant external influences, such as carbon reduction and the environment, between RIS settlements.

PLANNING THE FUTURE OF OUR ROADS

INTEGRATED AND COLLABORATIVE

Recognise needs of customers and neighbours, approach to be widely accessible and integrated with the rest of the transport system where it benefits the strategic road network.

WIDELY SUPPORTED

Recognised externally, as the principal network planning tool for the strategic road network.

BROAD

Identify a full range of options and opportunities in each RIS cycle informing operational and investment priorities.

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.

Leisure	25%
Commuter	21%
Resident, parish	20%
Local Authority and other government body	8%
Business road user	8%
Other	7%
Walker, cyclist and horse rider	5%
Freight	2%
Environmental group	1%
Public transport	1%
Member of Parliament	1%
Motorcycle	<1%
Other trade association	<1%
Sub-national Transport Body	<1%
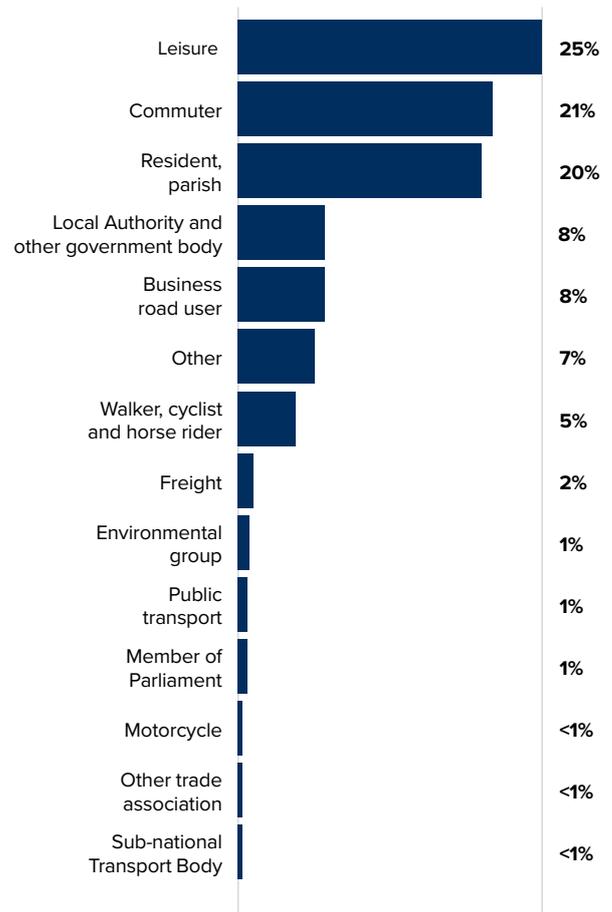
Figure 4: All responses to online tool by participant type

Journey 302 (18%)

Specific Section of the Route Strategies 791 (46%)

National 624 (36%)
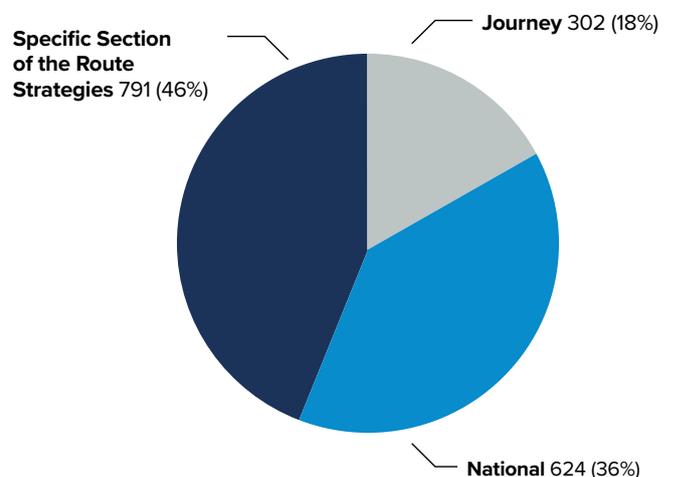
Figure 5: All response to online tool by type

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
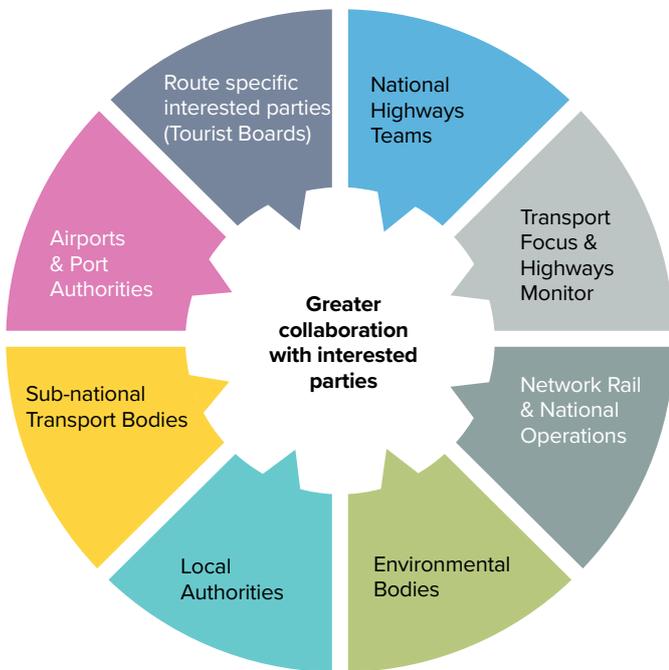
Figure 6: Interested parties involved in the route strategy engagement

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.
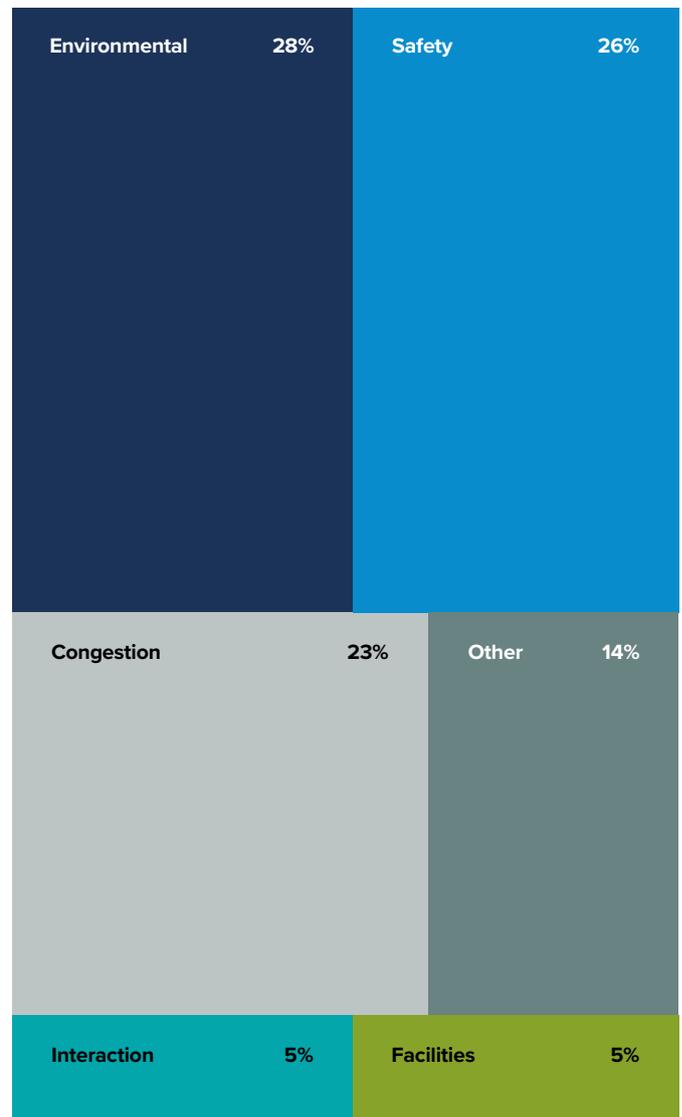
Figure 8: National themes from feedback through the online tool

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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:

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

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

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

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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

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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 more 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 approximately 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

Legend:

- Midlands and Gloucestershire to Wales route
- SRN
- MRN
- Local roads
- National Parks
- Ancient Woodland
- Sites of Special Scientific Interest (SSSI)
- Areas of Outstanding Natural Beauty (AONB)
- World Heritage Sites
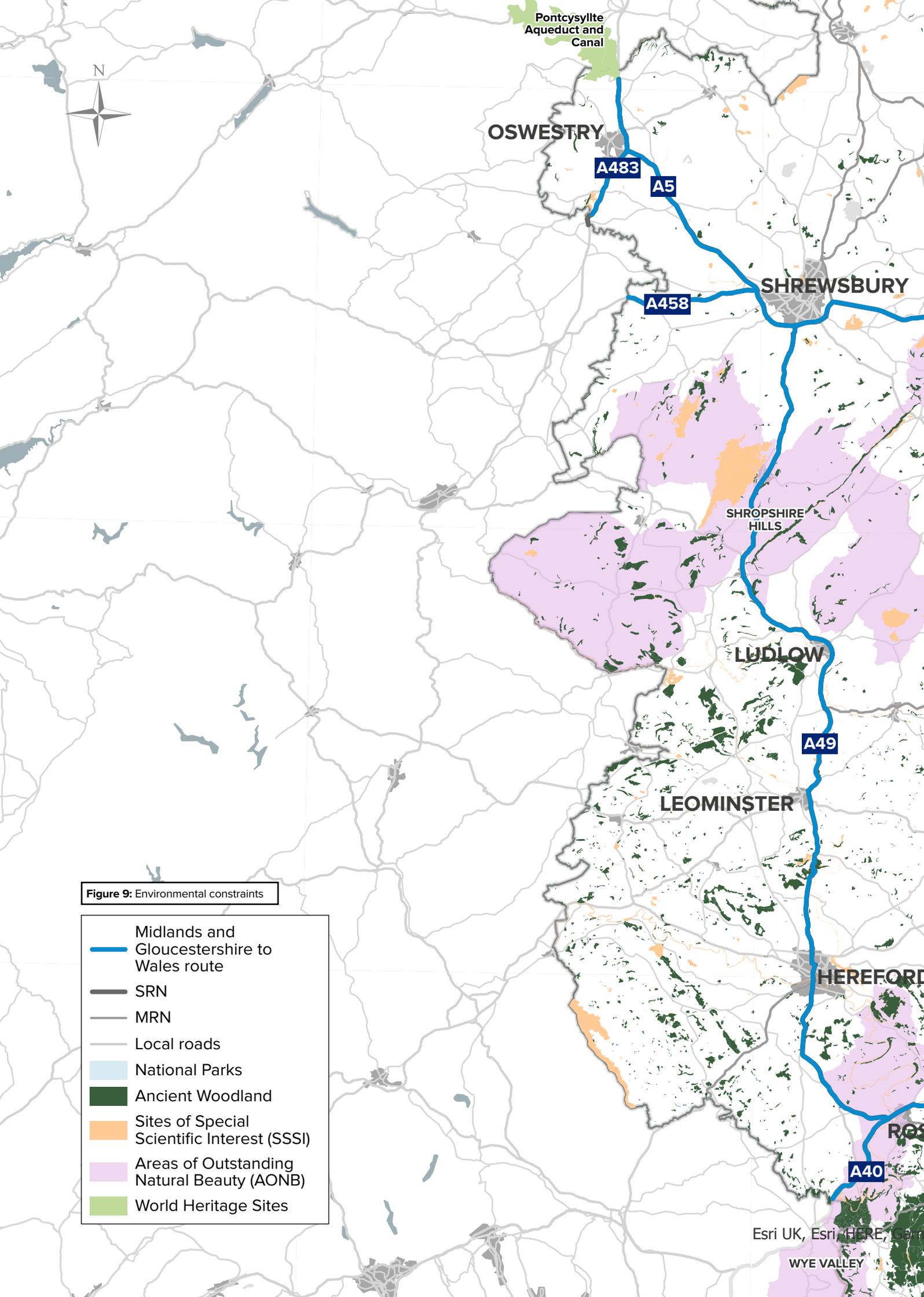
Map labels: Pontcysyllte Aqueduct and Canal, OSWESTRY, A483, A5, A458, SHREWSBURY, SHROPSHIRE HILLS, LUDLOW, A49, LEOMINSTER, HEREFORD, A40, ROSS, WYE VALLEY

Esri UK, Esri, HERE, Garmin

Derwent
Valley
Mills

A50

A50

A453

M6

A42

A38

A50

M1

CANNOCK CHASE

TELFORD

M54

Ironbridge
Gorge

BIRMINGHAM

M6

KIDDERMINSTER

M40

M5

A46

MALVERN
HILLS

M50

TEWKESBURY

SS-ON-WYE

A40

GLOUCESTER

Blenheim
Palace

COTSWOLDS

**Our
network
connects
the country**

02 The route

The Midlands and Gloucestershire to Wales route, which includes approximately 180 miles of the SRN, provides important east–west transport links between England and Wales via the M54, A5, A458 and A483 to the north of the region and the M50 and A40 to the south. The A49 connects these two corridors, providing a north–south link through the Welsh Marches, encompassing the counties of Gloucestershire, Herefordshire and Shropshire, with the Welsh border in the west.

The route runs through or alongside three Areas of Outstanding Natural Beauty, the Shropshire Hills, the Wye Valley and the Malvern Hills, and provides links to the two UNESCO World Heritage Sites of Ironbridge Gorge and Pontcysllte Aqueduct.

As shown in Figure 10 this route provides transport corridors between West Midlands, Gloucestershire and Wales, linking several towns and cities including Gloucester, Ross-on- Wye, Hereford, Leominster and Shrewsbury. The route predominantly consists of rural A-roads, which are mostly single carriageways with numerous side road junctions and at-grade roundabouts that provide local access to towns and villages. It also includes two motorways: the M50 towards the southern end of the route, which links to the M5, part of the Birmingham to Exeter route, and the M54 in the north, which links to the M6, part of the London to Scotland West (South) route. These motorways play an important role supporting journeys between the Midlands and Wales.

The northern section of the route includes stretches of the A5, A458 and A483, which provide important strategic links between mid-Wales, Shropshire and the West Midlands, Merseyside and North West England. They also support local traffic and employment journeys across Shropshire, in addition to providing an important tourist and leisure route to mid and north Wales by carrying high volumes of seasonal traffic during holiday periods.

The A5 is also an important road for freight traffic travelling to Holyhead port from the Midlands, for ferries to Ireland.

The A49 connects the English and Welsh borders from south Wales to Herefordshire and Shropshire, and to Cheshire and north Wales via the A5, A458 and A483. The A49 is an alternative north–south corridor to the motorway route via the M50, M5 and M6 motorways for longer-distance travel, although studies undertaken by Herefordshire Council show that the majority of current traffic using the A49 is making more local and intra-regional journeys.

To the south of the M50, the A40 provides an additional east–west corridor between Wales and Gloucestershire. The A40 is used for both long-distance travel and commuter journeys between Ross-on-Wye, Gloucester and Cheltenham, and provides a link from Wales to the M5. The A40 is the first crossing point of the River Severn north of the M4 and M48, an alternative to those travelling into Wales via those routes. The western stretch of the A40 is largely rural, whereas the eastern section near Gloucester is more urbanised and therefore has a greater proportion of short local journeys, in addition to longer-distance strategic traffic.

The main centres of employment along the route are Gloucester, Cheltenham, Hereford, Shrewsbury and Telford, with smaller but significant centres of employment in market towns such as Leominster and Ludlow. There are a few areas which fall into the worst 10% of areas on the Index of Multiple Deprivation in England[16], notably south Telford, Leominster and the Forest of Dean, and they are reliant on good connectivity with the Gloucester and Bristol area and the West Midlands for inward investment and 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). During the first (2015-2020) and second road periods, no new schemes were opened to traffic on the Midlands and Gloucestershire to Wales route. 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.

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

Figure 10: The route

OSWESTRY

A483

A5

A458

SHREWSBURY

LUDLOW

A49

LEOMINSTER

HEREFORD

ROS

A40

Esri UK, Esri, HERE, Garmin

Midlands and Gloucestershire to Wales route

SRN

MRN

Local roads

N

TELFORD M54

BIRMINGHAM

KIDDERMINSTER

M6

M50

TEWKESBURY

SS-ON-WYE

A40 GLOUCESTER

A50

A50

A42

M1

M6

A38

M40

M5

A46
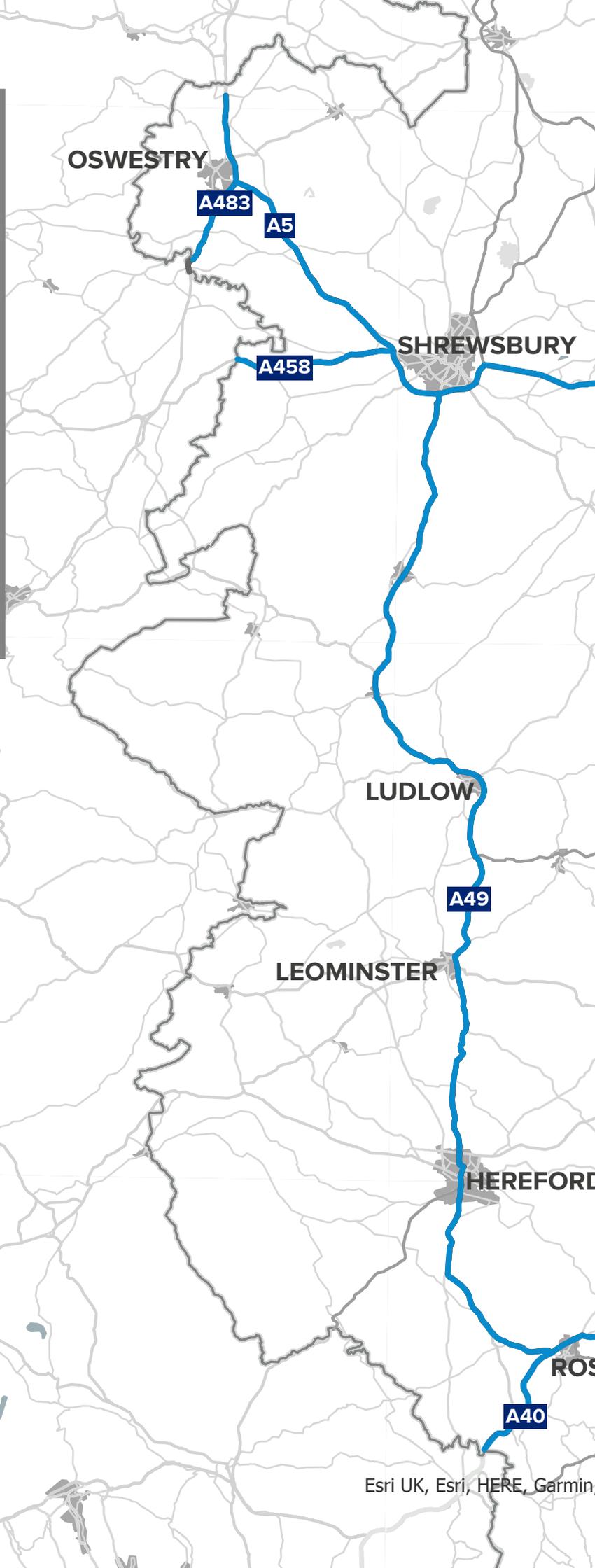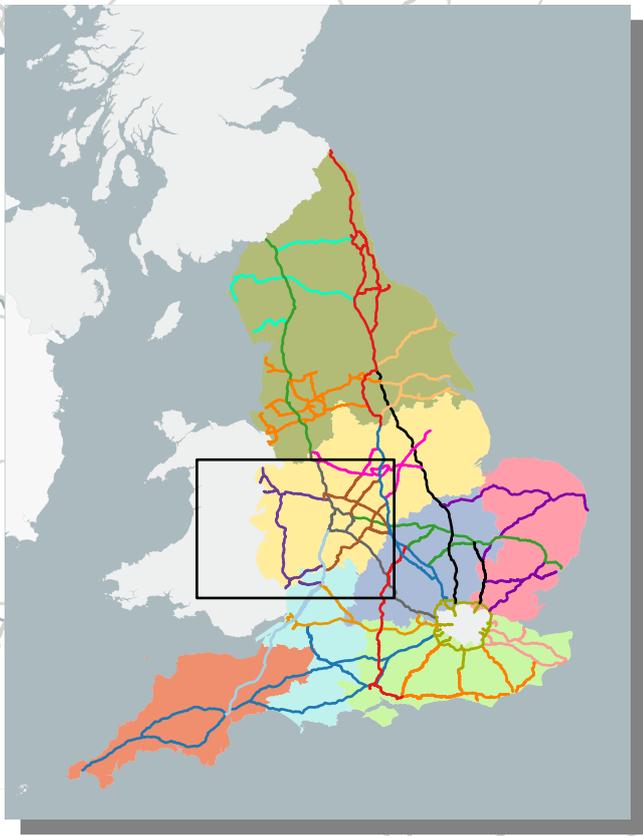
Listening to your feedback

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 Midlands and Gloucestershire to Wales area

Early engagement with the Department for Transport (DfT), Office of Rail and Road, Transport Focus, Midlands Connect and Western Gateway (Sub-national Transport Bodies) and Network Rail shaped our engagement with customers and neighbours in the Midlands and Gloucestershire to Wales 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 Midlands and Gloucestershire to Wales 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 Midlands and Gloucestershire to Wales 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*[17] 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 Midlands and Gloucestershire to Wales 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 on various sections of the A49, including Moreton-on-Lugg, Wellington, Hope under Dinmore and key junctions such as the A417, due to the high number of turning movements, length between safe overtaking sections and mix between faster traffic and slower moving agricultural traffic

- The number of pedal cycle collisions within Hereford on the A49

- Safety concerns of local residents in regard to walkers, cyclists and horse riders along the A40 from M5 Junction 11 west to the county boundary

- Use of the B4221 between Junction 3 of the M50 at Gorsley and the A40 at Kilcot by an increasing number of heavy goods vehicles, instead of the A40 between Gloucester and Ross-on-Wye, and the resultant safety concerns of local residents

- Speeding and road user safety at junctions in Pant on the A483, and on the A458 between the A5 and the Welsh border

ii) Views on: Network performance

- Congestion and delays on the A49 through Hereford, particularly at peak times, with conflict between long distance through traffic and local journeys, including those made by walkers and cyclists

- Worsening performance of the A49 in terms of delays and capacity, due to a combination of residential growth and aspirations for the reallocation of road space to increased provision for buses and active travel modes

- Congestion and delays on the A40 between the Huntley and Over roundabouts, and a view that the A40/B4215 Newent junction causes problems with right turns stacking back onto lane 2 of the A40 dual carriageway, west of Gloucester

- Congestion and delays on the A5 roundabouts around Shrewsbury

- Network performance on the cross-border links of the A458 and A483

- Long journey times to more isolated areas of the network

- The capacity of the SRN and whether it is sufficient to enable economic growth and development anticipated in Local Plans

- Sharing of cross-border traffic data to better understand network performance

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

iii) Views on: Improved environmental outcomes

- Environmental impacts associated with the A49 through the urban area of Hereford—an Air Quality Management Area—as well as severance for active travel users, safety concerns and the volume of traffic all impacting local communities

- Biodiversity along the SRN and the MRN

- Implications of Midlands Connect's work on the carbon baseline which indicates that the largest proportion of CO_2 emissions are from 5 mile+ journeys especially on trunk road routes

- An improved understanding of carbon accounting for the SRN and the MRN, and how National Highways could contribute to a reduction in carbon emissions

- The opportunity to improve sustainable travel access to the SRN and the MRN, particularly in light of the Government's focus on decarbonisation and active travel

- Potential improvements to the active travel (cycling and walking) network for travelling within and between urban centres

- The views of Second Road Investment Strategy (RIS2) consultees in Gloucestershire which highlighted a lack of cycling infrastructure along the A40 between Highnam and Churcham, west of Gloucester City and issues with access to the Forest of Dean

- Consideration of cross border active travel measures, for example through Pant and Llanymynech on the A483

- The potential impacts of the *Wales Transport Strategy*[18], published by the Welsh Government in March 2021, with the focus being on modal shift and the priorities being sustainable forms of transport including walking, cycling and public transport first, followed by electric vehicles and then private car

- The need for a multimodal strategy for cross-border routes, based on collaboration between National Highways, local authorities and the Welsh Government

iv) Views on: Growing the economy

- Network performance on connections between Wales and the Midlands and north to south, which make it difficult to attract investment

- Improved connectivity between the Forest of Dean area and Hereford, Ross-on-Wye, Worcester and Birmingham, to provide socio-economic benefits for that area

- Improvements to cross border connections to facilitate better socio-economic links between the Midlands and Wales

- The importance of the A458 and A483 as freight corridors to the growth of the Mid Wales economy

- Access to international gateways, and the need to understand future usage of Holyhead Port and the long-term effects on the rest of the UK network

- Anticipation of a future increase in tourism traffic along the route

- The challenge of progressing the Government's net zero carbon targets[19] and supporting economic growth in a large rural county such as Herefordshire. A key challenge will be how the A49 can be modified within the Hereford urban area to help support short distance active travel modes but also maintain capacity for growth

- Hereford is likely to be a future focus for housing and employment growth as the Local Plan is updated. The capacity for growth, including the A49 will be important to establish for the 2041 time horizon

18 Welsh Government (March 2021) *Llwybr Newydd: the Wales Transport Strategy 2021*.
https://gov.wales/sites/default/files/publications/2021-03/llwybr-newydd-wales-transport-strategy-2021-full-strategy_0.pdf
19 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

- Collaborative working and joint studies between the Local Authorities and National Highways would be helpful to consider the impacts of Local Plan updates in Herefordshire and specific settlements, such as Hereford, Leominster and Ross-on-Wye

- Core strategy housing proposals for Leominster, noting 1700 homes, which are likely to be revisited as part of the Local Plan review as there has been limited development since 2016

- The adopted Joint Core Strategy[20] (Cheltenham, Gloucester, Tewkesbury), which outlines the spatial strategy for 35,175 new homes and 39,500 new jobs by 2031 alone and is subject to review which is likely to increase growth to 2041

- The need to understand how the SRN can help enable growth at a local level, not just regional or national growth

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

- Change in the status of the A485 and A483 from SRN to MRN, to ensure that improvements are made and that the routes retain their strategic importance

- The operational engagement between North and Mid Wales Traffic Management Centre and National Highways needs to be improved

vi) Views on: Technology-enabled network

- Provision of real-time traffic information, which gives drivers instant data on traffic conditions ahead of them

- Advance signage on local roads ahead of junctions would help drivers make a decision about whether to join the SRN

- Focus on the promotion of electric vehicles in the *Wales Transport Strategy*[21]

- Facilities for electric vehicle charging, which are required across the whole UK SRN.

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20 Gloucester City Council, Cheltenham Borough Council and Tewkesbury Borough Council
   (December 2017) *Joint Core Strategy.* https://www.jointcorestrategy.org
21 Welsh Government (March 2021) *Llwybr Newydd: the Wales Transport Strategy 2021.*
   https://gov.wales/sites/default/files/publications/2021-03/llwybr-newydd-wales-transport-strategy-2021-full-strategy_0.pdf

Engagement quotes from customers and neighbours

"Traffic on the A49 through Hereford was light, and moving well - by no means a common occurrence"

(Transport Focus SRUS)

"Insufficient overtaking locations and too many speed restrictions [A49]"

(Transport Focus SRUS)

"Light traffic, no delays, good road condition [M50]"

(Transport Focus SRUS)

"Please provide safe, convenient crossings for pedestrians and cyclists at all junctions as the A5 goes round Shrewsbury"

(Route strategies engagement)

"This important trunk road (A483) connecting NW England and North Wales with Mid-Wales urgently needs upgrading...as well as a safety issue it includes congestion, environment and interaction with local roads"

(Route strategies engagement)

"Clear road and well-maintained [A40]"

(Transport Focus SRUS)

"Traffic very light and moved reasonably well [A49]"

(Transport Focus SRUS)

"This section of the A5 (between Shrewsbury and Oswestry) which also carries A483 traffic is very busy and congested particularly at junctions"

(Route strategies engagement)

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[22].

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.

😊	**Overall Satisfaction**	**70%**
🕐	**Journey time**	**75%**
👷	**Management of roadworks**	**** %**
	Surface quality	**62%**
	Feeling safe	**89%**
	Information permanent signs	**70%**
ALERT	**Information electronic signs**	**** %**

National Highways Region: Midlands
National Highways Area: Area 9 West Midlands
Individual road M50, M54, A5, A40, A49, A458, A483
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

Oswestry
Llangollen
A5

UL
3
6
9

**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.

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 Bodies that cover this route are:

• Midlands Connect

• Western Gateway

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*[23], and within our *Strategic business plan*[24] and *Delivery plan*[25]. 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*[26], 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. The plans are monitored and reviewed regularly, with annual reviews occurring ahead of each new financial year.

23 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*
24 Highways England (2020) *Strategic business plan: 2020-2025.* https://nationalhighways.co.uk/strategic-business-plan/
25 Highways England (2020) *Delivery Plan: 2020–2025.* https://nationalhighways.co.uk/delivery-plan/
26 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

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*[27] 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*[28] 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

In terms of roads, Midlands Connect is seeking investment to improve the service to users of the SRN and MRN, 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.

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27 Midlands Connect (March 2017) *Midlands Connect Strategy: Powering the Midlands Engine.*
   https://www.midlandsconnect.uk/media/1224/midlands-connect-strategy-march-2017.pdf
28 Midlands Connect (April 2022) *Fairer, greener, stronger: a Strategic Transport Plan for the Midlands.*
   https://www.midlandsconnect.uk/strategy

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) and onwards 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. None of these priority locations are on the Midlands and Gloucestershire to Wales route, although addressing poor east-west connectivity across the region and considering potential improvements to cross-boundary routes such as the A5, in conjunction with other Sub-national Transport Bodies and the Welsh Government, are components of the Strategic Transport Plan.

Western Gateway

The Western Gateway Sub-national Transport Body covers the area from Gloucestershire in the north of the South West region, to Dorset and Bournemouth, Christchurch and Poole in the south via Bristol and Wiltshire. Western Gateway's objective is to maximise the capacity and resilience of the strategic transport corridors, and targets delivery of 300,000 new homes and 190,000 new jobs over the next 20 years. To achieve the area's full potential, there is a need to improve connectivity for businesses, employees, and the leisure and tourism sector.

Western Gateway is developing a long-term Strategic Transport Plan for the area with the following key objectives:

- Ensure effective access to labour markets
- Greater integration of employment clusters

- Enhance business connectivity to international markets
- Improve North-South connectivity
- Decarbonisation of the strategic transport network
- Adoption of electrification and / or alternative fuels

Western Gateway also explicitly target a shift in journeys from private car use to other modes.

The Western Gateway *Economic Connectivity Study*[29] identified improvements to the M5 Cross Country corridor, adjacent in the east to the Midlands and Gloucestershire to Wales route, as providing the highest economic benefits of the 15 corridors appraised. The study forecast agglomeration of £772 millon, additional gross value added (GVA) of £1.3 billion and £207 million in land value gains attributed to improvements on the corridor. The intention of these connectivity improvements is to boost productivity and employment, particularly in high tech sectors; and housing delivery.

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.

29 Western Gateway (July 2019) *Economic Connectivity Study.* https://westerngatewaystb.org.uk/strategy/economic-connectivity-study

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 south of the Midlands and Gloucestershire to Wales area the MRN provides connections from the A40 to South Wales, via the A48 to Chepstow and the A4136 to Monmouth, and from the A49 at Hereford to South Wales via the A465 through Abergavenny. Further north the MRN links the A49 to Kidderminster and Birmingham via the A456, an important east-west connection for the Marches. In the north of the area the MRN provides links between the M54 and A5 and north-west England via the A49 north from Shrewsbury and the A518 and A41 north from Telford.

Freight and logistics

The *Future of Freight: a long-term plan* (DfT June 2022)[30] 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 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. The Midlands has a high density of national distribution centres known as the 'Golden Triangle'.[31][32] Located between Nottingham, Bedford and Birmingham it is the UK's primary distribution hub due to its relatively central location.

There are several freight distribution centres in the Gloucester area, adjacent to the M5, but on the Midlands and Gloucestershire to Wales route itself there are very few centres served by the route (located in Hereford, Shrewsbury and Telford). The percentage of heavy goods vehicles using the route is also generally low or very low with the exception of the M50 and the M54 between the M6 and Telford, where heavy goods vehicles are over 20% of all traffic.

However, the route does provide important freight road links to both South, Mid and North Wales, including the port of Holyhead where in 2019, 1.9 million people and 5.3 million tonnes of goods moved to and from Ireland. The route also provides links between South Wales and the Trans-Midlands Trade Corridor (A46) which stretches 150 miles across central England from the A5 at Tewkesbury, and forms part of the South Midlands route.

30 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
31 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.
32 Office for National Statistics (April 2022) *The rise of the UK warehouse and the "golden logistics triangle".* https://www.ons.gov.uk/
    businessindustryandtrade/business/activitysizeandlocation/articles/theriseoftheukwarehouseandthegoldenlogisticstriangle/2022-04-11

The recommendations of both *Future of Freight* and the *UK Connectivity Review*[33], including the establishment of UKNET, a strategic transport network for the whole of the UK, mean that the Midlands and Gloucestershire to Wales route could become increasingly important both in providing direct road freight links between the Midlands and Wales, and in delivering vital connections between more remote areas and the strategic transport network.

The published *National Survey of Lorry Parking* undertaken by the Department for Transport in 2017[34] showed that utilisation of motorway service area freight rest facilities in the West Midlands was 87%. More provision will be needed if freight journeys continue to increase as expected.

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[35] 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.

In the Midlands and Gloucestershire to Wales area there are important rail stations at Hereford, with direct rail connections to Worcester and Birmingham, and Shrewsbury. Rail services are generally north-south in direction, via the Transport for Wales line between Cardiff and Manchester and the Great Western Railway line between Gloucester and Birmingham. East-west rail journeys generally have longer journey times and greater need for interchange.

33 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
34 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
35 Network Rail *Our Delivery Plan for 2019-2024* website:
https://www.networkrail.co.uk/who-we-are/publications-and-resources/our-delivery-plan-for-2019-2024/
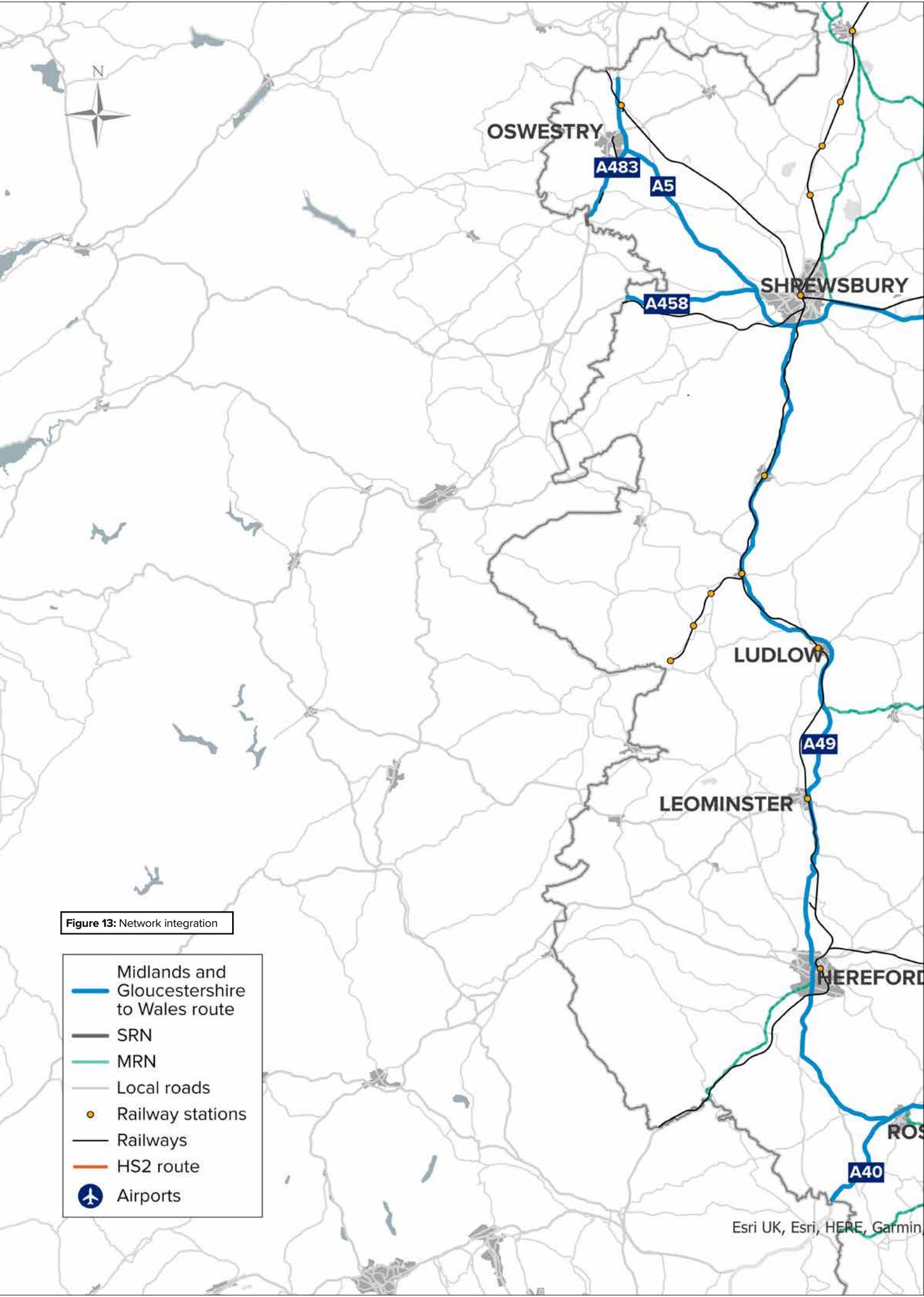
Figure 13: Network integration

Legend:
- Midlands and Gloucestershire to Wales route
- SRN
- MRN
- Local roads
- Railway stations
- Railways
- HS2 route
- Airports
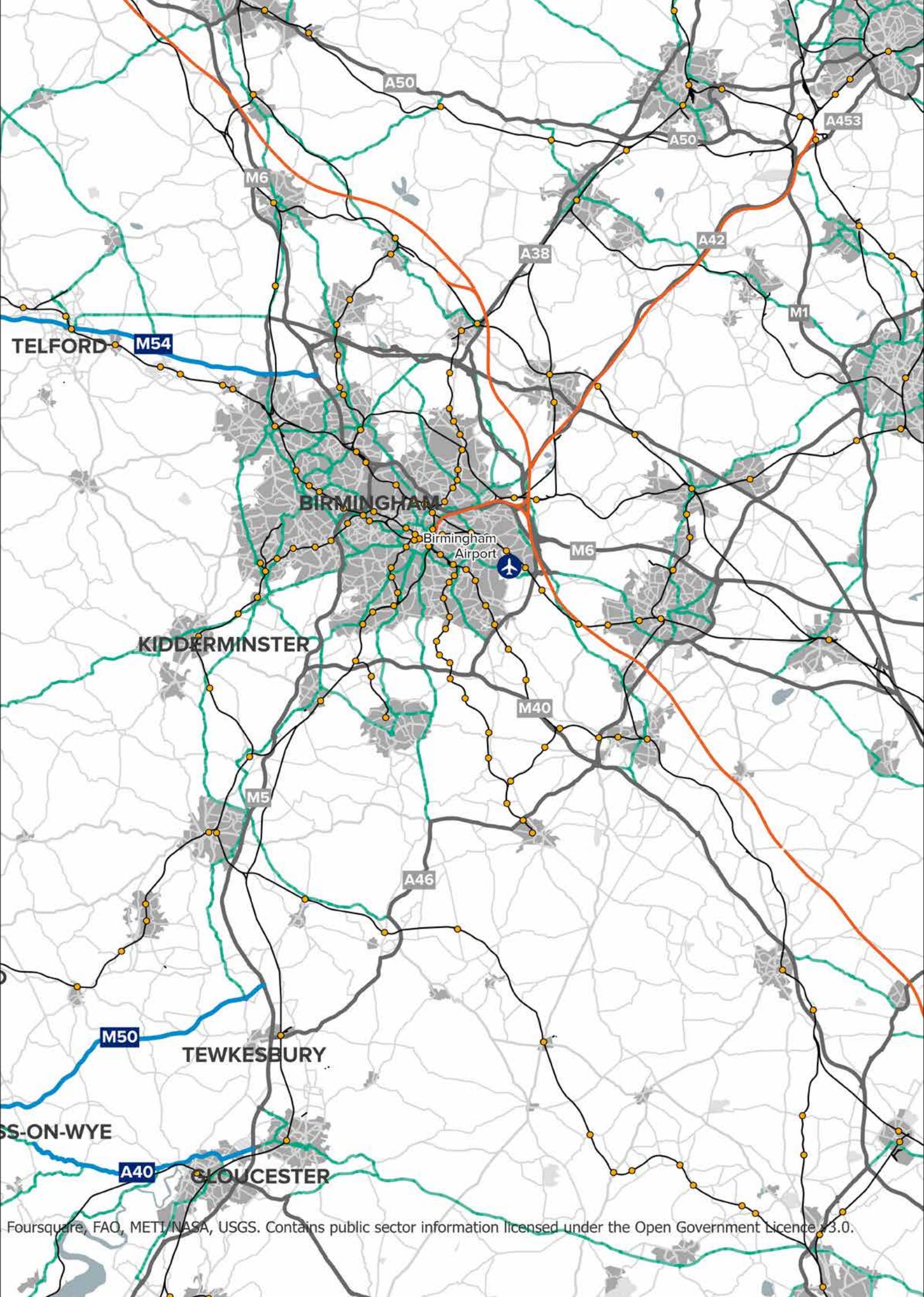
Map labels: OSWESTRY, SHREWSBURY, LUDLOW, LEOMINSTER, HEREFORD, ROS[S]

Road labels: A483, A5, A458, A49, A40

Esri UK, Esri, HERE, Garmin

TELFORD M54

A50

M6

A50 A453

A38 A42

M1

BIRMINGHAM

Birmingham
Airport ✈

M6

KIDDERMINSTER

M40

M5

A46

M50

TEWKESBURY

SS-ON-WYE

A40 GLOUCESTER

Network Rail is working with Transport for Wales and the Welsh Government on the identification of potential rail improvements between Mid Wales and the Midlands. Network Rail is also undertaking strategic planning studies of north-south links through the Marches, and there are committed service improvements over the next few years in the Transport for Wales line franchise. Network Rail is also supporting early development work on the potential line reopening between Gobowen and Oswestry, promoted by Cambrian Heritage Railways and funded through the Department for Transport's Restoring your Railway Fund.

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.

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*[36] 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.

Improving transport connectivity between the four nations of the UK is a government priority, as noted above, and the Welsh Marches is proposed as one of the corridors which should be included within UKNET–the proposed strategic transport network for the whole of the UK. The Review also notes that, to ensure that UKNET can meet its objectives, more remote areas of the country, including the Mid and West Wales, need to access strategic connections to support levelling up, improve social cohesion and facilitate economic development, particularly tourism which is vital to the economic success of the area served by the Midlands and Gloucestershire to Wales route.

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 Midlands and Gloucestershire to Wales route, the M54 and A5 corridor needs to be considered in the context of the connectivity it provides to Holyhead port, for freight and passenger traffic to Ireland. The M50 and A40 also provide links to the ports of South Wales from the Midlands and further north. Although there are no airports with international connections along the route itself, the route does provide links to Birmingham, Bristol and Cardiff airports from the areas it serves, in conjunction with other routes and the Welsh road network.

36 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

Croeso i Gymru
Welcome to Wales

Powys

Sir Drefaldwyn Montgomeryshire

30
LLANYMYNECH
Gyrrwch yn ddiogel
Drive safely

30
LLANYMYNECH
Gyrrwch yn ddiogel
Drive safely

**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.

Using the latest available iRAP data it shows that the following sections of the route have ratings of only 1 or 2:

- A49 between Ross-on-Wye and Shrewsbury

- A40 north and west of Gloucester

- A5 between north of Shrewsbury and the Welsh border

- A458 between the A5 and the Welsh border

- A483 between Oswestry and Pant

There are concentrations of collisions and sections of the route where people were killed or seriously injured:

- A40 west of Gloucester

- Sections of the A49 between Ross-on-Wye and Shrewsbury

- A5 south of Oswestry

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:

- A49 between Ross-on-Wye and Leominster

- A483 between Oswestry and Pant

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

Key challenges

- There are route sections on the A40, A49, A5, A458 and A483 with iRAP safety ratings of only 1 or 2

- There are route sections on the A40, A49 and A5 where people were killed or seriously injured
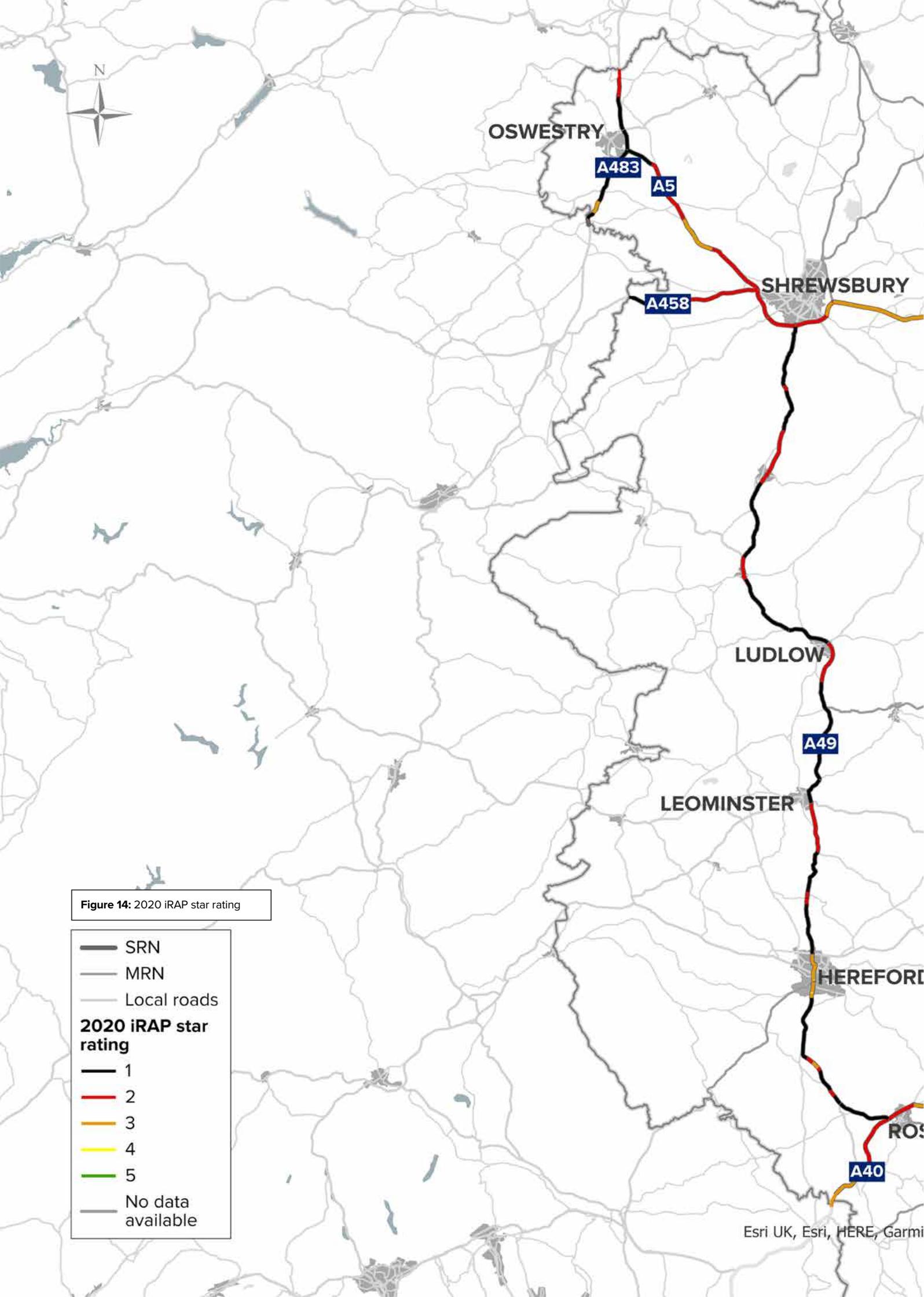
Figure 14: 2020 iRAP star rating

Legend:

- SRN
- MRN
- Local roads

2020 iRAP star rating
- 1
- 2
- 3
- 4
- 5
- No data available

Map labels: OSWESTRY, SHREWSBURY, LUDLOW, LEOMINSTER, HEREFORD, ROS

Road labels: A483, A5, A458, A49, A40

Esri UK, Esri, HERE, Garmi

TELFORD M54

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BIRMINGHAM

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TEWKESBURY

SS-ON-WYE

A40
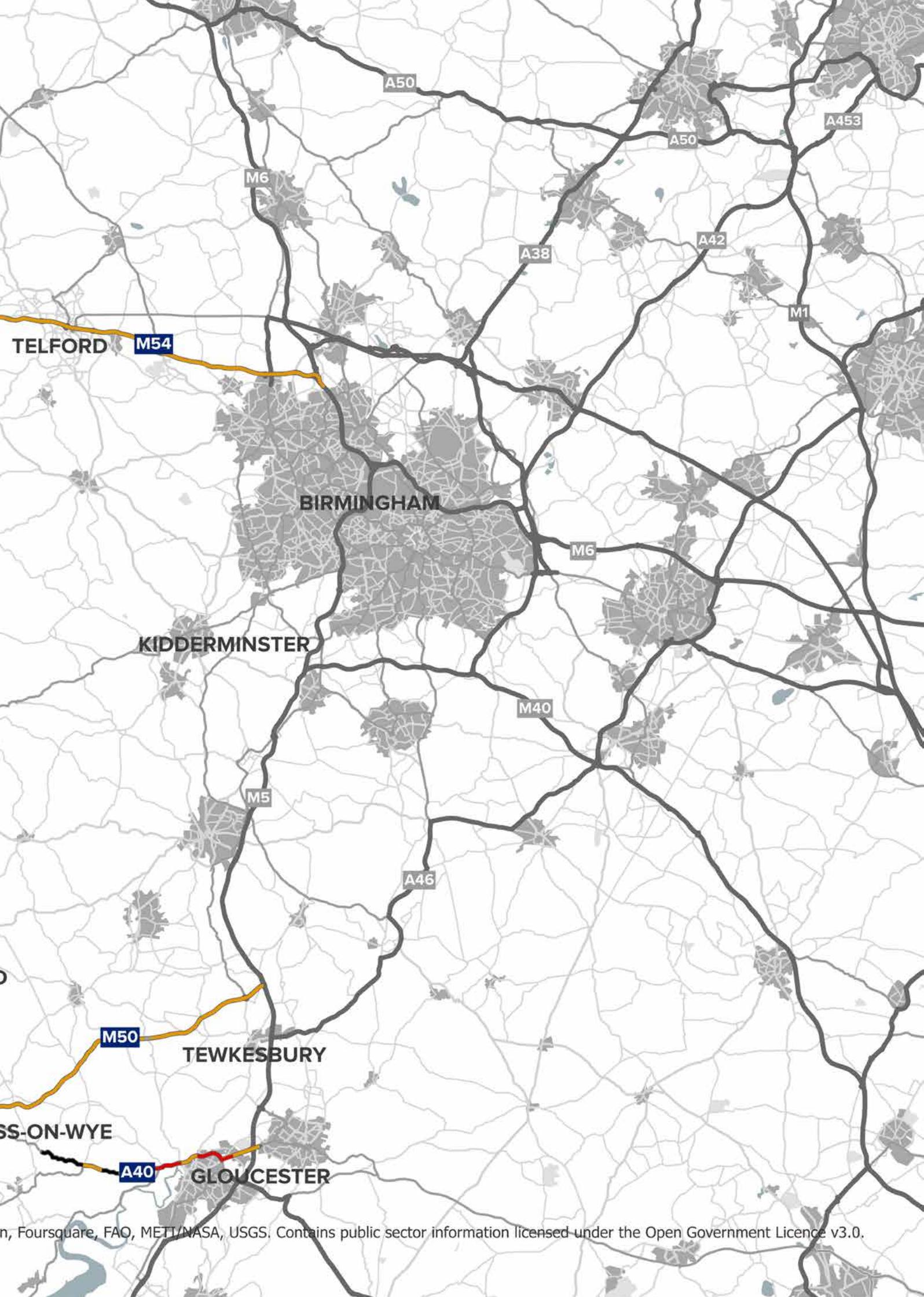
GLOUCESTER
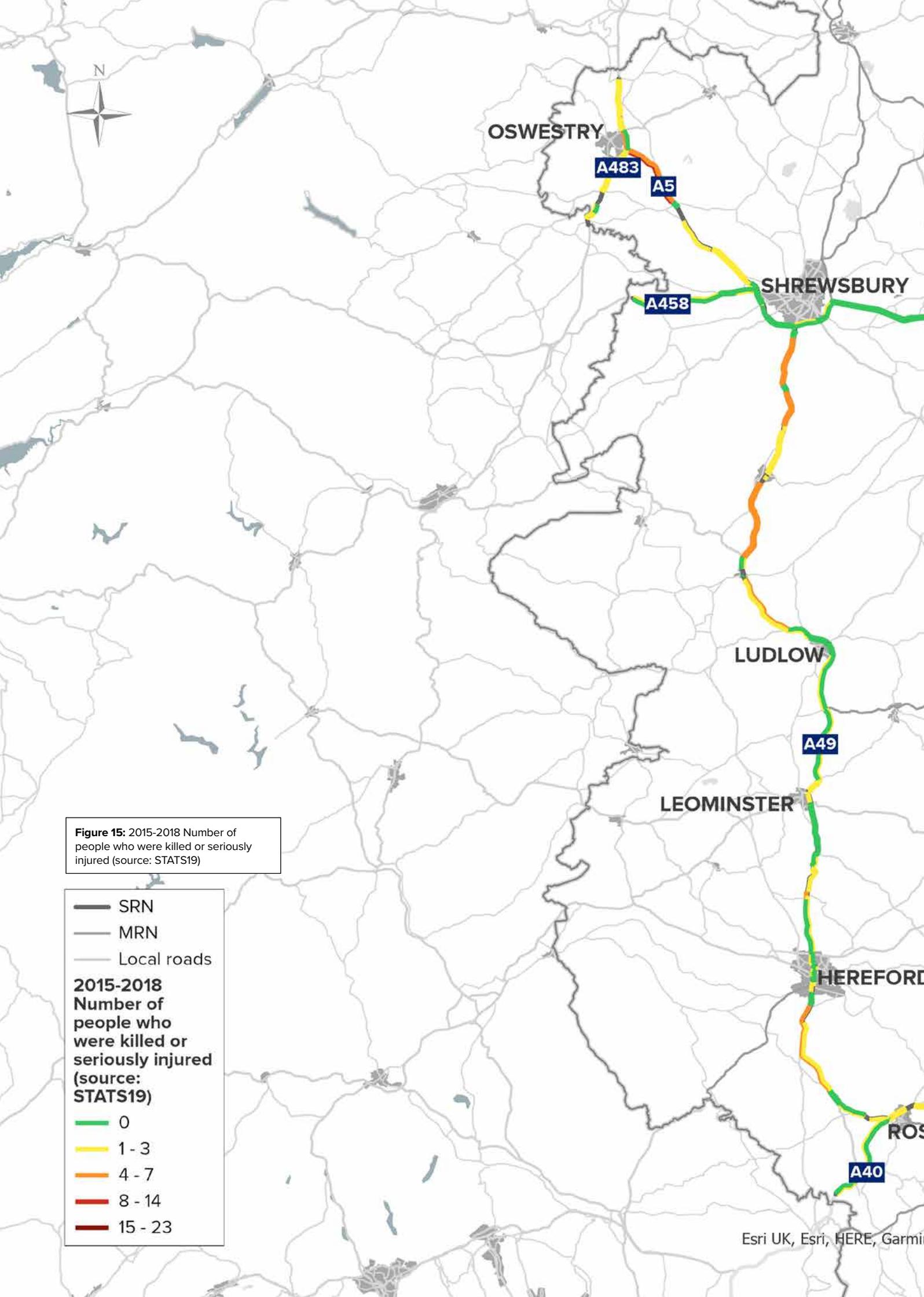
Figure 15: 2015-2018 Number of people who were killed or seriously injured (source: STATS19)

Legend:
- SRN
- MRN
- Local roads

2015-2018 Number of people who were killed or seriously injured (source: STATS19)
- 0
- 1 - 3
- 4 - 7
- 8 - 14
- 15 - 23

Esri UK, Esri, HERE, Garmin

TELFORD **M54**

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M50

TEWKESBURY

SS-ON-WYE

A40

GLOUCESTER

2. Network performance

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

The greatest average morning peak delays on the Midlands and Gloucestershire to Wales route are observed on single-carriageway sections or where there are numerous junctions as the route passes through smaller towns or communities. Sections of the route which experience greater seconds per vehicle per mile delays are:

- A49 through Hereford
- A40 around the north of Gloucester
- A5 junctions to the south of Shrewsbury
- A5 north of Oswestry

The A49 through Hereford has an average morning peak delay of greater than 25 seconds per vehicle per mile, as do parts of the A40 north of Gloucester and the A5 around Shrewsbury and north of Oswestry. The average afternoon peak delays show a very similar pattern.

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

In addition to average peak period delays, the section between M5 Junction 11 and Huntley and sections of the A49, particularly through Hereford, experience seasonal delays. There are seasonal delays in both directions on the A5 between Shrewsbury and the Welsh border, reflecting the importance of this link for tourist traffic between North Wales and the Midlands.

For the Midlands and Gloucestershire to Wales route, the A49 through Hereford and Craven Arms experiences unreliable journey times, as does the A40 north of Gloucester and the A5 around Shrewsbury and north of Oswestry.

Average peak period delay is measured in seconds per vehicle per mile and is the difference between observed 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.

The percentage of heavy goods vehicles using the route is generally low or very low with the exception of the M50 and the M54 between the M6 and Telford, where heavy goods vehicles are over 20% 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 north of Gloucester on the A40 or around Hereford on the A49. Figure 17 shows that delays are also forecast in other areas, such as around Ross-on-Wye between the A40 and M50, and the A5 between Shrewsbury and the Welsh border, particularly north of Oswestry where the average morning peak delay increases to over 60 seconds per vehicle mile by 2031.

Key challenges

- Current delays on route sections of the A40, A49 and A5, where there are single carriageways, numerous junctions and the routes pass through built-up areas

- Forecast future delays on route sections of the A40, A49 and A5, due to predicted increases in traffic flows on sections where there are current delays and additional route sections, such as the M50 and A40 around Ross-on-Wye

- Potential impact of delays and the ability to progress development plans around Shrewsbury, Hereford, Gloucester, Cheltenham and Tewkesbury
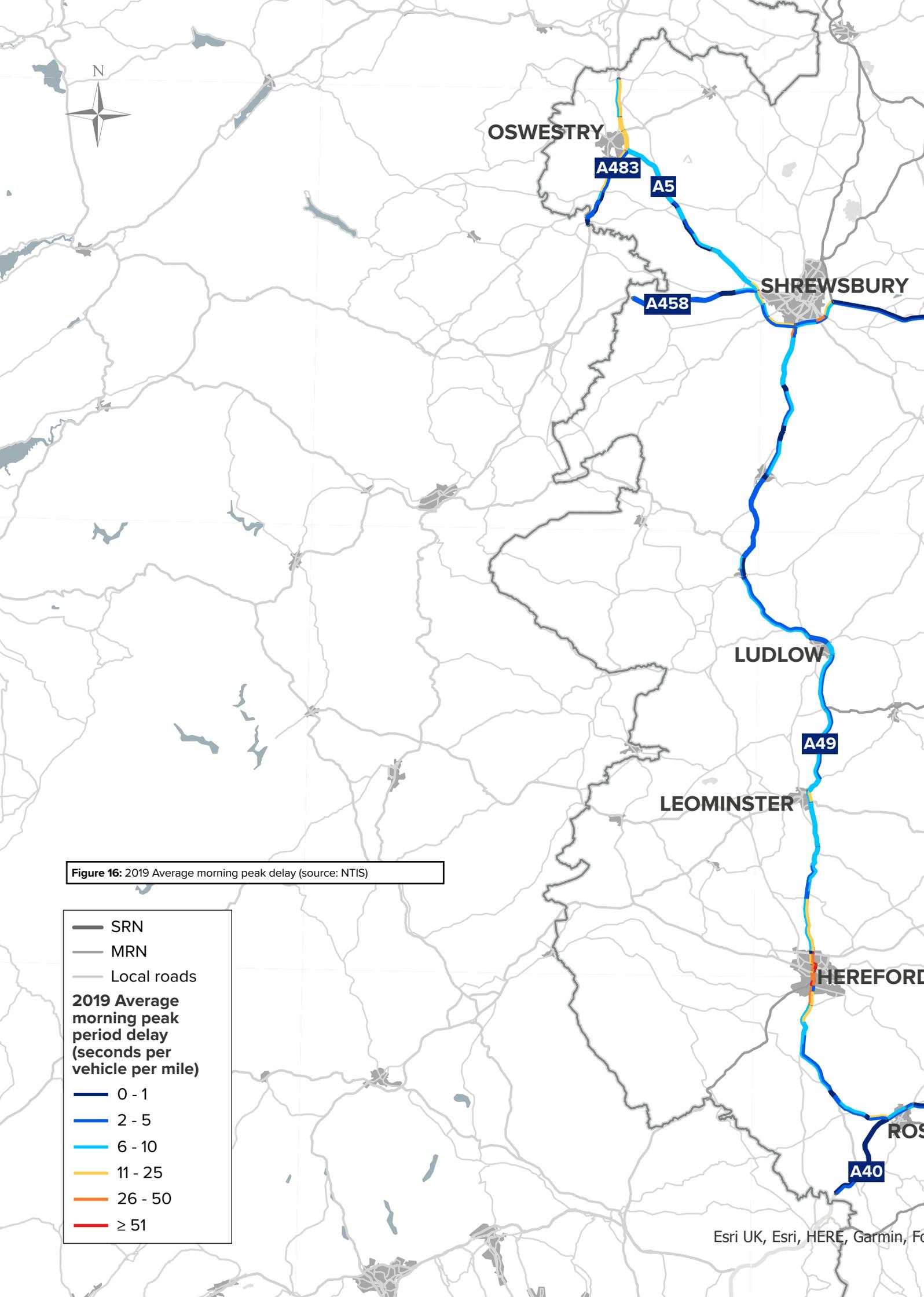
Figure 16: 2019 Average morning peak delay (source: NTIS)

Legend:
- SRN
- MRN
- Local roads

2019 Average morning peak period delay (seconds per vehicle per mile)
- 0 - 1
- 2 - 5
- 6 - 10
- 11 - 25
- 26 - 50
- ≥ 51

Map labels: OSWESTRY, SHREWSBURY, LUDLOW, LEOMINSTER, HEREFORD, ROS[S]

Road labels: A483, A5, A458, A49, A40

Esri UK, Esri, HERE, Garmin, Fo[...]

TELFORD **M54**

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BIRMINGHAM

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TEWKESBURY

SS-ON-WYE **A40**

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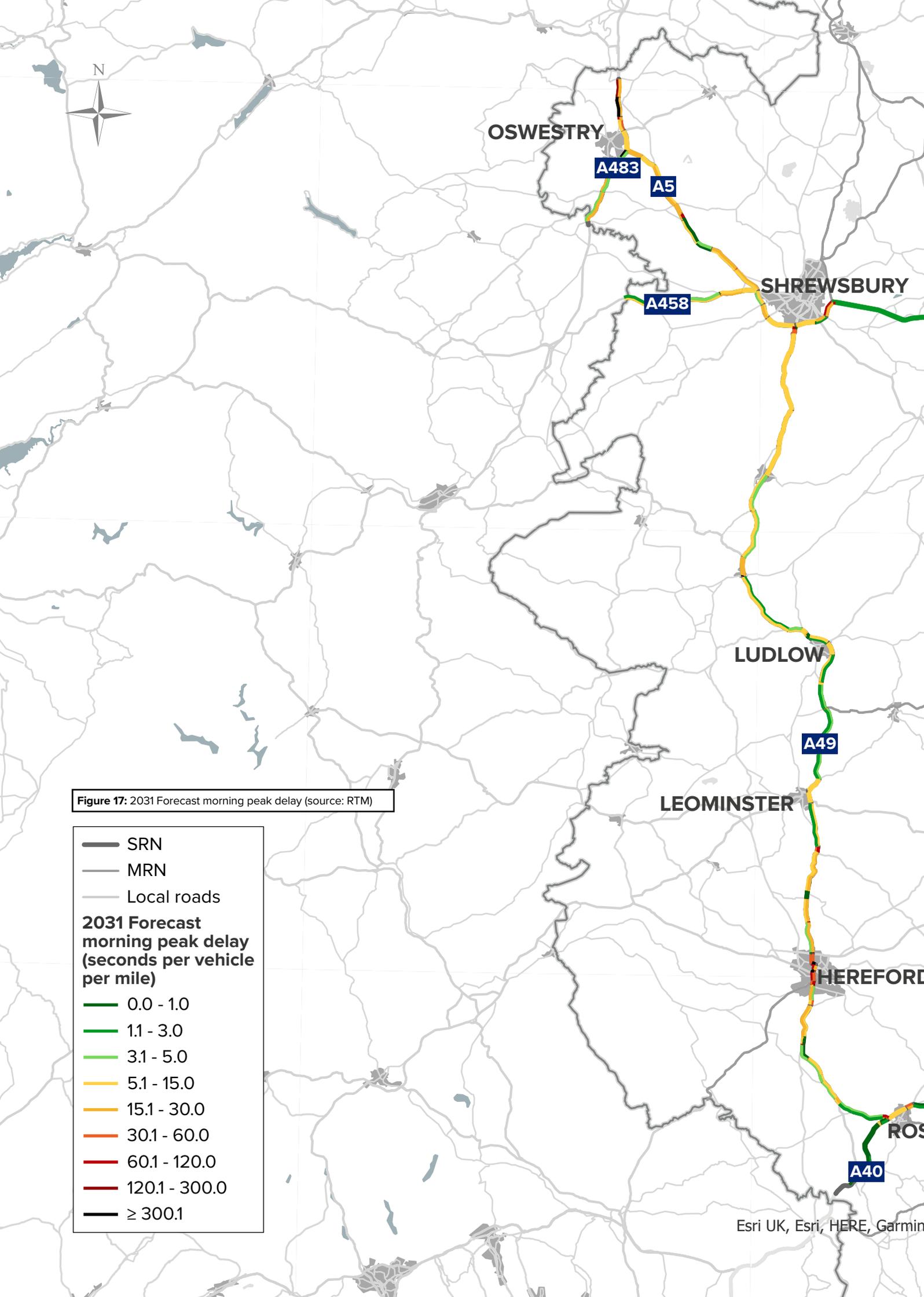
Figure 17: 2031 Forecast morning peak delay (source: RTM)

Legend:

SRN

MRN

Local roads

2031 Forecast morning peak delay (seconds per vehicle per mile)

- 0.0 - 1.0
- 1.1 - 3.0
- 3.1 - 5.0
- 5.1 - 15.0
- 15.1 - 30.0
- 30.1 - 60.0
- 60.1 - 120.0
- 120.1 - 300.0
- ≥ 300.1

Map labels: OSWESTRY, SHREWSBURY, LUDLOW, LEOMINSTER, HEREFORD, ROS[S], A483, A5, A458, A49, A40

Esri UK, Esri, HERE, Garmin

TELFORD **M54**

BIRMINGHAM

KIDDERMINSTER

M50

TEWKESBURY

SS-ON-WYE

A40

GLOUCESTER

A50

A50

A453

M6

A38

A42

M1

M6

M40

A46

M5

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, 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[37] 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*[38] 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 Midlands and Gloucestershire to Wales 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 Midlands and Gloucestershire to Wales route goes through or near to Areas of Outstanding Natural Beauty (AONBs), Special Areas of Conservation (SACs) and many parks, gardens and scheduled monuments. The three major AONBs are the Shropshire Hills (A49), the Wye Valley (A40, A49) and the Malvern Hills (M50). The three SACs are the Wye Valley (A40, A49), Downton Gorge (A49) and Long Mynd (A49). There are also two UNESCO World Heritage Sites close to the route, Ironbridge Gorge (south of Telford) and Pontcysllte Aqueduct (north of where the A5 crosses the Welsh border).

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.

37 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
38 Climate Change Committee (June 2021) *Independent Assessment of Climate Risk.*
   https://www.theccc.org.uk/publication/independent-assessment-of-uk-climate-risk/

All these sites are major leisure and tourism attractions, attracting many journeys outside traditional peak periods and generating additional seasonal delays on many route sections.

In terms of air quality, there are receptors within 100 metres of the strategic road network which may be more likely to experience adverse air quality impacts:

- A40 north-east of Gloucester and between the M50 junction and south of Ross-on-Wye

- A section of the northbound M50

- Sections of the A49, including through Hereford

- Short sections of the M54 at Telford

- A458 and parts of the A5 south and north of Oswestry

- A483 through Pant

In addition to the Air Quality Management Area (AQMA) covering the West Midlands and bordering a section of the route (M54) there are smaller AQMAs in Shrewsbury, Leominster, Hereford and Gloucester.

There are receptors within 300 metres of the SRN which may be more sensitive to high noise levels on the westbound M54 east of Telford, the A49 in the middle of Hereford and on a section of the A40 north of Gloucester. There are many Noise Important Areas along the route, including major settlements such as Shrewsbury, Hereford and Gloucester.

There are a number of route sections where interested parties report that severance (separation of people from facilities and services they use within their community), is a barrier to walking, cycling and horse riding: on the A40 north of Gloucester, at the junctions on the A5 around Shrewsbury, on the cross-border routes of the A483 and A458 and along the A49 between Ross-on-Wye and Shrewsbury, particularly through the many communities along this route.

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

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.

Key challenges

- A desire to minimise greenhouse gas emissions

- A desire to build resilience to future climate change

- Safeguarding AONBs and other locations with environmental designations or of cultural heritage importance

- Air quality and noise impacts in settlements served by the route

- Severance in communities along the route

4. Growing the economy

In order to understand the economic and housing growth aspirations of the area along the route we have considered key growth locations, such as those held in local plans and Freeports.

The main centres of employment along the route are Gloucester, Cheltenham, Hereford, Shrewsbury and Telford. There are smaller but significant centres of employment in smaller market towns such as Leominster and Ludlow. Economic Opportunity Areas (EOAs) have been established by the UK Government to spread economic opportunity and reverse geographical inequalities in the nation. The one EOA served by the route is Skylon Park in Hereford. The major Local Plan sites in the Local Authority areas covered by this route are north of Gloucester and Shrewsbury and south of Tewkesbury, where the M50 joins the M5.

Although most of the route has low levels of deprivation, some areas are in the highest 10% on the Index of Multiple Deprivation[39], notably south Telford, Leominster, and the Forest of Dean. Furthermore, most of this route falls into category 2 in terms of levelling up, with the Forest of Dean and northwards of the M40 falling into category 1[40].

Feedback from interested parties suggested that some areas served by the route would benefit from better road and rail connections to key employment and service destinations such as the Gloucester and Bristol areas and the West Midlands, to increase the economic potential of these areas and provide access to wider economic opportunities.

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

The route also includes cross-border strategic road network links between the Midlands and beyond, and Mid, North and South Wales. To the north of the route these include the M54 and A5 between Wolverhampton and Chirk and the A458 and A483 spurs from Shrewsbury and Oswestry respectively. To the south the links include the M50/A40 to Ross-on-Wye and Monmouth. These links, together with the A49, are vital to the economies of both Wales and the Midlands, and beyond, as well as supporting local traffic and employment links across the Marches and providing links to important tourist destinations. They are also important freight routes linking, for example, the North-West of England to Mid and South Wales.

Improving transport connectivity between the four nations of the UK is a government priority, and the *Union Connectivity Review*[41] identifies the Welsh Marches as one of the corridors which should be included within UKNET–the proposed strategic transport network for the whole of the UK, reflecting the economic importance of cross-border routes and their connections.

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

40 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

41 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

Despite their economic importance, cross-border routes and east-west connections across the area by road can be slow on roads such as the A456 through Kidderminster, where local congestion and delay problems also affect these long-distance journeys.

Many settlements along the route, such as Leominster and Ludlow, do not have direct rail links to the West Midlands, so journeys are even slower. Some parts of the route served by the M50 and A40, such as Ross-on-Wye and the Forest of Dean, do not have any rail stations or services at all.

Key challenges

- Commercial development and housing growth around Shrewsbury, Hereford, Gloucester and Tewkesbury

- Connections between rural areas served by the route, particularly those with high levels of deprivation, and the West Midlands, Gloucester and Bristol areas, to increase the economic potential of these areas and provide access to wider economic opportunities

- Cross-border connections between the Midlands and Wales, to support economic opportunities in both areas

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 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 900 lane-kilometres of road surfacing.

The surface condition across the route is considered to be sound, with 92% of pavement asset not requiring investigation for possible maintenance.

Bridges and structures

There are 340 structures across the route, including bridges and large culverts. According to an analysis of current data, 92% 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 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.

We have identified significant structures renewals for RIS3, and these schemes affect one structure in this route.
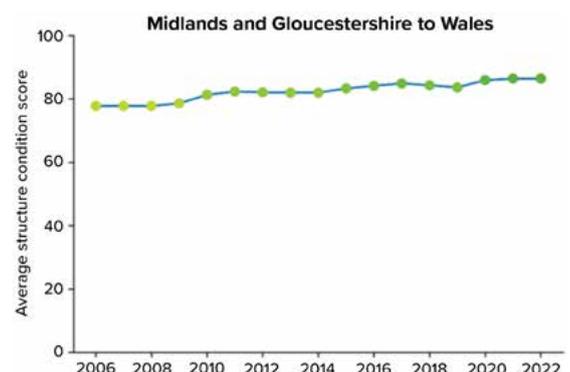
Figure 18: Average condition scores of structures, since 2006

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

Currently there is generally a lack of information for users of this route and adjoining roads. This is partly due to a high proportion of the route being rural A-roads, with only 25% of the route being motorway. The A5, A483, A458, A49 and A40 all have negligible roadside user information.

There is the potential to:

- better integrate the operation of roadside traffic information and management between the SRN and local road networks, to enhance the efficiency of the road networks as a whole

- provide more pre-journey information, integrated across all modes

The inclusion of additional facilities to support alternative fuel vehicles is part of the future planning of the SRN.

We will support improved communications and facilities for all

There is better coverage of charging facilities for electric cars on the M5, to the east of this route, but away from that motorway the facilities are more dispersed, particularly on the A40, A49 and A5 away from the main population centres. There is also a lack of charging points on sections of the SRN where there are no motorway service areas, such as the M50. Charging points are also not available for towing cars, motor homes and heavy goods vehicles on all parts of the route.

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.

The Government's 2022 electric vehicle infrastructure strategy[42] 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 £950m *rapid charging fund*[43], aimed at increasing provision of electric vehicle charging.

Key challenges

- Traffic information for road users

- Refuelling facilities for alternative fuel vehicles

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42 Department for Transport *UK electric vehicle infrastructure strategy website:*
https://www.gov.uk/government/publications/uk-electric-vehicle-infrastructure-strategy
43 Office for Zero Emission Vehicles *Rapid charging fund website:* https://www.gov.uk/guidance/rapid-charging-fund
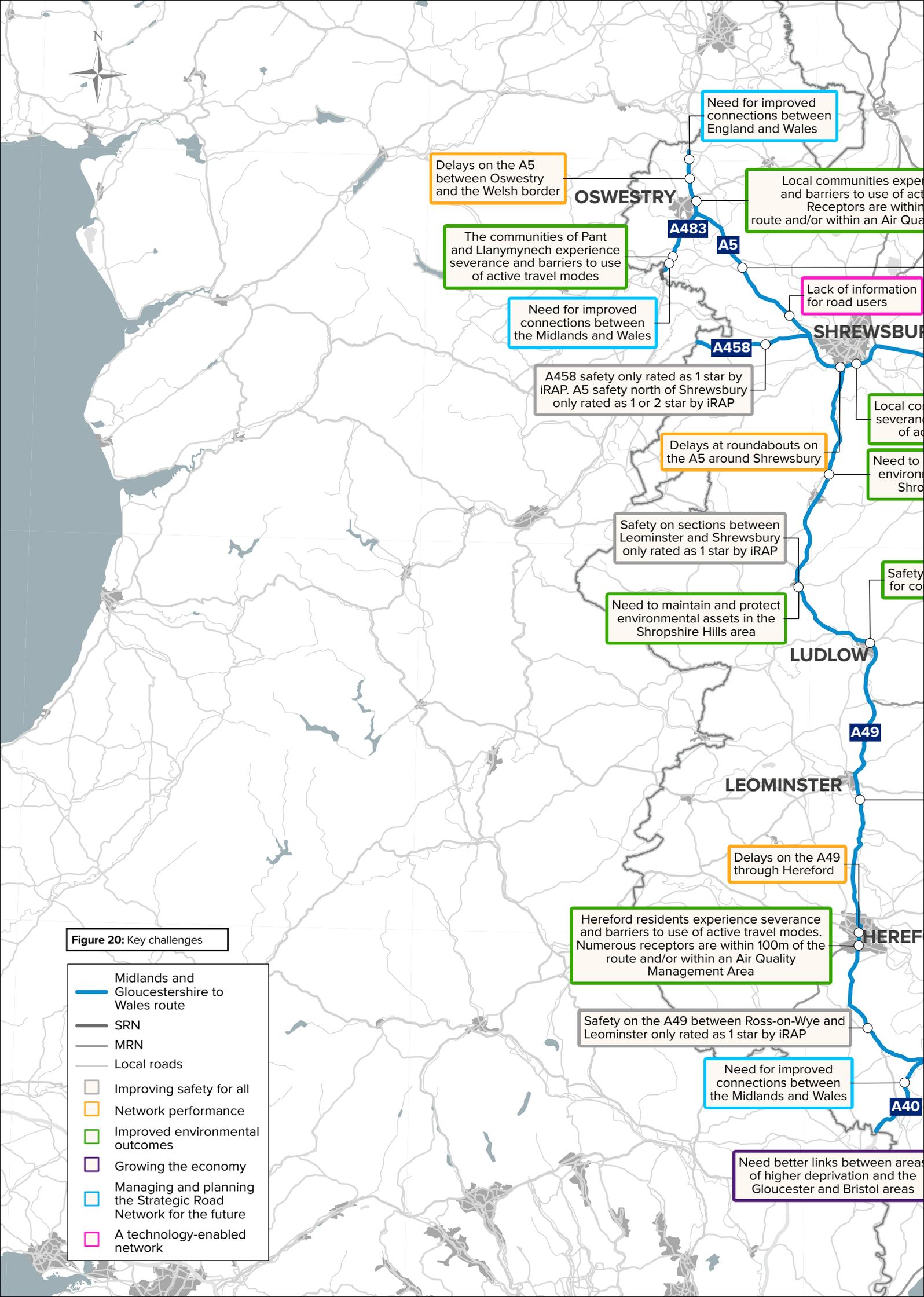
Figure 20: Key challenges

Need for improved connections between England and Wales

Delays on the A5 between Oswestry and the Welsh border

OSWESTRY

A483

A5

Local communities exper
and barriers to use of act
Receptors are within
route and/or within an Air Qua

The communities of Pant and Llanymynech experience severance and barriers to use of active travel modes

Lack of information
for road users

Need for improved connections between the Midlands and Wales

A458

SHREWSBUR

A458 safety only rated as 1 star by iRAP. A5 safety north of Shrewsbury only rated as 1 or 2 star by iRAP

Local co
severanc
of ac

Delays at roundabouts on the A5 around Shrewsbury

Need to
environm
Shro

Safety on sections between Leominster and Shrewsbury only rated as 1 star by iRAP

Safety
for co

Need to maintain and protect environmental assets in the Shropshire Hills area

LUDLOW

A49

LEOMINSTER

Delays on the A49 through Hereford

Hereford residents experience severance and barriers to use of active travel modes. Numerous receptors are within 100m of the route and/or within an Air Quality Management Area

HEREF

Safety on the A49 between Ross-on-Wye and Leominster only rated as 1 star by iRAP

Need for improved connections between the Midlands and Wales

A40

Need better links between areas
of higher deprivation and the
Gloucester and Bristol areas

Legend:

— Midlands and Gloucestershire to Wales route
— SRN
— MRN
— Local roads
☐ Improving safety for all
☐ Network performance
☐ Improved environmental outcomes
☐ Growing the economy
☐ Managing and planning the Strategic Road Network for the future
☐ A technology-enabled network

A50

A38

M1

A52

A453

A46

M6

A42

A50

A38

A458 safety only rated as 1 star by iRAP. A5 safety north of Shrewsbury only rated as 1 or 2 star by iRAP

Receptors which may experience adverse air quality and/or noise impacts on the M54 through Telford

M1

TELFORD

M54

mmunities experience
ce and barriers to use
tive travel modes

maintain and protect
mental assets in the
pshire Hills area

BIRMINGHAM

and severance concerns
mmunities along the A49

M6

KIDDERMINSTER

Need better links between areas of higher deprivation and the Midlands

M40

Lack of information for road users

M5

A46

Need to maintain and protect environmental assets in the Malvern Hills and Wye Valley between areas

M50

TEWKESBURY

Numerous receptors are within 100m of the route and/or within an Air Quality Management Area. Local communities experience severance and barriers to use of active travel modes

ROSS-ON-WYE

A40

Delays on the A40 to the north of Gloucester

GLOUCESTER

Safety on the A40 north and west of Gloucester only rated 1 or 2 star by iRAP

Lack of information for road users

Need to maintain and protect environmental assets in the Malvern Hills and Wye Valley between Hills and area

**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 Midlands and Gloucestershire to Wales route, and help the region achieve its economic and housing growth ambitions. Based on our engagement and data analysis, we have defined seven 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 seven 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 on the A40, A49, A5, A458 and A483 to benefit all road users and local communities
	B	**Improve cross-border connectivity between the Midlands and Wales:** improve the gateways of the A5, A458, A483 and A40 between Wales and the Midlands, supporting cross- border connectivity, freight strategy, economic links and the tourism industry of the Marches and Mid Wales
	C	**Support east-west connectivity to economic opportunities and services:** enable and support effective connections between communities with high deprivation and key employment opportunities and services in the West Midlands and the areas of Gloucester and Bristol
	D	**Improve north-south connections through the Marches:** provide efficient, safe and reliable north-south connectivity for people and goods between and within settlements on the A49 corridor, particularly the economic centre of Hereford
	E	**Enable integration with active travel modes:** enable effective local connectivity through better integration and coordination with active travel modes at locations on or near to the A5, A458, A483, the A49 and the A40 north of Gloucester, to benefit active travel users and local communities
	F	**Be a better neighbour:** be a better neighbour by safeguarding the environment and reducing air quality and noise impacts on settlements with Air Quality Management Areas (AQMAs) and Noise Important Areas (NIAs), and along the A49, A483 and A5
	G	**Promote improved communications for all users:** promote improved communications 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
✓					
	✓		✓		
			✓		
✓	✓	✓	✓		
	✓	✓			
		✓			
				✓	✓

OSWESTRY

A483

A5

A458

SHREWSBURY

LUDLOW

A49

LEOMINSTER

HEREFORD

ROS

A40

Figure 21: Route objectives

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TELFORD M54

BIRMINGHAM

KIDDERMINSTER

TEWKESBURY

GLOUCESTER A40

SS-ON-WYE

M50

Government Licence v3.0.

A50 A453 A50 A42 M1 M6 A38 M6 M5

Legend
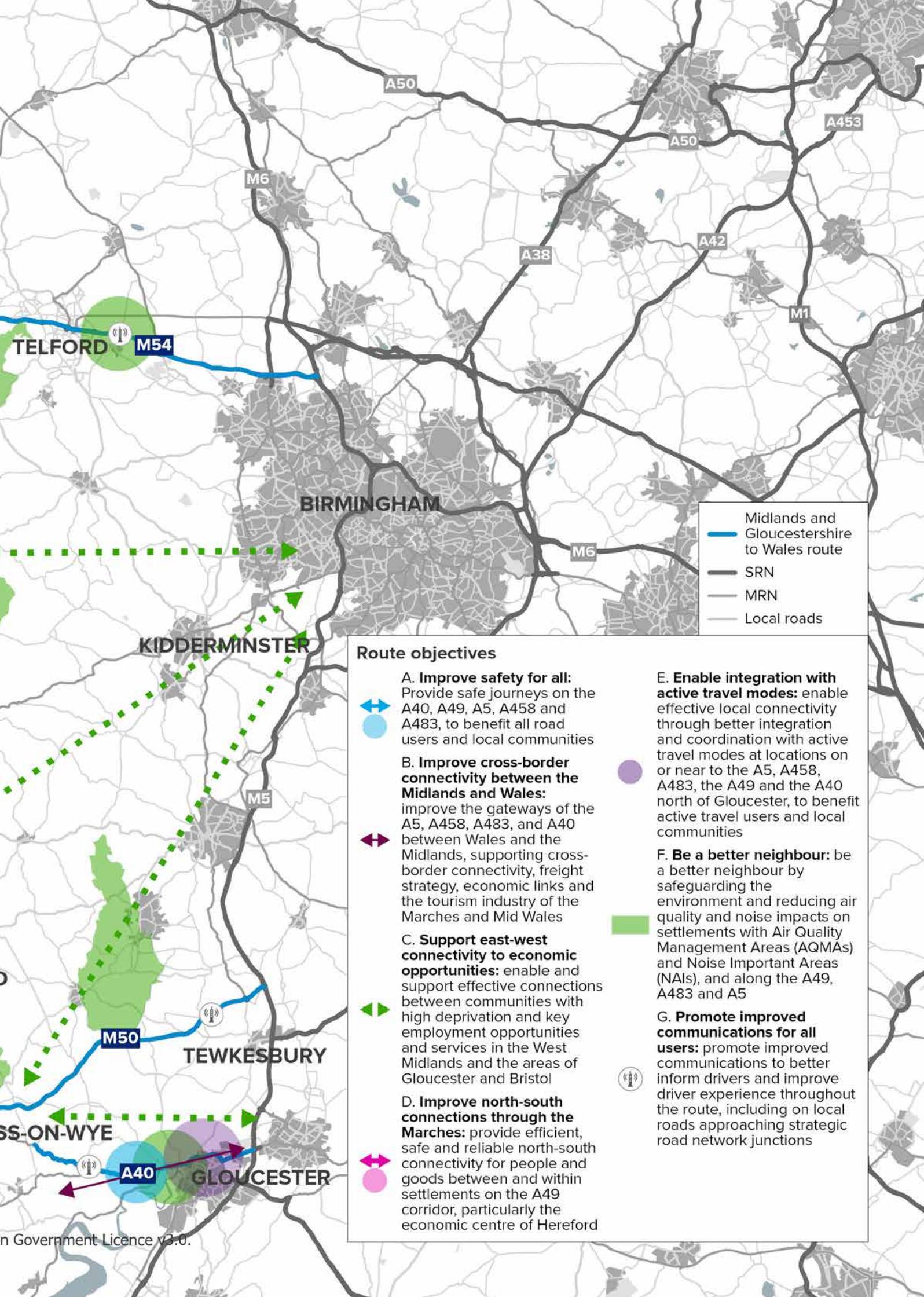
	Midlands and Gloucestershire to Wales route
	SRN
	MRN
	Local roads

Route objectives

A. **Improve safety for all:** Provide safe journeys on the A40, A49, A5, A458 and A483, to benefit all road users and local communities

B. **Improve cross-border connectivity between the Midlands and Wales:** improve the gateways of the A5, A458, A483, and A40 between Wales and the Midlands, supporting cross-border connectivity, freight strategy, economic links and the tourism industry of the Marches and Mid Wales

C. **Support east-west connectivity to economic opportunities:** enable and support effective connections between communities with high deprivation and key employment opportunities and services in the West Midlands and the areas of Gloucester and Bristol

D. **Improve north-south connections through the Marches:** provide efficient, safe and reliable north-south connectivity for people and goods between and within settlements on the A49 corridor, particularly the economic centre of Hereford

E. **Enable integration with active travel modes:** enable effective local connectivity through better integration and coordination with active travel modes at locations on or near to the A5, A458, A483, the A49 and the A40 north of Gloucester, to benefit active travel users and local communities

F. **Be a better neighbour:** be a better neighbour by safeguarding the environment and reducing air quality and noise impacts on settlements with Air Quality Management Areas (AQMAs) and Noise Important Areas (NAIs), and along the A49, A483 and A5

G. **Promote improved communications for all users:** promote improved communications to better inform drivers and improve driver experience throughout the route, including on local roads approaching strategic road network junctions

A. Improve safety for all

Objective

Provide safe journeys on the A40, A49, A5, A458 and A483 to benefit all road users and local communities

Context

There are sections of the Midlands and Gloucestershire to Wales route, particularly where there are single-carriageway roads, numerous junctions or the route bisects or adjoins communities, which are only given safety ratings of 1 or 2 by the International Road Assessment Programme (iRAP):

- A49 between Ross-on-Wye and Shrewsbury

- A40 north and west of Gloucester

- A5 from south of Shrewsbury to the Welsh border

- A458 between the A5 and the Welsh border

- A483 between Oswestry and Pant

Incidents can cause diversions onto local roads and have additional safety and environmental impacts on communities located away from the strategic road network. Risks associated with safety also reduce the attractiveness and demand for active travel modes, particularly walking and cycling.

Our network considerations

Most of the A49 between Ross-on-Wye and Shrewsbury is given an iRAP safety rating of only 1 or 2. This classification is supported by STATS19 data which identify that there are concentrations of collisions and sections of the route where people were killed or seriously injured, particularly between Ross-on-Wye and Hereford and north of Ludlow.

Sections of the A40 north and west of Gloucester are also given a low iRAP safety rating. To the north of the route, the A483 and A458 between the A5 and the Welsh border are given a low iRAP safety rating, as is the majority of the A5 between Shrewsbury and the Welsh border. The STATS19 data also show that the A5 south of Oswestry is a section of the route where people were killed or seriously injured.

Outcomes

- Fewer collisions on sections of the route currently given low safety ratings, particularly the A49, A483, A458 and A5

- Reduction in the number of route sections given a low safety rating, as classified by iRAP

- Safer crossing and roadside facilities across and along the strategic road network for walkers, cyclists and horse riders in communities along the route

DfT's Strategic objectives

Improving safety for all

Timeframe based on the issues and constraints identified

Now — **Many sections of the route already have a low safety rating and collisions**

Future Road Periods — **Continuation of the issues identified in the current road period (2020-2025)**
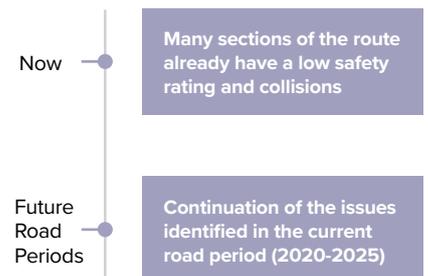
B. Improve cross-border connectivity between the Midlands and Wales

Objective

Improve the gateways of the A5, A458, A483 and A40 between Wales and the Midlands, supporting cross-border connectivity, freight strategy, economic links and the tourism industry of the Marches and Mid Wales

Context

This objective covers cross-border strategic road network links between the Midlands and Mid, North and South Wales. To the north of the route these links include the M54 and A5 between Wolverhampton and Chirk and the A458 and A483 spurs from Shrewsbury and Oswestry respectively. To the south the links include the M50 and A40 to Ross-on-Wye and Monmouth. These links are vital to the economies of both Wales and the Midlands, and beyond, as well as supporting local traffic and employment links across the Marches and providing access to important tourist destinations. They are also important freight routes, linking the North-West of England and Midlands to Mid and South Wales and Holyhead port, for ferries to Ireland.

Improving transport connectivity between the four nations of the UK is a government priority, and the 2021 *Union Connectivity Review*[44] proposes the establishment of UKNET, the strategic transport network for the whole of the UK. To ensure UKNET can meet its objectives, the Review states that more remote areas of the country, including Mid and West Wales, need to access strategic connections to support levelling up, improve social cohesion and facilitate economic development, particularly tourism which is vital to the economic success of the area served by this route. These recommendations support feedback from interested parties on the need to develop a cross-government multimodal strategy which considers all routes between England and Wales, for both passenger and freight traffic, including those within the Midlands and Gloucestershire to Wales route. Interested parties also identified the need to improve cross-border active travel measures, complementing the *Wales Transport Strategy*[45] published by the Welsh Government in March 2021, which focuses on modal shift with priorities being sustainable forms of transport including walking, cycling and public transport first, followed by electric vehicles and then private car.

Our network considerations

Interested parties have noted that network performance issues on connections between Wales and the Midlands and north to south, make it difficult to attract investment. There are delays and unreliability on the A40 around the north of Gloucester, A5 junctions to the south of Shrewsbury and A5 north of Oswestry. There are seasonal delays in both directions on the A5 between Shrewsbury and the Welsh border, reflecting the importance of this link for tourist traffic between North Wales and the Midlands. Route sections on the A40, A5, A458 and A483 have low safety ratings from both iRAP and the Road Safety Foundation Crash Risk Mapping, and interested parties report that communities experience severance on the A40 north of Gloucester, at the junctions on the A5 around Shrewsbury, and on the cross-border routes of the A483 and A458. There is a lack of good traffic information and facilities for alternative fuel vehicles on cross-border routes.

Outcomes

- Faster and more reliable connections between the Midlands and Wales

- Improvements to safety, active travel facilities and communications on cross-border routes (see also Objectives A and F)

DfT's Strategic objectives

Network performance

Growing the economy

Timeframe based on the issues and constraints identified

Now — **Delays and interested parties' concerns about safety and lack of active travel modes facilities**

Future Road Periods — **Anticipated increase in delays and incidents due to forecast cross-border traffic growth**
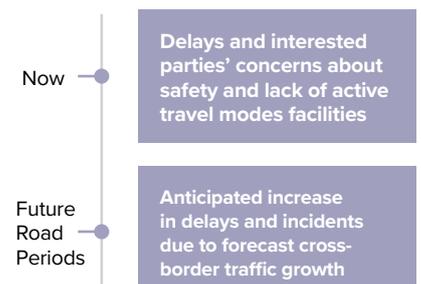
44 Hendy, P. (November 2021) *Union Connectivity Review: Final Report.*
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1036027/union-connectivity-review-final-report.pdf
45 Welsh Government (March 2021) *Llwybr Newydd: the Wales Transport Strategy 2021.*
https://gov.wales/sites/default/files/publications/2021-03/llwybr-newydd-wales-transport-strategy-2021-full-strategy_0.pdf

C. Support east-west connectivity to economic opportunities and services

Objective

Enable and support effective connections between communities with high deprivation and key employment opportunities and services in the West Midlands and the areas of Gloucester and Bristol

Context

This objective covers east-west road and rail connectivity across the region served by the Midlands and Gloucestershire to Wales route. Although most of this route has low levels of deprivation, some areas are in the highest 10% on the Index of Multiple Deprivation[46], notably south of Telford, Leominster and the Forest of Dean. Furthermore, although most of the route falls into category 2 in terms of levelling up, the Forest of Dean and northwards of the A40 falls into category 1, as one of the areas in greatest need of investment (Fig 22).

The main centres of employment along the route are Gloucester, Hereford, Shrewsbury and Telford, with smaller but significant centres of employment in smaller market towns such as Leominster and Ludlow. However, with the exception of Skylon Park in Hereford, there are no Economic Opportunity Areas served by the route, and the only major local plan sites are north of Gloucester and Shrewsbury and Tewkesbury south of where the M50 joins the M5.

So, for areas in need of economic investment served by the route, good road and rail connections with key employment and service destinations such as the Gloucester and Bristol areas and the West Midlands are required, both to encourage inward investment and to provide economic opportunities beyond those available within local areas.

The need for better east-west connectivity is supported both by Midlands Connect's *Strategic Transport Plan*[47] (outlined in section 4 of this report) and the Union Connectivity Review, which recognise that access to strategic connections is vital to the economic success of an area.

Our network considerations

East-west connections by road across the region can be slow and affected by delays and unreliability. On the strategic road network there are delays on the A40 between M5 Junction 11 and Huntley at all times of the day, with additional seasonal delays, due to high volumes of tourist traffic. Longer-distance cross-regional journeys can also be affected by local congestion and delay, such as the A456 through Kidderminster, which increase journey times between the more rural areas served by the route and the West Midlands.

Many settlements along the route, such as Leominster and Ludlow, do not have direct rail links to the West Midlands, and are served by relatively infrequent and slow rail services. Some parts of the route, particularly areas served by the A40 and M50, such as Ross-on-Wye and the Forest of Dean, do not have any rail stations or services at all. Network Rail is working with Transport for Wales and the Welsh Government on the studies of north-south links through the Marches, in recognition of these issues.

Outcomes

- Faster, more reliable and direct connections between rural areas served by the A49 and A40 and the West Midlands

- Faster and more reliable journeys between rural areas served by the A40 and A49 and the areas of Gloucester and Bristol

DfT's Strategic objectives

Growing the economy
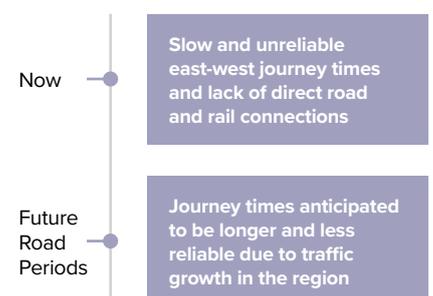
Timeframe based on the issues and constraints identified

Now — Slow and unreliable east-west journey times and lack of direct road and rail connections

Future Road Periods — Journey times anticipated to be longer and less reliable due to traffic growth in the region

46 Ministry of Housing, Communities & Local Government (September 2019) *English indices of deprivation 2019.* https://www.gov.uk/government/statistics/english-indices-of-deprivation-2019
47 Midlands Connect (April 2022) *Fairer, greener, stronger: a Strategic Transport Plan for the Midlands.* https://www.midlandsconnect.uk/strategy
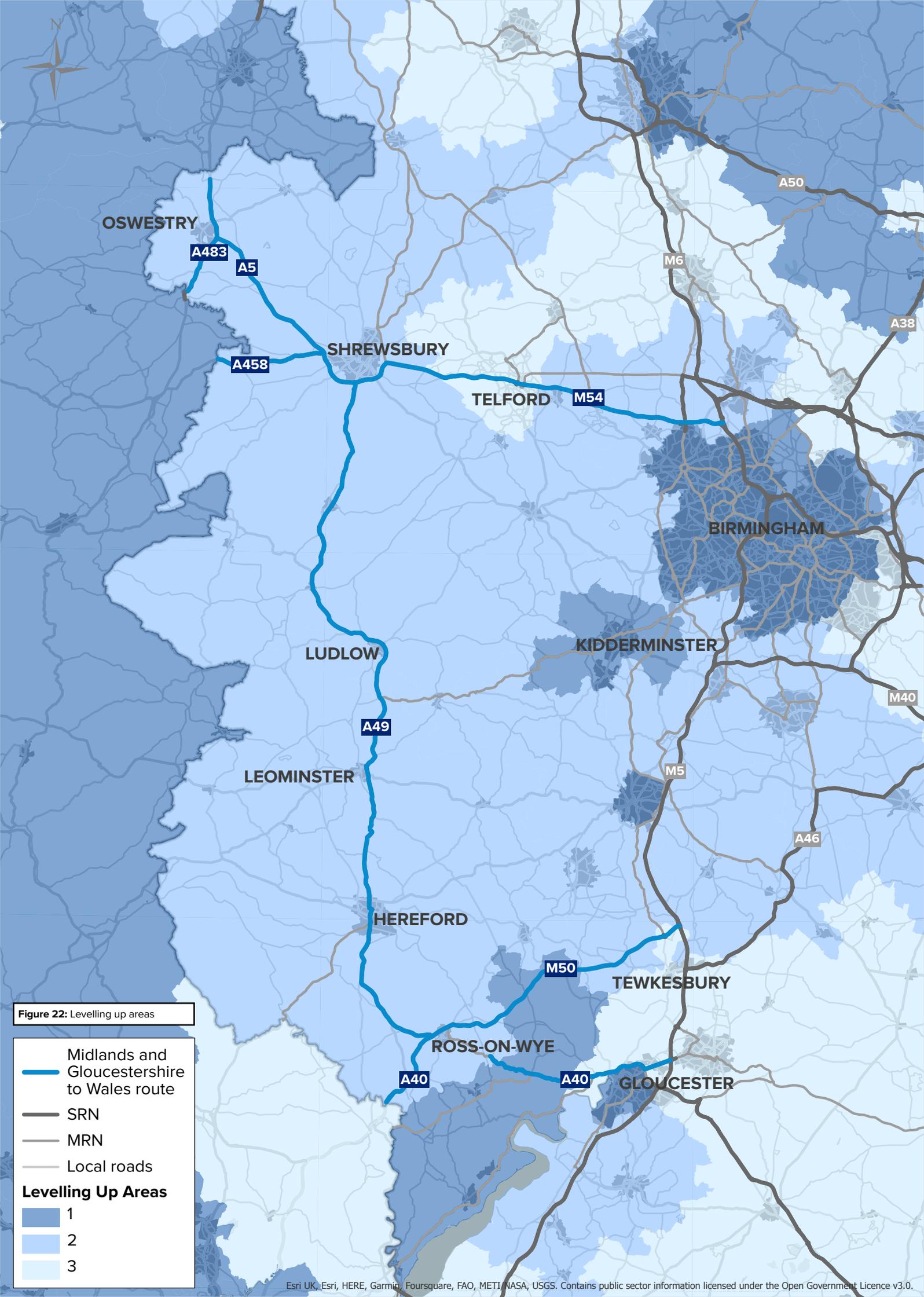
Figure 22: Levelling up areas

Legend:

Midlands and Gloucestershire to Wales route
SRN
MRN
Local roads

Levelling Up Areas
1
2
3

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D. Improve north-south connections through the Marches

Provide efficient, safe and reliable north-south connectivity for people and goods between and within settlements on the A49 corridor, particularly the economic centre of Hereford

Context

The A49 between Ross-on-Wye and Shrewsbury provides a strategic north-south link through the Marches with spurs to Mid and North Wales. The *Union Connectivity Review*[48] identifies the Welsh Marches as one of the north-south corridors which should be included within UKNET (see Chapter 4), reflecting its importance in providing links to and between east-west cross-border routes.

The A49 also links several important settlements along its route, such as Hereford, Leominster, Ludlow and Craven Arms, and is essential for local economic performance, including access to tourism and leisure destinations. Many residents and businesses from both sides of the border depend on the A49 for local, regional and national journeys.

The A49 runs through the centre of Hereford, which is the largest settlement along the route, providing a focus for essential services such as health, higher education and the largest concentration of employment and retail opportunities.

Our network considerations

The section of A49 through Hereford experiences low journey time reliability and high delays during peak periods. The road also forms a significant barrier to both west to east and north to south journeys by active travel modes, acting as a deterrent to their use through the city. Much of the A49 corridor through Hereford is also subject to an Air Quality Management Area designation which has been in place since 2001.

Although unreliability is experienced on the rest of the route, the key issues are safety and inadequate provision of active travel facilities. The A49 corridor between Leominster and Ross-on-Wye has a safety rating of 1 from the International Road Assessment Programme, and the A49 corridor from Shrewsbury to Ross-on-Wye has a medium safety rating from the Road Safety Foundation Crash Risk Mapping. There are other locations where there are local access concerns and the A49 forms a barrier to accessing local services such as schools and shops.

Interested parties have raised the need for collaborative working between National Highways and the local authority to consider potential improvements for the A49 corridor through Hereford, and a safety review of the route, which supports this strategic route objective.

Outcomes

- Reduction in delays at locations along the route, particularly Hereford

- Improved safety for the route, with particular emphasis on the section between Ross-on-Wye and Leominster

- Reduction of severance and improvement of active travel facilities for communities along the route

DfT's Strategic objectives

Improving safety for all

Network performance

Growing the economy

Improved environmental outcomes

Timeframe based on the issues and constraints identified

Now — Existing delays, unreliability of journey times and safety for north-south journeys on the A49

Future Road Periods — Forecast additional delays due to traffic growth in the region
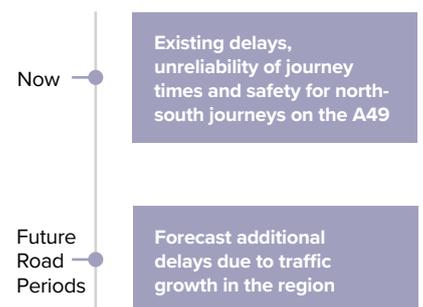
48 Hendy, P. (November 2021) *Union Connectivity Review: Final Report.* https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1036027/union-connectivity-review-final-report.pdf

E. Enable integration with active travel modes

Objective

Enable effective local connectivity through better integration and coordination with active travel modes at locations on or near to the A5, A458, A483, the A49 and the A40 north of Gloucester, to benefit active travel users and local communities

Context

The need for better integration and coordination with sustainable transport modes is driven by a number of factors. For longer distance passenger and freight journeys there are opportunities for improved intermodal facilities, such as rail park-and-ride sites, and road and rail freight facilities. The potential for further intermodal opportunities will be considered through Objectives B and C, covering both cross-border and cross-regional connectivity.

For more local journeys there are many sections of the Midlands and Gloucestershire to Wales route where there is high demand for more active travel modes, particularly walking and cycling, from both local communities and people travelling from outside the area for leisure activities.

In some local communities use of active travel modes can replace car use for short journeys. In Hereford the County Council is currently exploring and developing an active travel management plan for the city to encourage use of alternative transport options rather than driving. In some cases, the strategic road network has the potential to provide a barrier to accessing local services such as schools and shops, unless facilities such as suitable pedestrian crossings are available.

Our network considerations

Interested parties report that there are a number of route sections where the walking, cycling and horse riding facilities, together with traffic flows and speeds, are a barrier to travel by sustainable modes. This has been highlighted as a problem through many communities on the route, especially on the A40 north of Gloucester, at the junctions on the A5 around Shrewsbury, on the cross-border routes of the A483 and A458 (also see Objective B) and along the A49 between Ross-on-Wye and Shrewsbury.

Outcomes

- Increase in the number and proportion of journeys made by sustainable travel modes

- Reduction in severance for local communities

DfT's Strategic objectives

Network performance

Improved environmental outcomes

Timeframe based on the issues and constraints identified

Now — Demand for facilities to support sustainable travel modes

Future Road Periods — Increasing demand for sustainable travel modes

F. Be a better neighbour

Objective

Be a better neighbour by safeguarding the environment and reducing air quality and noise impacts on settlements with Air Quality Management Areas (AQMAs) and Noise Important Areas (NIAs), and along the A49, A483 and A5

Context

The route either borders or goes through three major Areas of Outstanding Natural Beauty: the Shropshire Hills (A49), the Wye Valley (A40, A49) and the Malvern Hills (M50). The route also goes through or near to three Special Areas of Conservation: the Wye Valley (A40, A49), Downton Gorge (A49) and Long Mynd (A49). There are also two UNESCO World Heritage Sites close to the route - Ironbridge Gorge (south of Telford) and Pontcysllte Aqueduct (north of where the A5 crosses into Wales).

Many parts of the route also run close to or through communities or residential areas, particularly the A49, where traffic can have an adverse impact on health and quality of life, through noise, air quality and severance impacts.

Our network considerations

Where the route is single carriageway and in close proximity to communities there are receptors close to the route which may be more sensitive to adverse air quality impacts:

- A40 north-east of Gloucester and between the M50 junction and south of Ross-on-Wye

- A section of the northbound M50

- Sections of the A49, including through Hereford

- Short sections of the M54 at Telford

- A458 and parts of the A5 south and north of Oswestry

- A483 through Pant

In addition to the Air Quality Management Area (AQMA) covering the West Midlands and bordering a section of the route (M54) there are smaller AQMAs in Shrewsbury, Leominster, Hereford and Gloucester.

There are receptors within 300 metres of the carriageway which may be more sensitive to high noise levels on the westbound M54 east of Telford, the A49 in the middle of Hereford and on a section of the A40 north of Gloucester. There are many Noise Important Areas along the route, including major settlements such as Shrewsbury, Hereford and Gloucester.

Outcomes

- Protection for areas of environmental significance along the route

- Improvement in air quality and noise levels for communities along the route

DfT's Strategic objectives

Improved environmental outcomes

Timeframe based on the issues and constraints identified

Now — **Communities along the route are currently impacted by air quality and noise levels**

Future Road Periods — **Continuation of the issues identified in the current road period (2020-2025)**
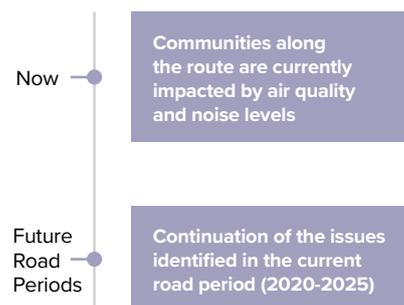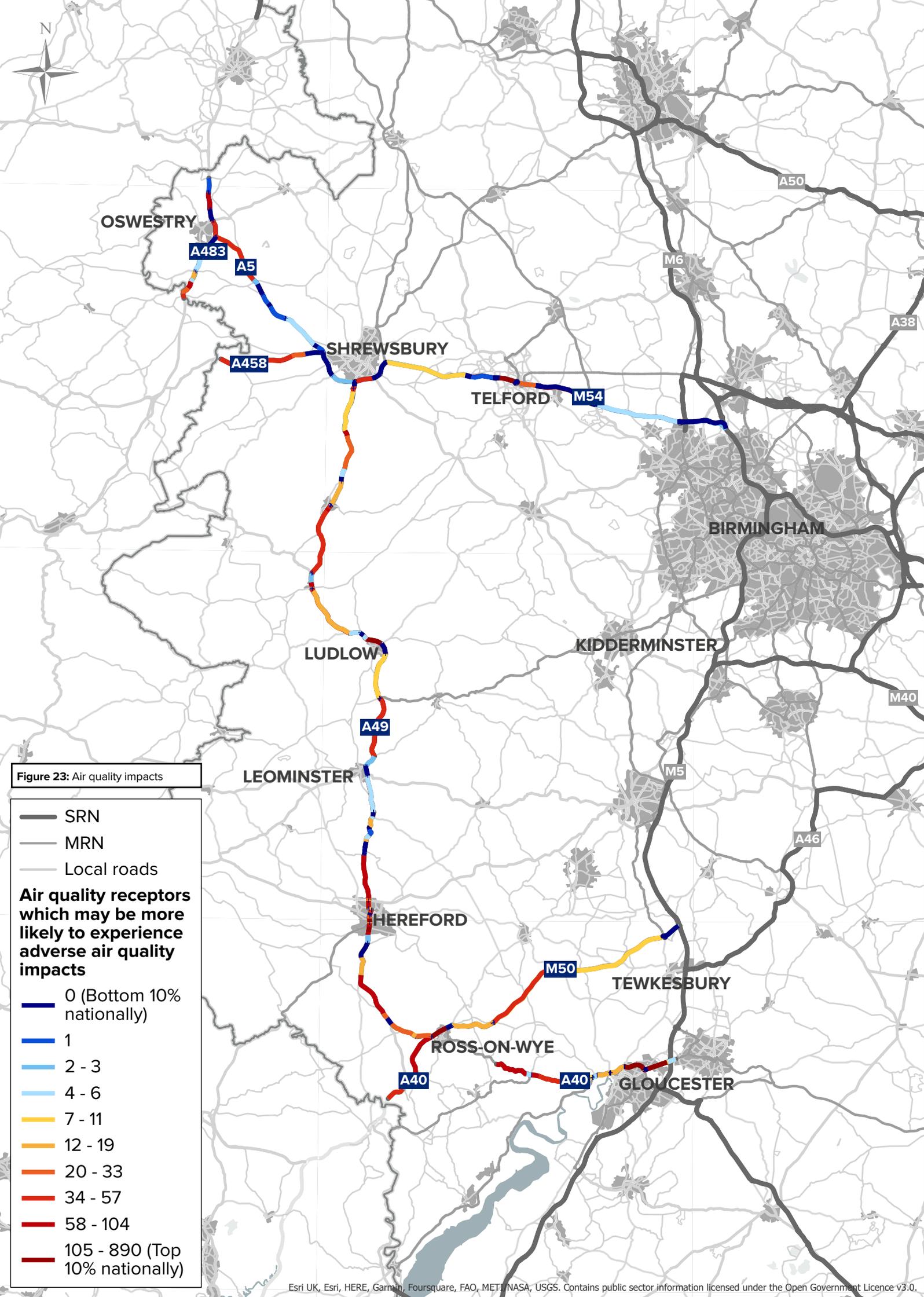
Figure 23: Air quality impacts

SRN

MRN

Local roads

Air quality receptors which may be more likely to experience adverse air quality impacts

0 (Bottom 10% nationally)

1

2 - 3

4 - 6

7 - 11

12 - 19

20 - 33

34 - 57

58 - 104

105 - 890 (Top 10% nationally)

OSWESTRY

A483

A5

A458

SHREWSBURY

TELFORD

M54

BIRMINGHAM

KIDDERMINSTER

LUDLOW

A49

LEOMINSTER

M5

HEREFORD

M50

TEWKESBURY

ROSS-ON-WYE

A40

A40

GLOUCESTER

A50

M6

A38

M40

A46

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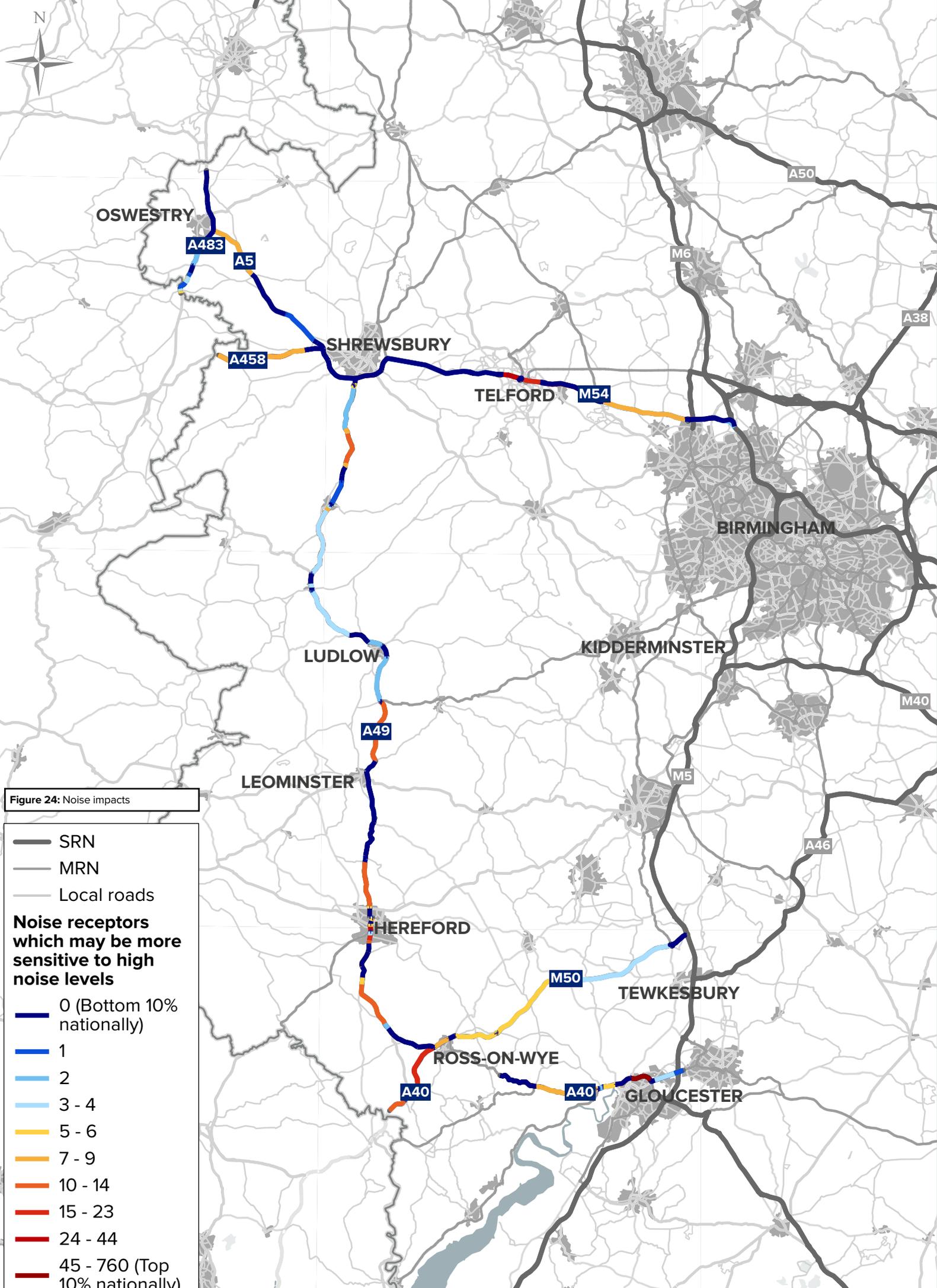
Figure 24: Noise impacts

Legend:

- SRN
- MRN
- Local roads

Noise receptors which may be more sensitive to high noise levels

- 0 (Bottom 10% nationally)
- 1
- 2
- 3 - 4
- 5 - 6
- 7 - 9
- 10 - 14
- 15 - 23
- 24 - 44
- 45 - 760 (Top 10% nationally)

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G. Promote improved communications for all users

Objective

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

Context

Information provided on the strategic road network (SRN) is of key importance for road users. 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

There is the potential to:

- better integrate the operation of roadside traffic information and management between the SRN and local road networks to enhance the efficiency of the road networks as a whole

- provide more pre-journey information, integrated across all modes

Our network considerations

Communications on this route are limited. This is partly due to a high proportion of the route being rural A-roads. Only 25% of the route is motorway, with the A5, A483, A458, A49 and A40 all having negligible roadside user information.

Outcomes

- Better informed drivers on both the motorway and non-motorway sections of the SRN

- Improved driver satisfaction with information related to the route

DfT's Strategic objectives

Managing and planning the SRN for the future

A technology-enabled network

Timeframe based on the issues and constraints identified

Now — Limited communications on all sections of the route

Future Road Periods — Continuation of the issues identified in the current road period (2020-2025)
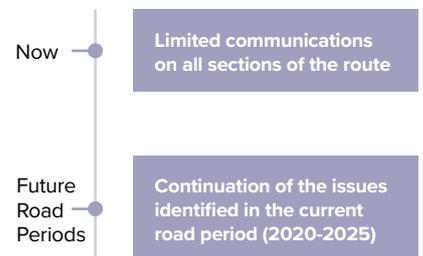
Table 2: Evidence used to inform objectives

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:** provide safe journeys on the sections of the A40, A49, A5, A458 and A483 with low safety ratings, to benefit all road users and local communities	Sections of the A40, A49, A5, A458 and A483	Safety concerns about various sections of the A49, including Moreton-on-Lugg, Wellington, Hope under Dinmore, key junctions such as the A417 and within Hereford Safety concerns about the A40 around Gloucester from M5 Junction 11 west to the county boundary and use of the B4221 between M50/J3 Gorsley and Kilcot A40 by an increasing number of heavy goods vehicles Safety concerns about junctions in Pant on the A483, and on the A458 between the A5 and the Welsh border	No information specific to this objective	Route sections on the A40, A49, A5, A458 and A483 which have the lowest safety ratings from either International Road Assessment Programme or the Road Safety Foundation Crash Risk Mapping: • A49 between Ross-on-Wye and Shrewsbury • A40 north and west of Gloucester • A5 between south of Shrewsbury and the Welsh border • A458 between the A5 and the Welsh border • A483 between Oswestry and Pant Concentrations of collisions and sections of the route where people were killed or seriously injured: • A40 west of Gloucester • Sections of the A49 between Ross-on-Wye and Shrewsbury • A5 south of Oswestry
B	**Improve cross-border connectivity between the Midlands and Wales:** improve the gateways of the A5, A458, A483 and A40 between Wales and the Midlands, supporting cross-border connectivity, freight strategy, economic links and the tourism industry of the Marches and Mid Wales	The cross-border strategic links: • the M54/A5, A458 and A483 at the northern end of the route • the M50/A40 at the southern end of the route	Network performance issues on connections between Wales and the Midlands and north/south, which make it difficult to attract investment A need for good connectivity via the A458 and A483 as they are important freight corridors for the growth of the Mid Wales economy A need for reliable access to international gateways, particularly to Holyhead Port A need for a multimodal strategy for cross-border routes, based on collaboration between National Highways, local authorities and the Welsh Government Need for consideration of the potential impacts of the Wales Transport Strategy, published by the Welsh Government in March 2021, with the focus being on modal shift and sustainable forms of transport	The MRN, linking to the SRN, provides further cross-border connections from the A40 to South Wales, via the A48 to Chepstow and the A4136 to Monmouth, and from the A49 at Hereford to South Wales via the A465 through Abergavenny Improving transport connectivity between the four nations of the UK is a government priority, and the focus of the recently published Union Connectivity Review	Route sections on the A40, A5, A458 and A483 with low safety ratings from both International Road Assessment Programme and/or the Road Safety Foundation Crash Risk Mapping Average peak period delays and unreliability on the A40 around the north of Gloucester, A5 junctions to the south of Shrewsbury and A5 north of Oswestry Seasonal delays in both directions on the A5 between Shrewsbury and the Welsh border Severance on the A40 north of Gloucester, at the junctions on the A5 around Shrewsbury, and on the cross-border routes of the A483 and A458 Potential adverse air quality impacts on the A40 north-east of Gloucester, between the M50 junction and south of Ross on-Wye, the A458 and parts of the A5 south and north of Oswestry A lack of good information and facilities for alternative fuel vehicles on cross-border routes

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	**Support east-west connectivity to economic opportunities and services:** enable and support effective connections between communities with high deprivation and key employment opportunities and services in the West Midlands and the areas of Gloucester and Bristol	Communities served by the A40 and A49, particularly the Forest of Dean area and any communities with high deprivation	Need for a reduction in journey times to more isolated areas of the network Need for improved connectivity between the Forest of Dean area and Hereford, Ross-on-Wye, Worcester and Birmingham, to provide socio-economic benefits for that area	Poor east-west connectivity is one of the key problems to solve in Midlands Connect's Strategic Transport Plan The Union Connectivity Review recognises that access to strategic connections is vital to the economic success of an area	Some areas in the highest 10% on the Index of Multiple Deprivation, notably south Telford, Leominster, and the Forest of Dean The Forest of Dean and northwards of the M40 fall into Category 1 for levelling up investment Few Local Plan sites and Economic Opportunity Areas which mean that good access to above areas is required for inward investment and access to economic opportunities Slow east-west journey times by road Limited east-west rail services
D	**Improve north-south connections through the Marches:** provide efficient, safe and reliable north-south connectivity for people and goods between and within settlements on the A49 corridor, particularly the economic centre of Hereford	The A49 between Ross-on-Wye and Shrewsbury	Safety concerns about various sections of the A49 (see Objective A) Congestion and delays on the A49 through Hereford, particularly at peak times Environmental impacts associated with the A49 through the urban area of Hereford—an Air Quality Management Area—as well as severance for active travel users, safety concerns and the volume of traffic all impacting local communities Concern over the ability to modify the A49 within the Hereford urban area to help support short distance active travel modes but also maintain capacity for growth The need for collaborative working and joint studies to help consider the impacts of Local Plan updates in Herefordshire and specific settlements, such as Hereford, Leominster and Ross-on-Wye	The Union Connectivity Review identifies the Welsh Marches as one of the north-south corridors which should be included within UKNET, reflecting its importance in connecting cross-border east-west routes Consideration of potential improvements to the A49, in conjunction with other Sub-national Transport Bodies and the Welsh Government, is one of Midlands Connect's strategic road priorities One of Western Gateway's objectives is to "Improve north-south connectivity"	The A49 through Hereford experiences low journey time reliability and high delays during peak periods The A49 forms a significant barrier to both west to east and north-south movements by active travel modes, acting as a deterrent to their use through the city The key issues on the rest of the A49 are intermittent delays, safety (see Objective A) and inadequate provision of active travel facilities

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	**Enable integration with active travel modes:** enable effective local connectivity through better integration and coordination with active travel modes at locations on or near to the A5, A458, A483, the A49 and the A40 north of Gloucester, to benefit active travel users and local communities	Sections of the A40, A49, A5, A458 and A483	The opportunity to improve sustainable travel access to the strategic road network/major road network, particularly in light of the Government's focus on decarbonisation and active travel Potential improvements to the active travel (cycling and walking) network for travelling within and between urban centres A need to consider cross border active travel measures, for example through Pant and Llanymynech on the A483 A need to consider the potential impacts of the Wales Transport Strategy, with its focus being on modal shift and the priorities being sustainable forms of transport including walking/cycling and public transport first Severance on specific roads such as the A49 and the A40 north and west of Gloucester	No information specific to this objective	There are several route sections where interested parties report that severance, where the transport network interrupts or disconnects local journeys, is a barrier to walking, cycling and horse riding: • on the A40 north of Gloucester • at the junctions on the A5 around Shrewsbury • on the cross-border routes of the A483 and A458 • and along the A49 between Ross-on-Wye and Shrewsbury, particularly through the many communities along this route
F	**Be a better neighbour:** be a better neighbour by safeguarding the environment and reducing air quality and noise impacts on settlements with Air Quality Management Areas (AQMAs) and Noise Important Areas (NIAs), and along the A49, A483 and A5	All route sections, including the M50 and M54	Environmental impacts associated with the A49 through the urban area of Hereford–an Air Quality Management Area–as well as severance for active travel users, safety concerns and the volume of traffic all impacting local communities A need to protect biodiversity along the strategic road network (SRN)/major road network (MRN) A need for an improved understanding of carbon accounting for the SRN/MRN, and how National Highways could contribute to a reduction in carbon emissions	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" Two of Western Gateway's seven objectives are "Decarbonisation of the strategic transport network" and "Improve Air Quality"	The route passes through or near to many environmentally important locations which need safeguarding against any potential adverse impacts from the SRN In terms of air quality, there are route sections where there is a high number of receptors within 100m of the route, an indicator of potential adverse air quality impacts, and Air Quality Management Areas In terms of noise, there are receptors within 300 metres of the carriageway which may be more sensitive to high noise levels on the westbound M54 east of Telford, the A49 in the middle of Hereford and on a section of the A40 north of Gloucester. There are many Noise Important Areas along the route, including major settlements such as Shrewsbury, Hereford and Gloucester

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
G **Promote improved communications for all users:** promote improved 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	A need to provide real time traffic information, to give drivers instant data on traffic conditions ahead of them A need for advance signage on local roads ahead of junctions to help drivers make a decision about whether to join the SRN A need for additional operational engagement between North and Mid Wales Traffic Management Centre and National Highways	No information specific to this objective	A lack of information for users of this route and adjoining roads This is partly due to a high proportion of the route being rural A-roads, with only 25% of the route being motorway standard The A5, A483, A458, A49 and A40 all have negligible roadside user information

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 Midlands and Gloucestershire to Wales 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 value

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 25 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.
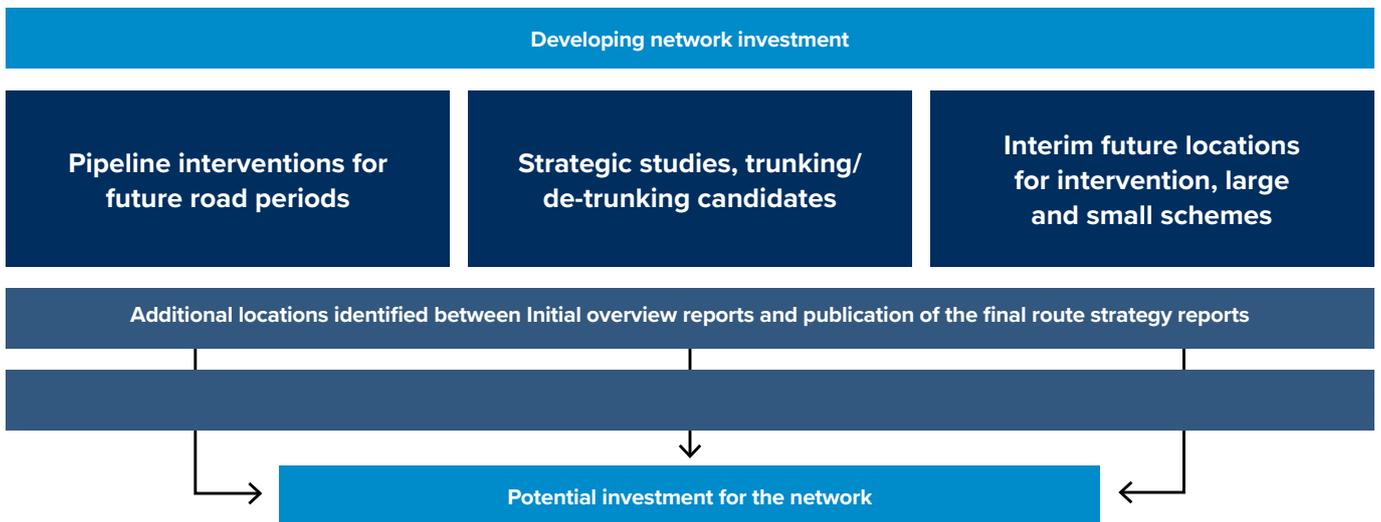
Figure 25: Process to identify potential investment on the network

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 Midlands and Gloucestershire to Wales 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 Midlands and Gloucestershire to Wales route:

Scheme number	Scheme	Description	Start of works	Open for traffic
Committed for the second road period (2020-2025)				
1	M54 to M6 Link Road	Providing an improved link between the M54 and the M6 as there's no direct motorway link from the M54 to the M6 north. Improving this link will: • provide additional capacity and relieve traffic congestion on the A460, A449, and A5, providing more reliable journey times • enhance facilities for local residents, walkers, cyclists, and horse riders • improve customer journeys from east to west and north to south (this will support local economic growth for Telford, Shrewsbury, Wolverhampton, Cannock and Tamworth by improving traffic flow and enhanced east-west and north-south routes) • keep the right traffic on the right roads by separating local traffic from long-distance and commuter traffic	2022-23	Third road period (2025- 2030)

RIS4 pipeline

The following uncommitted schemes are in the pipeline for the fourth road period (2030-2035) on the Midlands and Gloucestershire to Wales route.

Scheme number	Scheme	Description
1	A483 Pant- Llanymynech Improvements (in cooperation with the Welsh Government)	A review of potential options and the business case for improvements, in conjunction with the Welsh Assembly Government, is currently being undertaken.

Other notable schemes

On the Midlands and Gloucestershire to Wales route, the Shrewsbury North Western Relief Road (NWRR) is a committed scheme, sponsored by Shropshire Council and jointly funded with the Department for Transport. The Shrewsbury NWRR will provide a new, single carriageway road linking the western and northern parts of Shrewsbury, from the A5 at Welshpool Road roundabout in the west to the Ellesmere Road roundabout in the north, facilitating the Shrewsbury West Urban Extension (SUE).

Network Rail is working with Transport for Wales and the Welsh Government on the identification of potential rail improvements between Mid Wales and the Midlands. Network Rail is also undertaking strategic planning studies of north-south links through the Marches, and supporting early development work on the potential line reopening between Gobowen and Oswestry, promoted by Cambrian Heritage Railways and funded through the Department for Transport's Restoring your Railway Fund.

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 Midlands and Gloucestershire to Wales 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*[49]. 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 Midlands and Gloucestershire to Wales 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.

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49   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[50] 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.

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

Table 3 and Figure 26 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 to 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
		Shrewsbury to the Welsh Border (A to C)		
A5 From Shrewsbury to the Welsh Border	A	The A5 is a major **cross-border route** between the Midlands and North Wales. **Freight connectivity** is important to access north Wales and the port of Holyhead. **Collisions** where people were killed or seriously injured have been recorded on the A5 south of Oswestry, and the route between the A5 north of Shrewsbury and the Welsh border has a low International Road Assessment Programme (iRAP) **safety rating.** There is evidence of **average peak period delays** at the A5 junctions in south Shrewsbury and north of Oswestry, and **seasonal delays** due to tourist traffic. Major **housing and employment growth** is planned in north Shrewsbury. Receptors either side of Oswestry on the A5 may experience adverse **air quality** impacts. **Severance** around the A5 junctions in south Shrewsbury has been highlighted as a concern. There is **limited information** for road users and **roadside refuelling facilities** for alternative fuel vehicles on the A5.	✓	✓
A458 From A5 Junction to the Welsh Border	B	The A458 is used for **cross-border journeys** between the Midlands and Mid Wales. The road has a low iRAP **safety rating**. Receptors along the A458 may experience adverse **air quality impacts**, and severance has been highlighted as a concern and a barrier to use of **active travel modes**. There is limited **information** for road users and **roadside refuelling facilities** for alternative fuel vehicles on the A458.	✓	✓
A483 From Oswestry to Llanymynech	C	The A483 is used for **cross-border journeys** between North-West England and Mid Wales. The road has a low iRAP **safety rating**, and is classed as a medium-risk road by the Road Safety Foundation Crash Risk Mapping. Receptors along the A483 may experience adverse **air quality impacts**, and **severance** has been highlighted as a concern and a barrier to use of **active travel modes**. There is limited **information** for road users and **roadside refuelling facilities** for alternative fuel vehicles on the A483.	✓	✓

Area location	Area of interest	Area issues	Now	Future road periods
		A49 Ross-on-Wye to Shrewsbury (D to G)		
A49 From Ross-on-Wye to Hereford	D	The A49 provides the main **north-south link** through the Marches, connecting the A5 and A40 cross-border corridors. **Collisions** where people were killed or seriously injured have been recorded on the A49 between Ross-on-Wye and Hereford. This section also has a low iRAP **safety rating**. Adverse **air quality impacts** may be experienced along this section of the A49. There is limited **information** for road users and **roadside refuelling facilities** for alternative fuel vehicles on this section of the A49.	✓	✓
A49 Through Hereford	E	Hereford is an **economic centre** on the A49, which provides the main **north-south link** through the Marches, connecting the A5 and A40 cross-border corridors. There is **average peak period delay** on the A49 through the centre of Hereford, together with additional **seasonal delays** and **unreliability** at all times of the year. An Air Quality Management Area has been declared covering Hereford, and receptors may experience adverse **air quality** and **noise impacts**. **Severance** has been highlighted as a concern and a barrier to use of **active travel modes** within the city.	✓	✓
A49 From Hereford to Craven Arms	F	**Collisions** where people were killed or seriously injured have been recorded on the A49 between Ludlow and Craven Arms. This section has a low iRAP **safety rating**. There are receptors which may experience adverse **air quality** impacts in the Ludlow area, and **severance** is reported to be a barrier to use of **active travel modes** along the route. There is limited **information** for road users and **roadside refuelling facilities** for alternative fuel vehicles on this section of the A49.	✓	✓
A49 From Craven Arms to A49/A5 Junction	G	**Collisions** where people were killed or seriously injured have been recorded on the A49 between Craven Arms and the A49/A5 Junction. This section has a low iRAP **safety rating**. There are receptors which may experience adverse **air quality** impacts in the Church Stretton area, and **severance** is reported to be a barrier to **active travel mode** use along the route. There is limited **information** for road users and **roadside refuelling facilities** for alternative fuel vehicles on this section of the A49.	✓	✓
		A40 Gloucester to the Welsh Border (H to I)		
A40 From the M5 Junction to Dursley Cross	H	The A40 is used for **cross-border journeys** between Midlands, Gloucestershire and south Wales, as well as a commuting route to the Gloucester area. **Collisions** where people were killed or seriously injured have been recorded on the A40 west of Gloucester. The A40 north and west of Gloucester has a low iRAP **safety rating**. There are **average peak period delays** on the A40 through north Gloucester and **seasonal delays** between Huntley and M5 Junction 11. Major **housing and economic development** is planned adjacent to the A40 in the north of Gloucester. Receptors along the A40 may experience adverse **air quality** and **noise** impacts, and **severance** has been highlighted as a concern and a barrier to use of **active travel modes**. There is limited **information** for road users and **roadside refuelling facilities** for alternative fuel vehicles on this section of the A40.	✓	✓
A40 From Ross-on-Wye to the Welsh border	I	The A40 south of Ross-on-Wye is used for **cross-border journeys** between the Midlands and south Wales. This road has a low iRAP **safety rating**. Receptors between Ross-on-Wye and the Welsh border may experience adverse **air quality** impacts. There is limited **information** for road users and **roadside refuelling facilities** for alternative fuel vehicles on this section of the A40.	✓	✓

Figure 26: Areas of interest for further investigation

Legend:

- Midlands and Gloucestershire to Wales route
- SRN
- MRN
- Local roads

RIS schemes
- Committed for second road period (2020-2025)
- RIS4 Pipeline

A5
- A - Now and Future road periods

A458
- B - Now and Future road periods

A483
- C - Now and Future road periods

A49
- D - Now and Future road periods
- E - Now and Future road periods
- F - Now and Future road periods
- G - Now and Future road periods

A40
- H - Now and Future road periods
- I - Now and Future road periods

Esri UK, Esri, HERE, Garm

TELFORD **M54**

A50

A453

M6

A50

A38

A42

M1

① 1

1

BIRMINGHAM

M6

KIDDERMINSTER

M40

M5

A46

M50

TEWKESBURY

SS-ON-WYE

A40 H **GLOUCESTER**

**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*[51] 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/

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51 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 Countryside 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 resources 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. Freeports 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 managed 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		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 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 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' motorways 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 practice 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.

Term	Acronym	Description
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.
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 Conservation 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 members 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.

Glossary of terms

Term	Acronym	Description
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.
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 control 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 aspects...". 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

national highways

If you need help accessing this or any other National Highways information, please call **0300 123 5000** and we will help you.