

Route Strategy Initial Overview Report

London to Scotland East (North)

May 2023





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The routes

Routes

- London to Scotland West (North)
- London to Scotland East (North)
- South Pennines (East)
- South Pennines (West)
- North Pennines
- London to Leeds
- Midlands and Gloucestershire to Wales
- North and East Midlands
- South Midlands
- London to Scotland West (South)
- London to Scotland East (South)
- East of England
- Felixstowe to Midlands
- Kent Corridors to M25
- Solent to Midlands
- London Orbital and M23
- South Coast Central
- South West Peninsula
- Birmingham to Exeter
- London to Wales

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.

PENZANCE

PLYMOUTH



Executive summary

Introduction

Our strategic road network (SRN) is the backbone of the country. Our 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 London to Scotland East (North) 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 six Department for Transport (DfT) 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 DfT 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 London to Scotland East (North) route is a north-south route comprising approximately 316 miles of the SRN. The route is made up of the M1, A1 and the A19, which form the principal road connections between North East England and Scotland, and short sections of the SRN that provide access to urban centres, namely the A168, A66, A174, A1053, A194(M), A184 and A696. The route runs from Rotherham to the Scottish border and passes through South Yorkshire, West Yorkshire, North Yorkshire, County Durham, Tyne and Wear, and Northumberland.

The northern end of the route adjoins the North Pennines route at the A69 and A66. The southern end of the route adjoins the London to Scotland East (South) route, where the M1 continues in a north-south direction, providing a connection to London. It adjoins the London to Leeds route, where the A1(M) and A1 continue southwards to London. The route also joins the South Pennines (East) route, connecting to the A64, M62 and M18. The latter, in turn, connects with the M180. To the west, the route joins the South Pennines (West) route, connecting to the M62, M621 and A616.

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 ahead² document in December 2021.

Improving safety for all

- Sections of the A66, A19 and the A1 have received an International Road Assessment Programme (iRAP) star rating of 2 (medium-high risk road) or 1 (high-risk road)
- Several sections of the A1, A1(M) and A19 experience concentrations of collisions where people have been killed or seriously injured

Network performance

- Localised delays across the London to Scotland East (North) route, particularly on the A1(M)
- Journey time unreliability resulting from seasonal variation in demand, particularly where the A1(M) and the M1 provide access to tourist destinations
- Sections of the A1 are expected to be near capacity in 2031 due to housing and employment growth, which will cause delays

¹ Highways England (2020) *Delivery plan: 2020-2025*.

<https://nationalhighways.co.uk/media/vh0byhfl/5-year-delivery-plan-2020-2025-final.pdf>

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

- Risk of poor air quality and noise at receptors lying close to parts of the A1(M) and M1
- Risk of flooding from surface water at some north-eastern sections of the route
- Limits to possible use of sustainable modes for short trips, as parts of the route cause severance to active travel routes
- Maintaining and protecting areas of outstanding natural beauty, areas with environmental designations and cultural heritage
- Minimising greenhouse gas emissions
- Building resilience to future climate change

Growing the economy

- North-south connectivity enabled by the route, which plays a key role in supporting economic growth in the North
- Significant employment and housing growth projected in the region between Sheffield and East Scotland, which the route will facilitate access to
- Significant proportion of GVA linked to the SRN at certain parts of the route, particularly related to freight and goods
- Priority areas for levelling up at several locations along the route
- Reliance on route by visitors to National Parks and Areas of Outstanding Natural Beauty (AONBs)

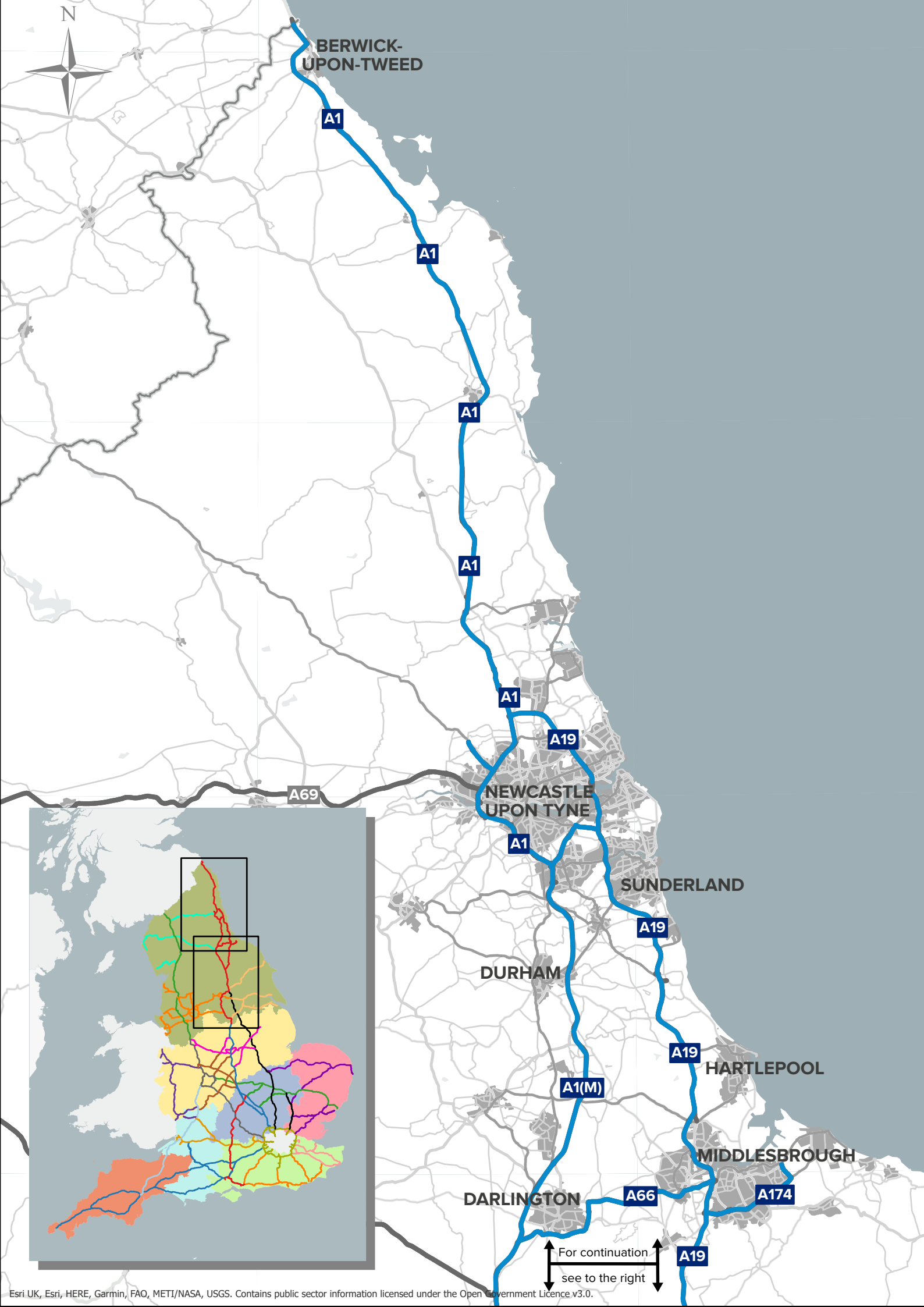
Managing and planning the SRN for the future

- 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 technology-enabled network

A technology-enabled network

- Lack of information for road users
- Limited provision of electric vehicle charging points outside of main urban centres





BERWICK-UPON-TWEED

A1

A1

A1

A1

A1

A19

A69

NEWCASTLE UPON TYNE

A1

SUNDERLAND

A19

DURHAM

A19

HARTLEPOOL

A1(M)

MIDDLESBROUGH

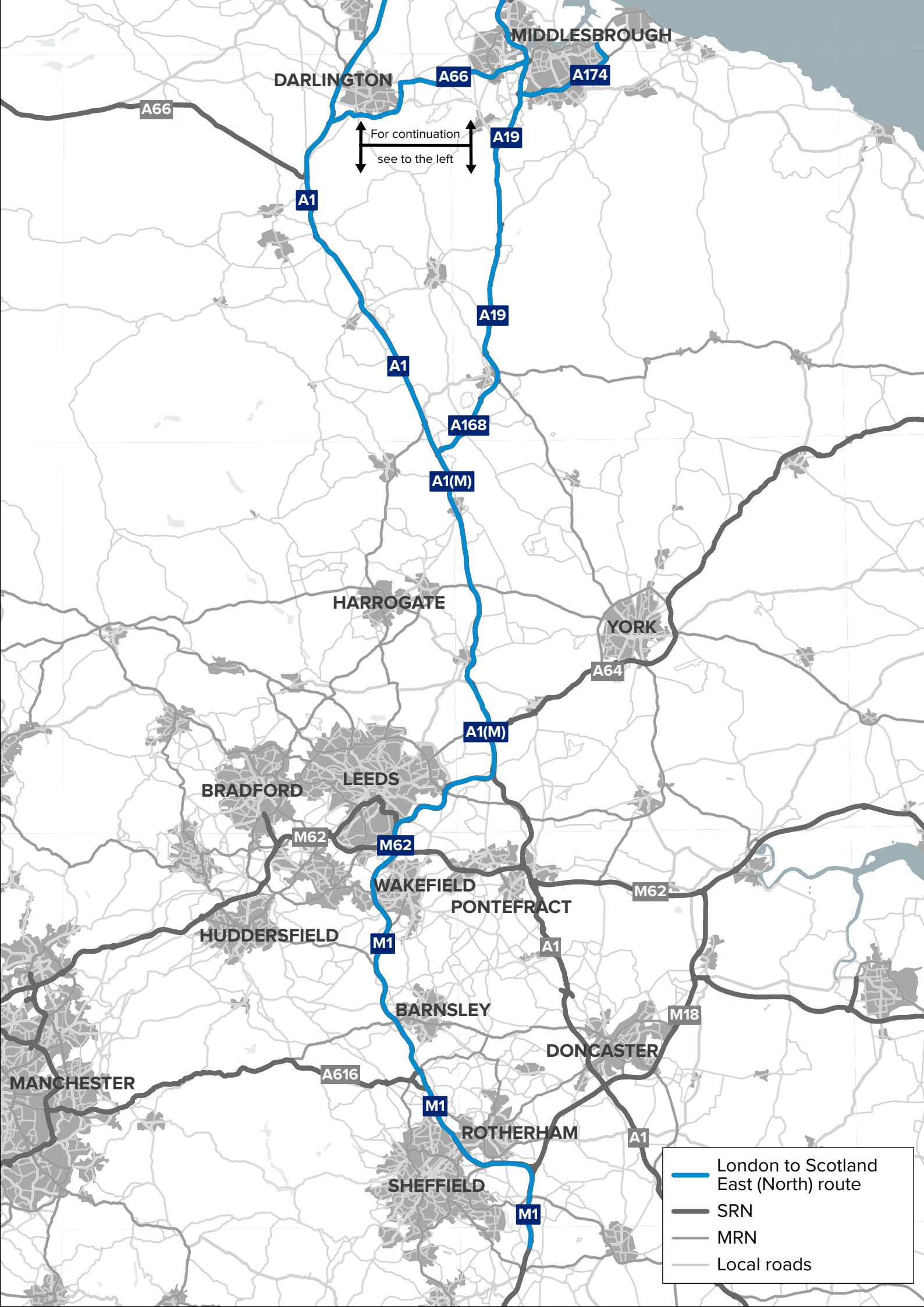
DARLINGTON

A66

A174

A19

For continuation
see to the right



DARLINGTON

MIDDLESBROUGH

A66

A66

A174

For continuation
see to the left

A19

A1

A19

A1

A163

A1(M)

HARROGATE

YORK

A64

A1(M)

BRADFORD

LEEDS

M62

M62

WAKEFIELD

PONTEFRACT

M62

HUDDERSFIELD

M1

A1

BARNESLEY

DONCASTER

M18

MANCHESTER

A616

M1

ROTHERHAM

A1

SHEFFIELD

M1

London to Scotland
East (North) route

SRN

MRN

Local roads

Initial route objectives

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

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
Support safe and reliable journeys on the network							
A	Improve user experience of safe journeys through provision of a resilient and consistent network across the route	✓	✓				
Support sustainable economic growth and levelling up in the North							
B	Support sustainable economic growth and levelling up in the North through efficient and reliable journeys on the M1, the A1 and the A19		✓		✓		
Support the efficient movement of goods on the M1 and A1							
C	Support the needs of the freight industry through the efficient movement of goods on the M1 and A1, to support the regional and national economy		✓		✓		✓
Reduce environmental impacts on communities							
D	Be a better neighbour by safeguarding the environment and reducing air quality and noise impacts on settlements within close proximity of the route		✓	✓			
Support the Yorkshire and North East visitor economy							
E	Support the Yorkshire and North East visitor economy by improving gateways to the Northumberland National Park, the Nidderdale AONB, the Yorkshire Dales National Park, North Pennines AONB and the North York Moors National Park		✓		✓		
Minimise the reliance on the local road network when collisions and closures occur on the SRN							
F	Minimise the impact on communities in locations such as Wakefield, Darlington, Hartlepool and Stockton-on-Tees due to strategic traffic using the local road network when collisions and closures occur on the SRN	✓	✓				
Support connectivity with sustainable transport modes							
G	Support effective connectivity to urban centres, including Sheffield, Leeds and Newcastle, through improved integration with sustainable transport modes to minimise the traffic impact on the route and benefit the environment		✓	✓			

Next steps

The 20 route *strategy Initial overview reports* will combine with other related evidence to inform the broader *SRN initial report*³ as part of the RIS process for the third road period. 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, which will serve to inform the RIS and *Strategic business plan*.

We will finalise the *Route strategy 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.

³ National Highways (2023) *Strategic Road Network initial report*. <https://nationalhighways.co.uk/futureroads>



Berwick A1
Christon Bank
B6347
Seahouses
(B1340)

**Helping
the nation
to thrive**

01 Introduction

Our strategic road network (SRN) is the backbone of the country. Our 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; Connecting the country: Our long-term strategic plan to 2050*⁴ 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*⁵.

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

⁴ National Highways, 2022, *Connecting the country: Our long-term strategic plan to 2050*, <https://nationalhighways.co.uk/connectingthecountry>

⁵ HM Government, *The Ten Point Plan for a Green Industrial Revolution Building back better, supporting green jobs, and accelerating our path to net zero, November 2020* 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
- 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

Route strategy reports

These Route strategy initial overview reports have informed the *SRN initial report*⁶ that sets out our vision and proposed priorities for the third road period (2025-2030) and beyond.

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

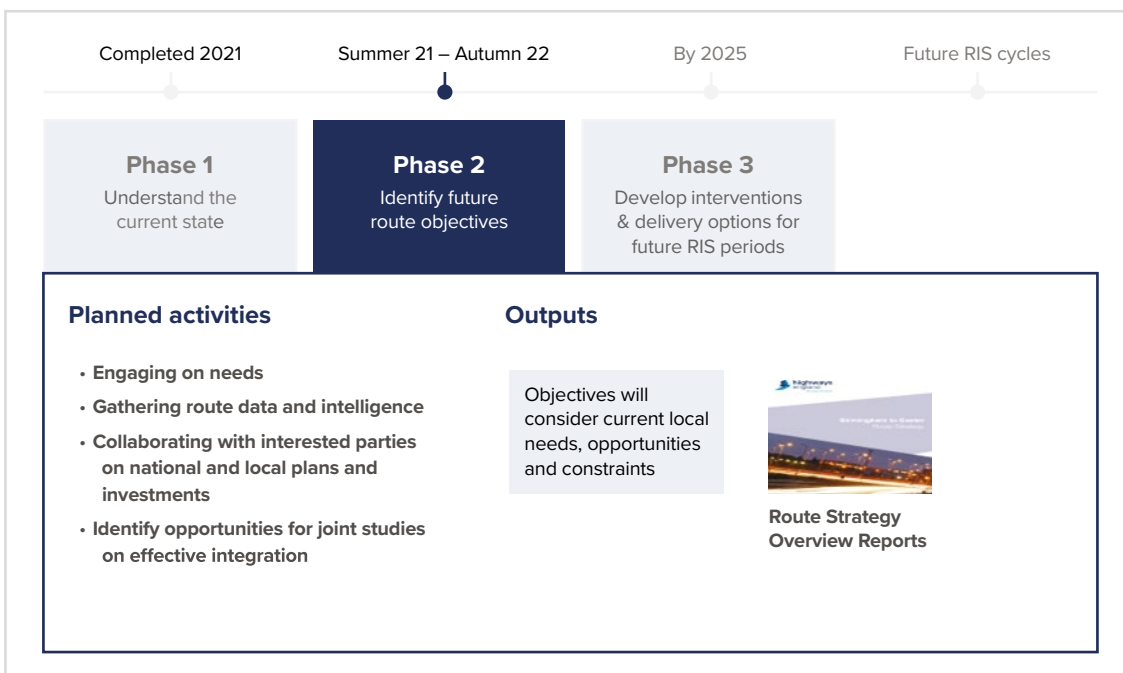


Figure 1: The route strategies delivery phases

6 National Highways, 2023, *Strategic Road Network 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.

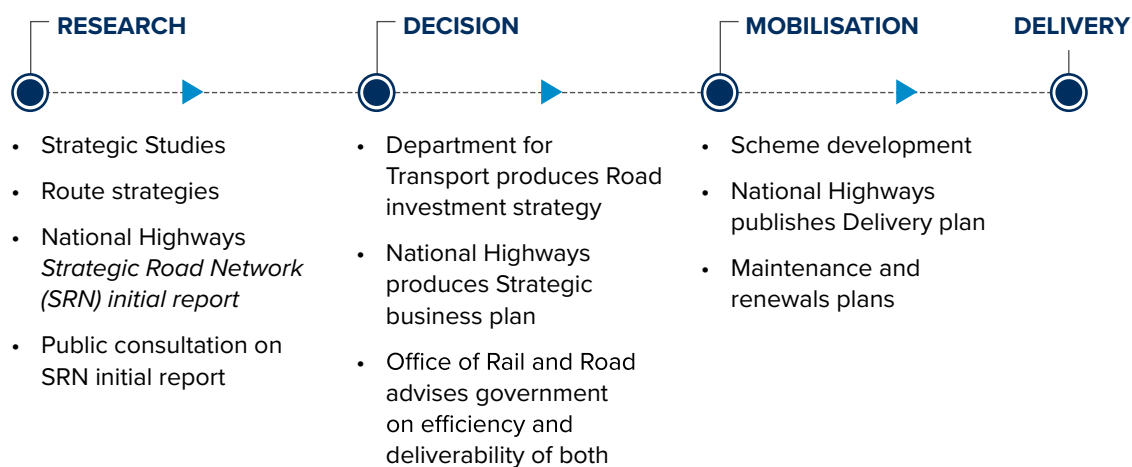


Figure 2: The RIS development cycle

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*⁷.

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*⁸ 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.

⁷ 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>

⁸ Transport Focus, 2022, *Strategic Roads User Survey - 2021/22 Summary Report*, <https://www.transportfocus.org.uk/publication/strategic-roads-user-survey-2021-22-summary-report/>

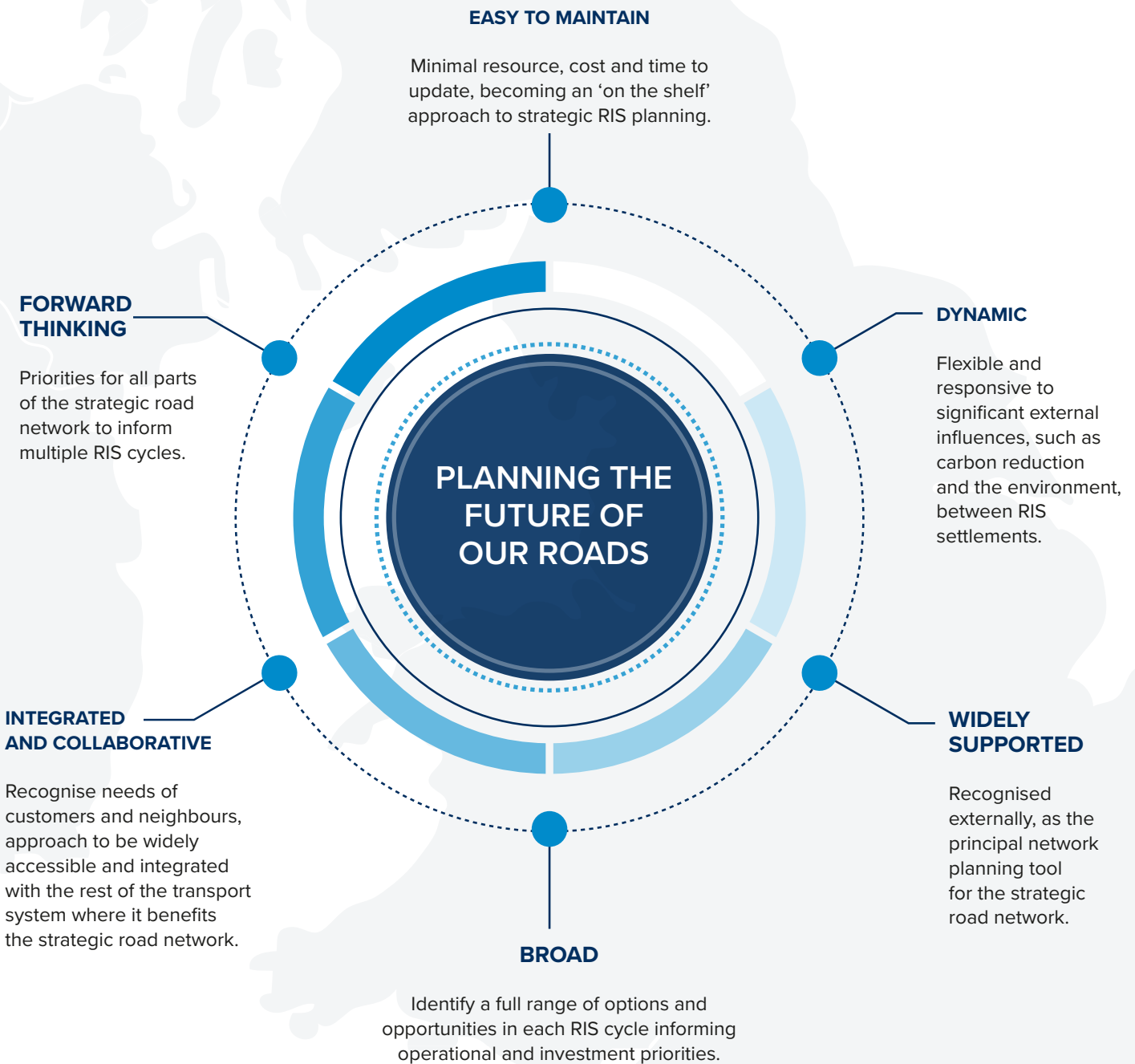


Figure 3: Our ambition for route strategies

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

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

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

- Better driver education aimed at teaching road users about new technology
- Deeper consideration of environmental constraints at the earliest stage of planning, and consideration for key environmental issues such as biodiversity, air quality and sustainable transport
- A resilient and reliable SRN to support economic growth
- Better integration between the SRN and local road network to improve journey times
- Greater support for the freight industry in terms of:
 - The future of low emission vehicles and commercial fleet
 - The impact of congestion on productivity, fuel cost, driver breaks, lorry park locations and delivery times
- Greater collaboration and early engagement with interested parties, and greater alignment between network operators, including consideration for joint funding opportunities
- In addition, feedback on the SRN provided by communities and neighbours via the online tool, showed similar national priorities. The breakdown of the 1,700 responses we received via the online feedback tool are shown in Figure 4 and Figure 5.

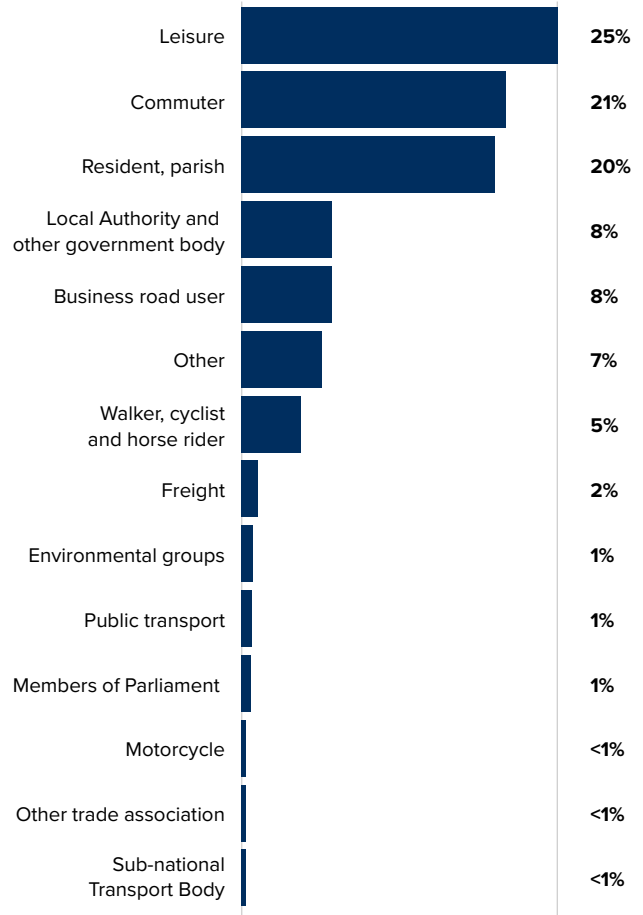


Figure 4: All responses to online tool by participant type

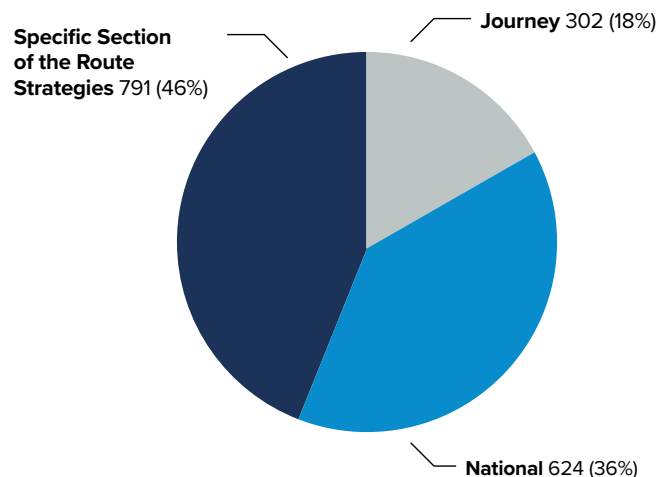


Figure 5: All response to online tool by type

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

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

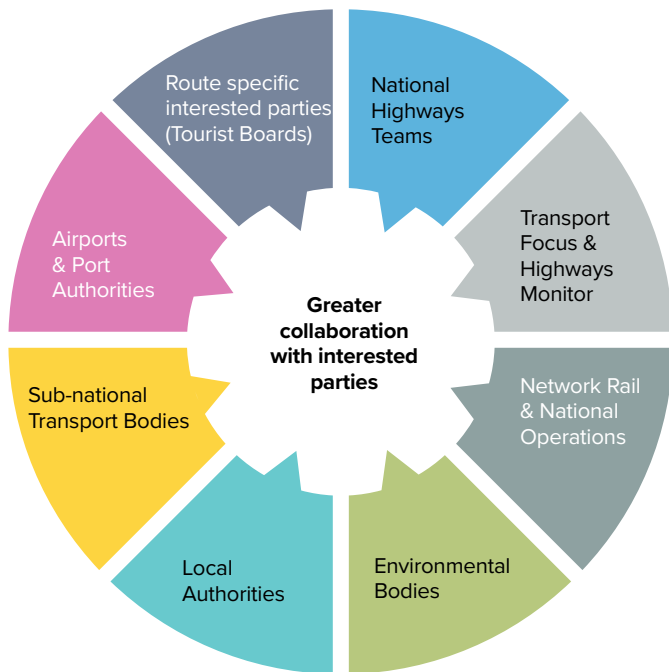


Figure 6: Interested parties involved in the route strategy engagement



Figure 7: Timeline of engagement with interested parties

DfT’s strategic objectives for the strategic road network

DfT have published six objectives for the SRN. These are the strategic objectives for RIS3 that have been agreed between National Highways and DfT and were set out in the *RIS3 Planning ahead*⁹ document in December 2021. They cover safety, network performance, environment, economy, management and planning for the future and technology.

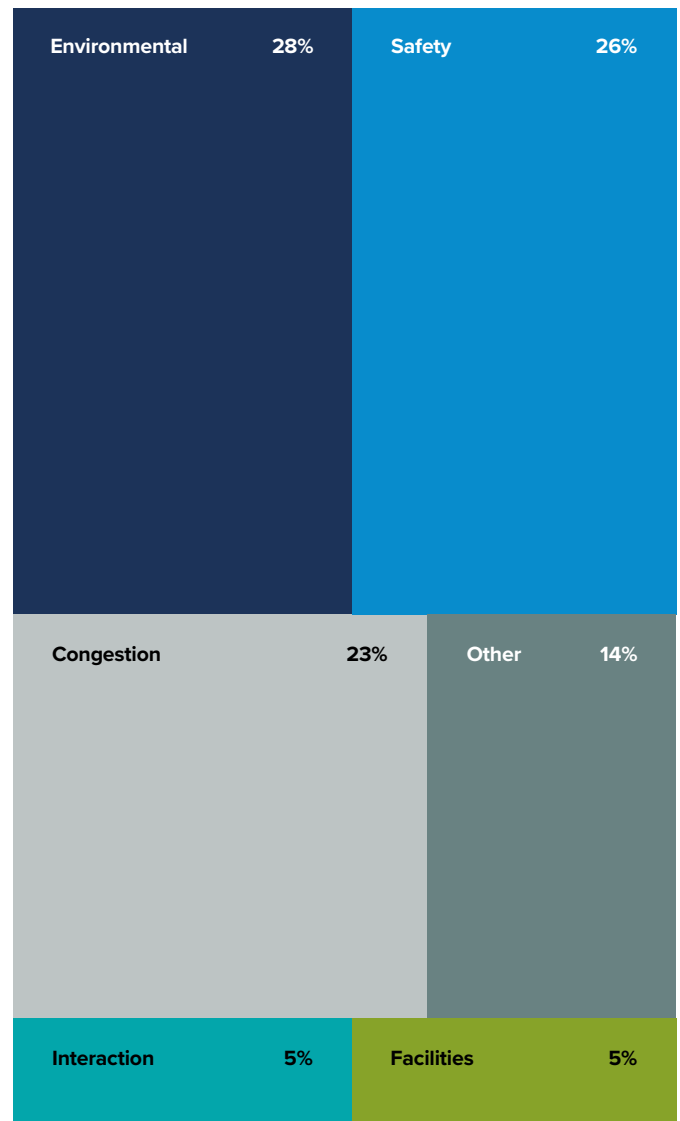


Figure 8: National themes from feedback through the online tool

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

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

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

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

i) Improving safety for all

- Our safety approach

ii) Network performance

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

iii) Improved environmental outcomes

- *Net zero highways: Our 2030/2040/2050 plan*¹⁰
- Our plan for net zero carbon travel on our roads covering emissions from the vehicles using the SRN
- Our approach to improved environmental outcomes

DFT'S SIX STRATEGIC OBJECTIVES FOR THE STRATEGIC ROAD NETWORK

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

iv) Growing the economy

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

v) Managing and planning the SRN of the future

- Our approach to asset management

vi) A technology-enabled network

- Our ambition for digital roads

¹⁰ 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*¹¹. 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

¹¹ 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 visa 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.

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 PLAN¹². 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.

¹² 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*¹³ 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.

¹³ 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 appropriately 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)¹⁴ 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.

¹⁴ National Highways (2021) *Digital roads*. <https://nationalhighways.co.uk/our-work/digital-data-and-technology/digital-roads/>



BERWICK-UPON-TWEED

A1

NORTHUMBERLAND COAST AONB

A1

A1

A1

A1

A19

NEWCASTLE UPON TYNE

A1

SUNDERLAND

A19

DURHAM

DURHAM CASTLE AND CATHEDRAL

A1(M)

HARTLEPOOL

A19

MIDDLESBROUGH

A66

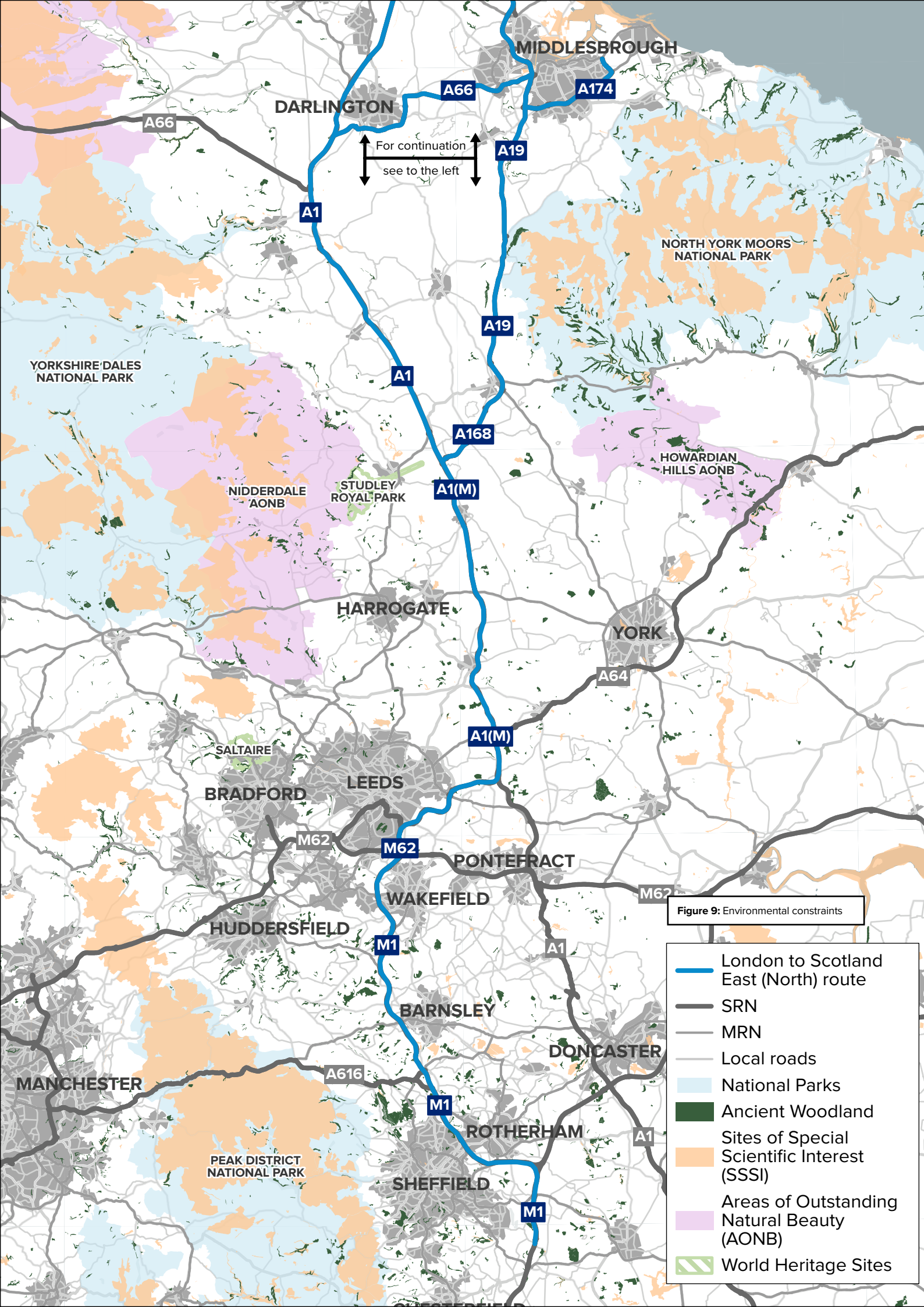
A174

DARLINGTON

A66

A19

For continuation see to the right



DARLINGTON

MIDDLESBROUGH

NORTH YORK MOORS NATIONAL PARK

YORKSHIRE DALES NATIONAL PARK

NIDDERDALE AONB

STUDLEY ROYAL PARK

HOWARDIAN HILLS AONB

HARROGATE

YORK

BRADFORD

LEEDS

PONTEFRACT

Huddersfield

WAKEFIELD

BARNsLEY

DONCASTER

MANCHESTER

PEAK DISTRICT NATIONAL PARK

SHEFFIELD

ROTHERHAM

SHEFFIELD

A1

A66

A174

A19

A19

A1

A168

A1(M)

A1(M)

A1(M)

A64

M62

M62

M62

M1

A1

A616

M1

A1

M1

For continuation see to the left

Figure 9: Environmental constraints

- London to Scotland East (North) route
- SRN
- MRN
- Local roads
- National Parks
- Ancient Woodland
- Sites of Special Scientific Interest (SSSI)
- Areas of Outstanding Natural Beauty (AONB)
- World Heritage Sites



Our network connects the country

02 The route

The London to Scotland East (North) route is a north-south route comprising approximately 316 miles of the SRN. The route is made up of the M1, A1 and the A19, which form the principal road connections between North East England and Scotland, and short sections of the SRN that provide access to urban centres, namely the A168, A66, A174, A1053, A194(M), A184 and A696. The route runs from Rotherham to the Scottish border and passes through South Yorkshire, West Yorkshire, North Yorkshire, County Durham, Tyne and Wear, and Northumberland. Towards the north of the route, the A19 runs close to the East Coast, connecting coastal towns and cities, such as Sunderland, Hartlepool, Tynemouth and Blyth.

The northern end of the route adjoins the North Pennines route at the A69 and A66. The southern end of the route adjoins the London to Scotland East (South) route, where the M1 continues in a north-south direction, providing a connection to London. It also adjoins the London to Leeds route, where the A1(M) and A1 continue southwards to London. The route also joins the South Pennines (East) route, connecting to the A64, M62 and M18. The latter, in turn, connects with the M180. To the west, the route joins the South Pennines (West) route, connecting to the M62, M621 and A616.

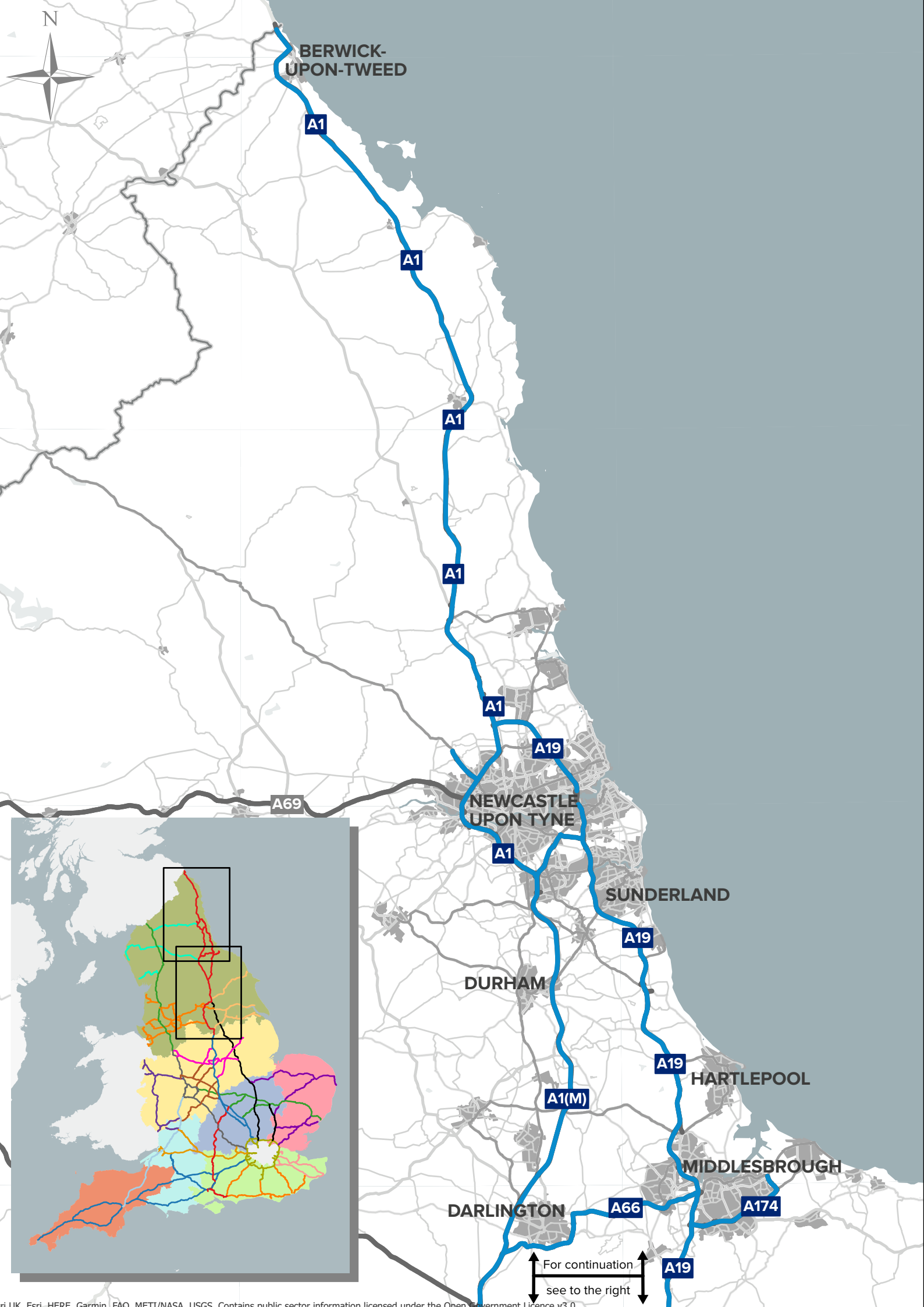
At the southern end of the route between Sheffield and Leeds, the surrounding areas are densely populated. But north of Leeds, large parts of the route are rural, passing mainly smaller towns and villages. The route reaches Durham, Middlesbrough and Newcastle, where it is mainly urban in nature, then continues towards Berwick-upon-Tweed, through predominantly agricultural areas.

The London to Scotland East (North) route provides local, regional and national connectivity to the Northumberland National Park, the Nidderdale AONB, the North Pennines AONB, Northumberland Coast AONB, the Yorkshire Dales National Park and the North York Moors National Park. All of these sites experience high numbers of visitors during the year.

The M1 is a three-lane motorway. The A1 is predominantly two-lane, but also consists of sections of three-lane dual carriageways and some sections of single carriageway towards Northumberland. The A19 consists of a two-lane dual carriageway.

The route provides direct access to important commercial and industrial centres in the North of England such as Sheffield, Leeds, York, Teesside and Newcastle. The M1 and A1 form a key strategic north-south route between the South Yorkshire and Northumberland regions. These roads, along with the A19, provide access to several key employment locations in the North, such as the Leeds Enterprise Zone, the International Advanced Manufacturing Park in Sunderland, and the Advanced Manufacturing Industrial District in Sheffield. This route is crucial for the north-south movement of freight, including the Teesside Freeport, which can be directly accessed via the A19. The route also provides connectivity with key east-west routes, including the M62, A64 and A66.

This route strategy is based on the road network as of the start of the second road period (2020 – 2025). During the first and second road periods, eight new schemes were opened to traffic in the London to Scotland East (North) route on the A19, A1, and M1, with an additional scheme in construction on the A1. We recognise that some of the journeys on this route are part of longer trips and therefore need to be considered alongside strategies on other routes.



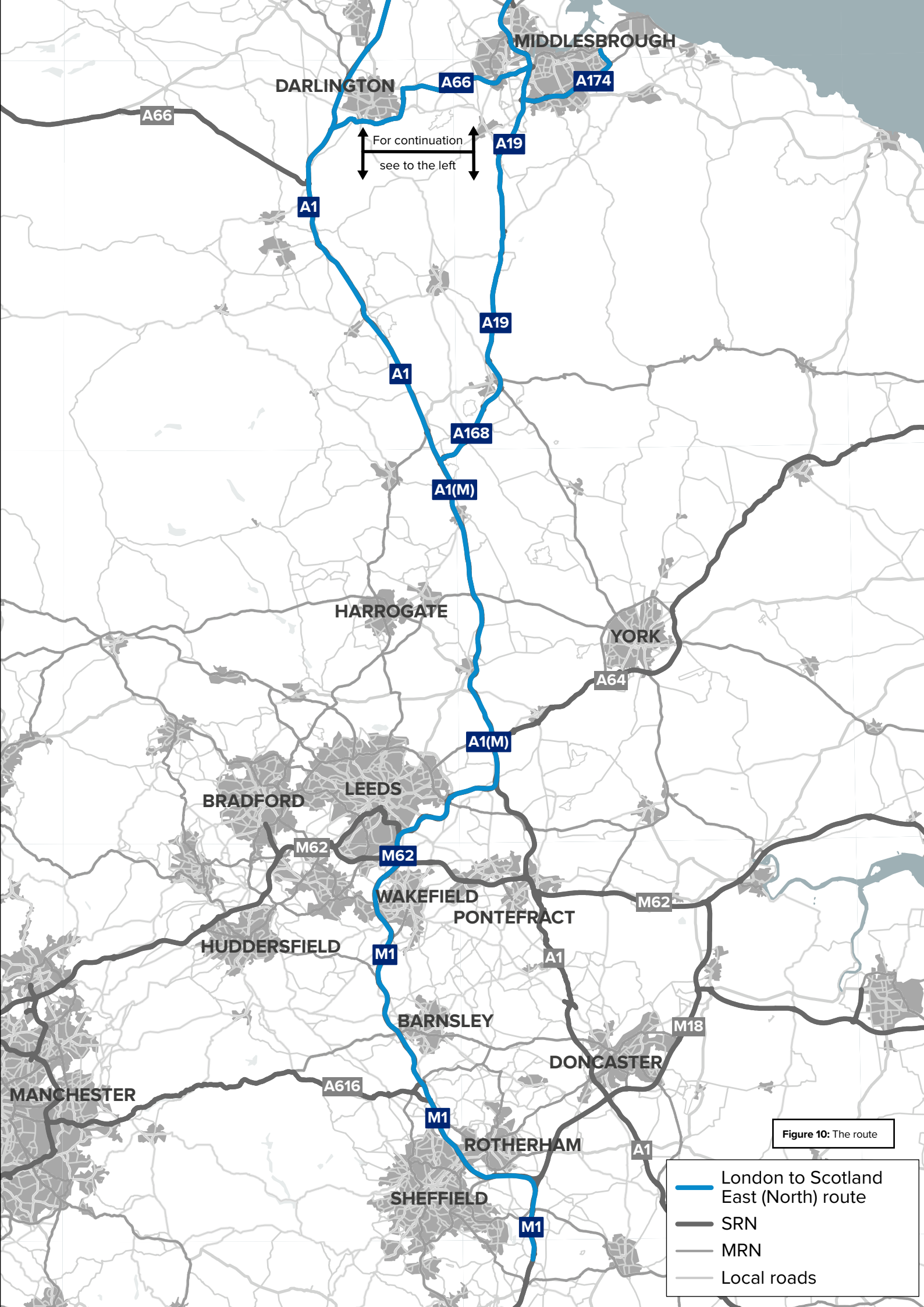


Figure 10: The route

- London to Scotland East (North) route
- SRN
- MRN
- Local roads



**Listening
to your
feedback**

03 Engagement with customers and neighbours

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

Engagement with customers and neighbours in the London to Scotland East (North) area

Early engagement with the Department for Transport (DfT), Office of Rail and Road, Transport Focus, Transport for the North (sub-national transport body) and Network Rail shaped our engagement with customers and neighbours in the London to Scotland East (North) 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 London to Scotland East (North) 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 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 strategic road network (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 London to Scotland East (North) 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*¹⁵ 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 London to Scotland East (North) 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

- There are safety issues on the A1(M) through Durham involving HGVs overtaking
- Standstill traffic at junctions during peak periods queues back onto the motorway, with free-flowing traffic in other lanes
- There are safety concerns on designated SRN Diversion Routes for Unplanned Events (DRUEs), including height and weight restrictions
- There is a lack of crossing points and infrastructure for non-motorised users
- The intersections of the A1(M) and M1, and the M1 and M621 are difficult to navigate and confusing for drivers
- Single carriageway gaps cause issues across the network, including the A66 at Darlington and the A1
- There is a variable route standard on the A1(M) north of Scotch Corner
- There are severance issues for walkers and cyclists crossing the A1 around Newcastle

ii) Views on: Network performance

- Congestion at junctions creates delays on the local road network
- Hotspots for congestion include the A1 west of Newcastle, Tyne crossing, Tees crossing, and seasonal congestion on the A66 approaching Middlesbrough
- There is an unpredictability of journey times
- Incidents and roadworks quickly impact the SRN and local road network across a wide area, which contributes to worsened journey times for public transport
- Communication with local highway authorities is needed to effectively manage disruption, particularly forward planning for the maintenance of SRN assets
- Diversion routes disrupt the operation of the local road network
- An inconsistent route standard causes delays and issues across the network, such as switching between single and dual carriageways
- Increased resilience is needed for strategic north-south movements
- There are heavy traffic flows including HGVs from Junction 59 of A1(M) to A66 east of Darlington using local roads
- There is a need to improve access from the A1 and A66 north of Darlington

¹⁵ Transport Focus (2022) <https://www.transportfocus.org.uk/insight/strategic-roads-user-survey/>

iii) Views on: Improved environmental outcomes

- There are noise complaints on the M1 around Thorpe Hesley
- Congestion on the route negatively impacts upon air quality
- There is a need to ensure the network responds to net zero carbon and environmental ambitions
- Local authority net zero targets need to be considered
- Facilities for wildlife and the protection of environments need to be considered
- Noise pollution is observed due to the volume of traffic, with the local landscape not providing any dilution of the noise, particularly in the winter when the trees are bare
- Future Clean Air Zones and road user charging schemes in urban areas may drive traffic onto the A1 and A19

iv) Views on: Growing the economy

- Congestion currently constrains local development
- Better integration is needed with proposed developments
- Better integration is needed with other transport schemes
- There should be a focus on improving north-south connectivity and connectivity to Scotland
- There is a need to support the levelling up national, regional and local objectives
- There is a need to support economic growth in key growth locations
- This is a key freight route for north-south connectivity
- There are inconsistent and infrequent service facilities for HGVs
- Concern for how the route will cope with future developments and the associated increased demand on the network

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

- Future proofing of the network is required as a result of changes in travel behaviour

vi) Views on: Technology-enabled network

- There is a need to work with local highway authorities regarding information signage provision, and real time information to support network management
- Consideration is needed of future technology requirements, including EV charging infrastructure
- There is a lack of interface between local networks and the Urban Traffic Management and Control Systems at junctions on the SRN
- Improved communication is needed to inform route choice in real time
- There is a need to provide strategic route information for freight routes on the M1 and A1
- Concern around a lack of electric vehicle charging facilities on the route, and that increased electric vehicles on the network in the future would not be met by an increase in charging facilities

Engagement quotes from customers and neighbours**Figure 11:** Quotes from customers and neighbours

Route satisfaction

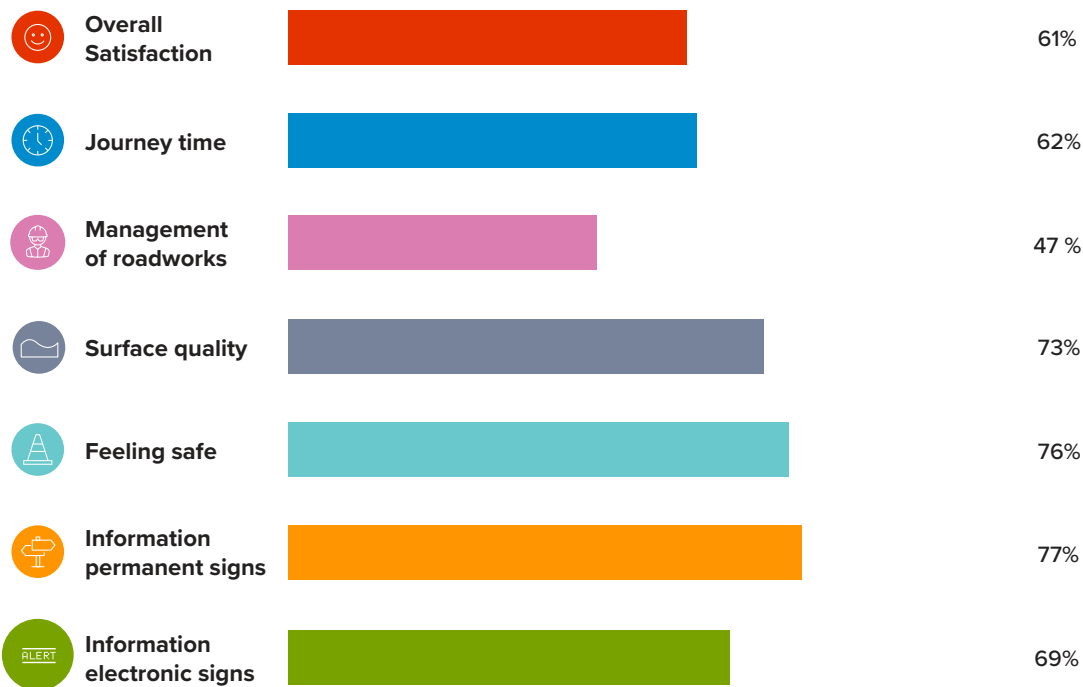
Satisfaction scores have been obtained from Transport Focus through their Strategic Roads User Satisfaction Survey from the last 12 months to May 2022. It covers the roads in this route but it should be noted that the satisfaction scores may not fully align with the extent of the roads in the route.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

Additional comments and data from the Transport Focus survey of drivers on the SRN can be found on the Transport Focus website data hub¹⁶.

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.



Individual road M1, A1(M), A1, A19

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

*** 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



**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. We work closely with the sub-national transport bodies on interdependencies and align our approaches where possible. The sub-national transport body which covers the route is:

- Transport for the North (TfN)

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*¹⁷, and within our *Strategic business plan*¹⁸ and *Delivery plan*¹⁹. 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*²⁰, 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.

¹⁷ Department for Transport (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

¹⁸ National Highways (2020) *Strategic business plan: 2020 – 2025*. <https://nationalhighways.co.uk/strategic-business-plan/>

¹⁹ National Highways (2020) *Delivery plan: 2020 – 2025*. <https://nationalhighways.co.uk/delivery-plan/>

²⁰ National Highways (2021) *Vision for route strategies*. <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 fully as a statutory consultee in the planning system and the evidence collected through the route strategies will support this decision making.

Transport for the North

TfN published its *Strategic Transport Plan (STP)*²¹ in 2019. It is due to be updated by 2024. The Strategic Transport Plan was informed by the 2017 initial *Major Roads Report*²² (published as final in 2021), which maps the MRN in the region, identifying the locally strategic roads vital for economic growth. The objectives of the Plan are:

- transforming economic performance
- increasing efficiency, reliability, integration, and resilience in the transport system
- improving inclusivity, health, and access to opportunities for all
- promoting and enhancing the built, historic, and natural environment

It aims to:

- connect people by improving access to leisure and tourism assets and work opportunities, whilst widening the labour market for businesses
- connect business by improving connections to collaborators, clients and competitors, including those within the prime and enabling capabilities
- move goods by supporting businesses to move freight and goods efficiently and across modes

The STP identifies seven Strategic Development Corridors based around economic links across the North. They are not traditional transport corridors but represent where the largest gaps between demand and performance currently exist, and where there is most potential for growing the economy. The Strategic Development Corridors that are pertinent to the London to Scotland East (North) route are summarised below:

Connecting the Energy Coasts, improving connectivity between some of the UK's important non-carbon energy, advanced manufacturing, research assets and economic centres in Cumbria, Lancashire, North Yorkshire, the North East, the North of Tyne, and Tees Valley.

Yorkshire–Scotland, strengthening road connectivity between the Midlands, South Yorkshire, West Yorkshire, North Yorkshire, East Riding, Tees Valley, the North East, and Scotland, building on the existing road investment commitments.

²¹ Transport for the North (2019) *Strategic Transport Plan*.
<https://transportforthenorth.com/wp-content/uploads/TfN-final-strategic-transport-plan-2019.pdf>

²² Transport for the North (December 2021) *Major Roads Report*.
<https://transportforthenorth.com/reports/major-roads-report-dec-2021/>

The STP is accompanied by TfN's Investment Programme. The Investment Programme offers investment advice to the Government based on what the long-term transport priorities across all modes. The initial Investment Programme identifies what interventions TfN considers will address the current challenges on the transport network. This includes future proofing for where transport demand is envisaged, and where the interventions will stimulate inclusive, sustainable and transformational economic growth.

In 2019, TfN submitted a bid for £700 million investment in the region's roads over the next five years as part of the National Roads Fund. The bid was justified in order to unlock economic growth, deliver new homes, increase active travel, and improve public transport. The MRN and Large Local Major schemes were developed collaboratively with TfN's 20 Local Transport Authorities and 50 Highway Authorities.

TfN also acknowledges the wider context of the climate emergency, with evidence suggesting that the majority of journeys now and in the future will continue to be on the road network, whether by zero emission vehicles, walking, cycling, bus or tram. Reducing greenhouse gas emissions from the transport network is a key priority and TfN's board has recently adopted its *Transport decarbonisation strategy*²³, which sets out a decarbonisation trajectory.

TfN aims to achieve near-zero carbon emissions from surface transport in the North by 2045. The Strategy highlights the opportunity to support the clean energy industry through possible transport improvements within the region.

The TfN board also recently endorsed the updated Major roads report. This report draws on evidence and policy within TfN's Strategic transport plan, work on future travel scenarios, the *Transport decarbonisation strategy* and the *Freight and logistics strategy*²⁴. It represents a position statement in support of TfN's statutory functions.

²³ Transport for the North (2021) *Transport Decarbonisation Strategy*.

https://transportforthenorth.com/wp-content/uploads/TfN-Transport-Decarbonisation-Strategy-FINAL-TfNDEC2021_V2.pdf

²⁴ Transport for the North (2021) *Draft Freight and Logistics Strategy*.

<https://transportforthenorth.com/wp-content/uploads/Freight-Strategy-Master-Consultation-version-v0.1.pdf>

Interaction with the major road network and local roads

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

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

It is therefore important that decisions about the SRN, MRN and other local roads are made in a joined-up way to ensure that the networks are consistent, coherent and complementary.

We recognise that the key to the success of the RIS 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.

Within the London to Scotland East (North) area, the key roads on the MRN are:

- the A61 that links North and South Yorkshire through Sheffield, Barnsley, Wakefield, Leeds and Harrogate
- the A19 that links Thirsk, York and Selby
- the A170 that links Thirsk and Scarborough
- the A66 (de-trunked section) and the A1085, which combine to link the SRN to Teesport and Redcar on the East Coast
- the A689 that links Hartlepool on the East Coast to Carlisle in the West through the North Pennines AONB
- the A690 that links Sunderland and Durham

Other roads on the MRN that link Newcastle to the East and North East are the A184 and A194, the A1058 and A189.

Within this area there are four established Mayoral Combined Authorities in South Yorkshire, West Yorkshire, Tees Valley Combined Authority and North of Tyne. As part of the Government's City Region Sustainable Transport Settlements fund, South Yorkshire has been allocated £570 million, West Yorkshire £830 million and Tees Valley £310 million for local transport improvements.

Some of these schemes may interact with the SRN and we will work with the relevant Mayoral Combined Authorities to ensure these interact with the SRN effectively.

Freight and logistics

The future of freight: A long-term plan (DfT June 2022)²⁵ sets out priorities for the UK's freight industry. It recognises that in 2019 the sector contributed 10% of the UK non-financial business economy and £127 billion gross value added (GVA) through more than 200,000 enterprises, noting that, with imports and exports comprising 63% of GDP in 2019, we are reliant on the freight and logistics sector for our economic wellbeing.

²⁵ Department for Transport (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

The North of England's transport network is extensive and encompasses rail, road, inland waterways, sea and air infrastructure. In addition, there is a significant volume of warehousing, particularly around Liverpool, Manchester, Newcastle and Leeds.

The transport infrastructure supports a Northern population of over 15.5 million people across a 38,000 square kilometre area²⁶. Prior to the impact of Covid-19 there were 7.4 million jobs in the region²⁷. The North of England contributes over £364 billion GVA towards the UK economy²⁸.

Freight accounts for 9% of the country's gross domestic product (GDP) and supports all industries by providing access to goods and services. In the UK a total of approximately 1.65 billion tonnes of freight are lifted by all modes per annum. Over a third of freight tonnes lifted comes from the Northern Ports, covering both international and domestic traffic.

The route boasts a wealth of freight assets that give the North a strong freight capability across transport modes, which include:

- Port of Tyne, Teesport, and ports in Northumberland
- international airports, including Leeds Bradford, Teesside and Newcastle
- two Strategic Rail Freight Interchanges (distribution centres with intermodal terminals) at Wakefield and Selby, with more emerging
- two further intermodal terminals at Leeds and Doncaster

- a strategic rail network incorporating the East Coast Main Line
- a significant amount of distribution centre capacity
- rail branch lines to Immingham, Hull, Scarborough and Teesside (Teesport), Port of Tyne and Port of Sunderland

Despite these assets being available, many are not being fully utilised. This is due to a lack of joined-up infrastructure and alternative logistics solutions being more attractive. Addressing gaps across the network would help support multimodal capabilities. Given that 80% of road freight in the North is domestic traffic²⁹, most of which is short haul (making it difficult to justify the use of rail on commercial or efficiency grounds) addressing these gaps in connectivity would benefit operation across the SRN.

The Department of Transport's 2017 *National survey of lorry parking*³⁰, showed that the North East and Yorkshire & Humber regions (which cover the London to Scotland East (North) route area) were identified as needing increased parking facilities. In the North East, it was estimated that 25% of practical additional spaces are needed, equivalent to 31 lorry parking spaces. For the Yorkshire & Humber region, it was estimated that 20% of practical additional spaces are needed, equivalent to 142 lorry parking spaces. The survey defines a lorry park being, in practice, full at 85% capacity due to the size and positioning of vehicles and difficulty manoeuvring.

26 Office for National Statistics (2021) *Estimates of the population for the UK, England and Wales, Scotland and Northern Ireland: Mid-2020: 2021 local authority boundaries*.

<https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/populationestimatesforukenglandandwalesscotlandandnorthernireland>

27 Office for National Statistics (May 2021) *Labour Force Survey (Jan-Mar 2020)*. <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/datasets/headlinelabourforcesurveyindicatorsforallregionshi00>

28 Office for National Statistics (2021) *Regional Gross Value Added (balanced) by industry: all ITL regions*. <https://www.ons.gov.uk/economy/grossvalueaddedgva/datasets/nominalandrealregionalgrossvalueaddedbalancedbyindustry>

29 Transport for the North (2016) *Northern Freight and Logistics Report*. <https://www.transportforthenorth.com/wp-content/uploads/TfN-Freight-and-Logistics-Report.pdf>

30 Department for Transport (Aecom, 2017) *National Survey of Lorry Parking*. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/723349/national-survey-of-lorry-parking-report.pdf

Diversions 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.

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 for 2019-2024*³¹ presents a vision of “putting passengers and freight users first”, recognising that Network Rail can improve the daily lives of people across the country by striving to constantly improve the quality of 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 stakeholders, more quickly than if such decisions were to be made at a national level.

³¹ Network Rail (2022) *Our delivery plan for 2019 – 2024*.

<https://www.networkrail.co.uk/who-we-are/publications-and-resources/our-delivery-plan-for-2019-2024/>

The Network Rail *Eastern regional strategic plan*³² sets a vision to get people and goods to where they need to be, while supporting the country's prosperity. The key investments and priorities in Network Rail's North and East Route include:

- transform the passenger experience at Leeds Station
- Trans-Pennine Route Upgrade – designed to help unlock the congested route between York and Manchester, bringing benefits to communities across the North of England
- station improvement schemes – improve capacity and facilities at Middlesbrough and Sunderland

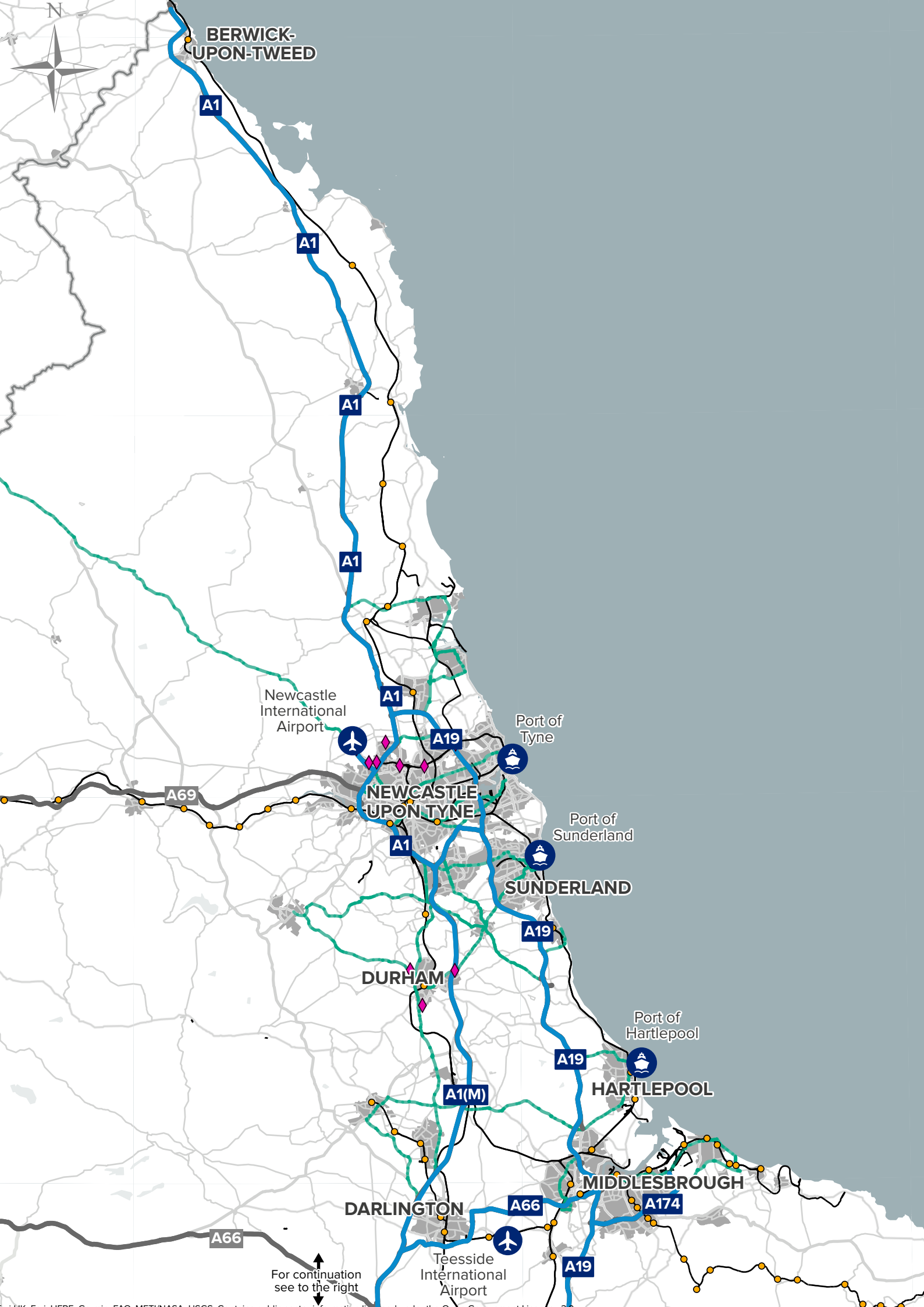
The key locations of the East Coast Route include Newcastle and Darlington. The East Coast Main Line Upgrade is one of the key priorities on this route.

For the London to Scotland East (North) route, the key stations on the rail network are Sheffield, Leeds and Newcastle, each of which had over 8 million entries and exits in 2019-2020³³. Other major stations include Barnsley, Wakefield Westgate, Darlington, Middlesbrough and Durham, each of which had over one million entries and exits in 2019-2020. National Highways understands the role of the SRN in facilitating access to and from these key facilities. This is further explored in Chapter 6: Initial Route Objectives.

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.

³² Network Rail (2021) *Eastern Regional Strategic Plan*. <https://www.networkrail.co.uk/wp-content/uploads/2021/05/Eastern-Strategic-Plan.pdf>

³³ Office of Rail and Road (2021) *Estimates of station usage*. <https://dataportal.orr.gov.uk/statistics/usage/estimates-of-station-usage>



BERWICK-UPON-TWEED

A1

A1

A1

A1

A1

A19

NEWCASTLE UPON TYNE

Port of Tyne

Port of Sunderland

SUNDERLAND

A1

A19

DURHAM

Port of Hartlepool

HARTLEPOOL

A1(M)

A19

MIDDLESBROUGH

DARLINGTON

A66

A174

Teesside International Airport

A66

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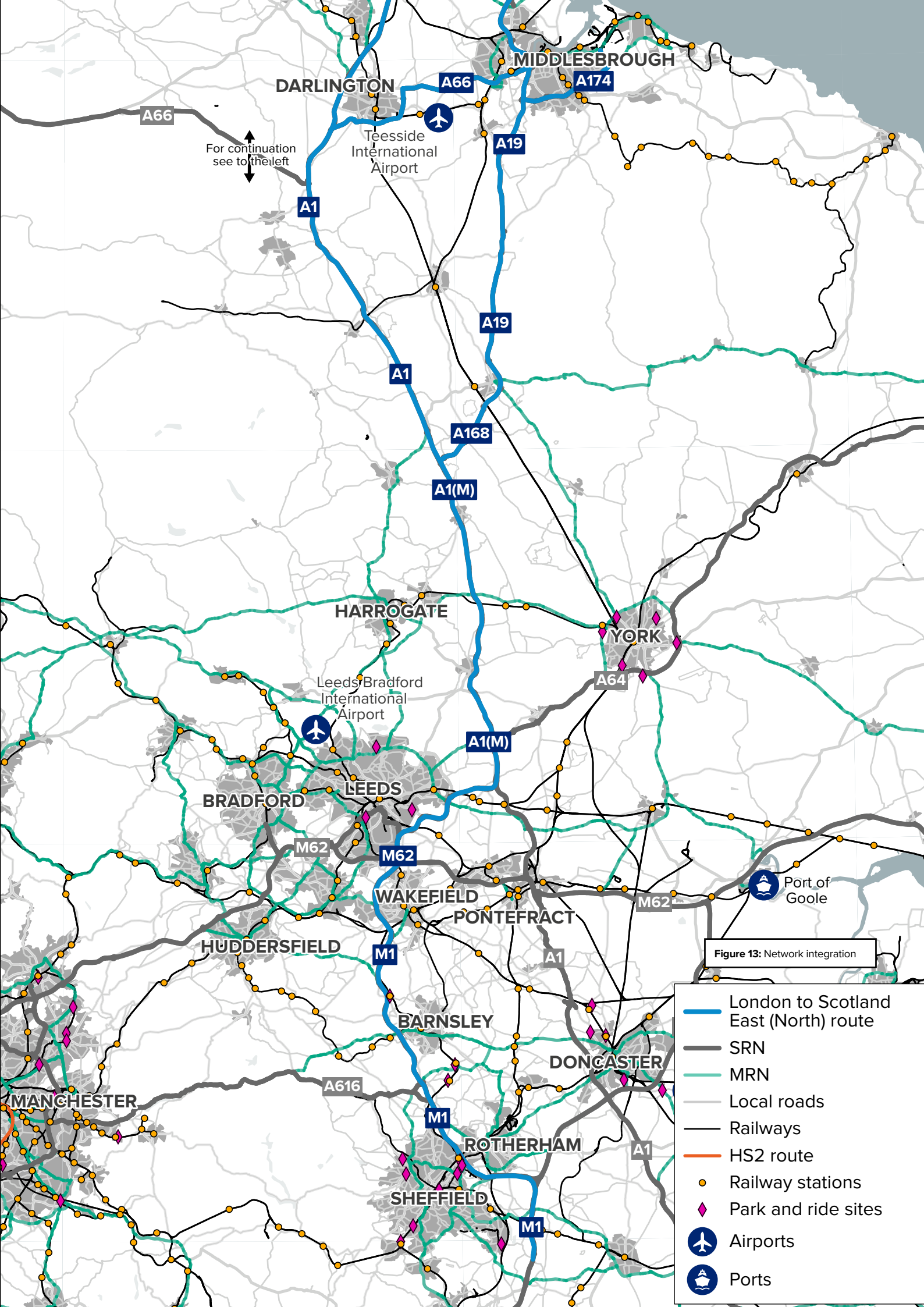


Figure 13: Network integration

- London to Scotland East (North) route
- SRN
- MRN
- Local roads
- Railways
- HS2 route
- Railway stations
- ◆ Park and ride sites
- ✈ Airports
- ⚓ Ports

For continuation see to the left

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*³⁴ 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.

For the London to Scotland East (North) route, the A1 provides a direct connection from Leeds to Berwick-upon-Tweed at the Scottish border, and further extends to Edinburgh. To the south, the M1 directly connects Leeds to London. The M1 and the A1 play a key strategic role in the north-south movement of both passengers and freight. The SRN is considered vital within this broader context.

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.

On the London to Scotland East (North) route, the SRN provides connectivity to Leeds Bradford Airport, Teesside Airport and Newcastle Airport, all of which are international airports. The A19 provides connections directly, as well as via the A66 to Teesport, which is the fifth largest port in the UK and facilitates the movement of over 28 million tonnes of cargo annually.³⁵

³⁴ Sir Peter Hendy CBE (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

³⁵ Teesport. <https://www.teesport.co.uk/>





**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 DfT'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 NTIS (National Traffic Information Service) 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.

Road Safety Foundation (RSF) produce 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.

As shown in Figure 14, using the latest available data it shows that several sections of the route received a star rating of 2 (medium-high risk road) and many short sections received a star rating of 1 (high-risk road). These locations are:

- A66: Stapleton Bank roundabout to Great Burdon (1-star)
- A19: Elwick to Wingate, Hawthorn, and Boldon (2-star)
- A1: Fulbeck to Alnwick, to the north of Newcastle (2-star)
- A1: Brownieside and Berwick-upon-Tweed (North) (1-star and 2-star)

Figure 15 shows the number of people who were killed or seriously injured on the route from 2015-2018, based on the latest available STATS19 data. According to the STATS19 data, there are concentrations of recorded collisions on the following sections of the route:

- A19 to the west of Sunderland, which is the area with the highest density of collisions on the route
- A1: northbound and southbound between Brownieside and Berwick-upon-Tweed, with the southbound section also having the highest occurrence of collisions involving walkers, cyclists or horse riders on the route
- A1(M) and A66: eastbound between Greta Bridge and Scotch Corner, around Junction 53
- A1(M): northbound between Junctions 48 and 49

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

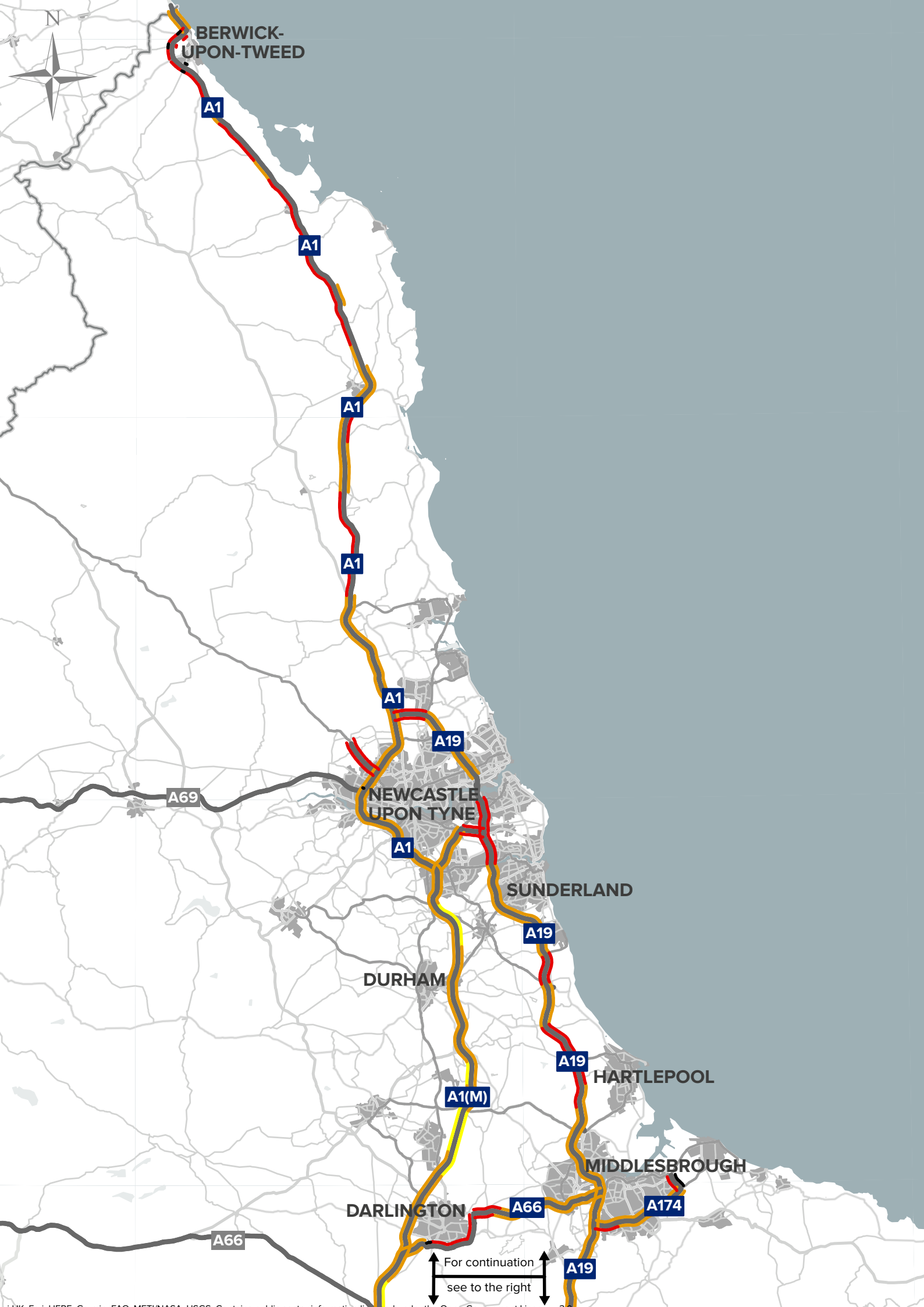
Using the latest RSF Crash Risk Map data, it is apparent that the M1 from Junction 32 with the M18 near Thurcroft, through Sheffield, Barnsley, Wakefield and Leeds, to Junction 48 with the A1(M) near Hook Moor experiences a higher number of collisions involving walkers, cyclists and horse riders (WCH).

In terms of motorcyclist crash density, the section of the A1 to the west of Newcastle between Junction 74 and Junction 78 is at a relatively higher risk of collisions. Similarly, the section of the A19 from Testos roundabout to Seaham experiences a higher number of motorcycle collisions. Both of these sections currently experience medium to high levels of average delay.

Key challenges

- Sections of the A66, A19 and the A1 received an iRAP star rating of 2 or 1
- Several sections of the A1, A1(M) and A19 experience concentrations of collisions where people have been killed or seriously injured





BERWICK-UPON-TWEED

A1

A1

A1

A1

A1

A19

A69

NEWCASTLE UPON TYNE

A1

SUNDERLAND

A19

DURHAM

A19

HARTLEPOOL

A1(M)

MIDDLESBROUGH

DARLINGTON

A66

A174

A66

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A19

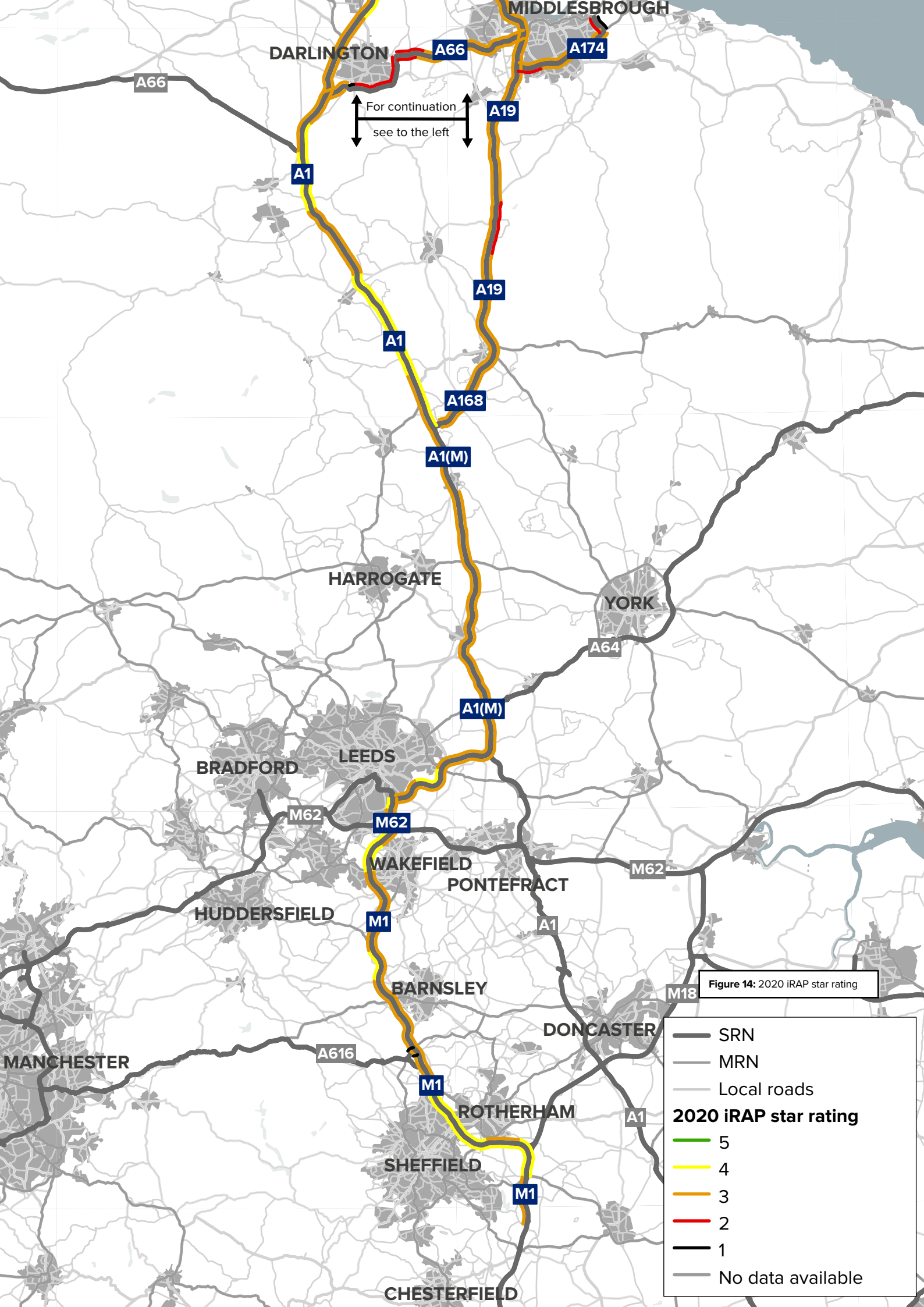
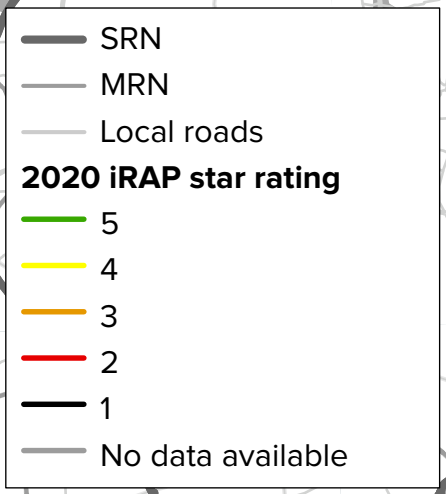
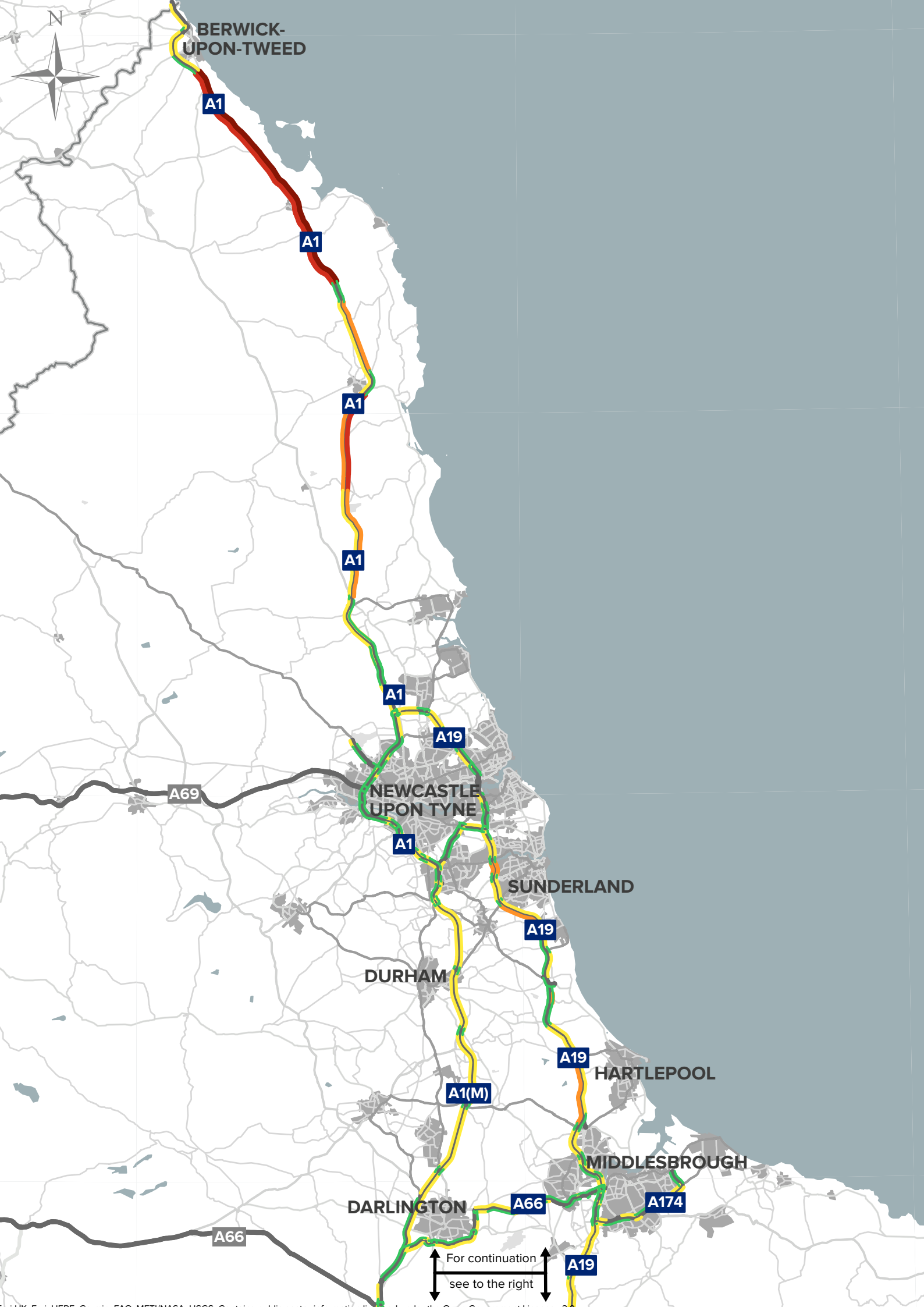


Figure 14: 2020 iRAP star rating





BERWICK-UPON-TWEED

A1

A1

A1

A1

A1

A19

A69

NEWCASTLE UPON TYNE

A1

SUNDERLAND

A19

DURHAM

A19

HARTLEPOOL

A1(M)

MIDDLESBROUGH

DARLINGTON

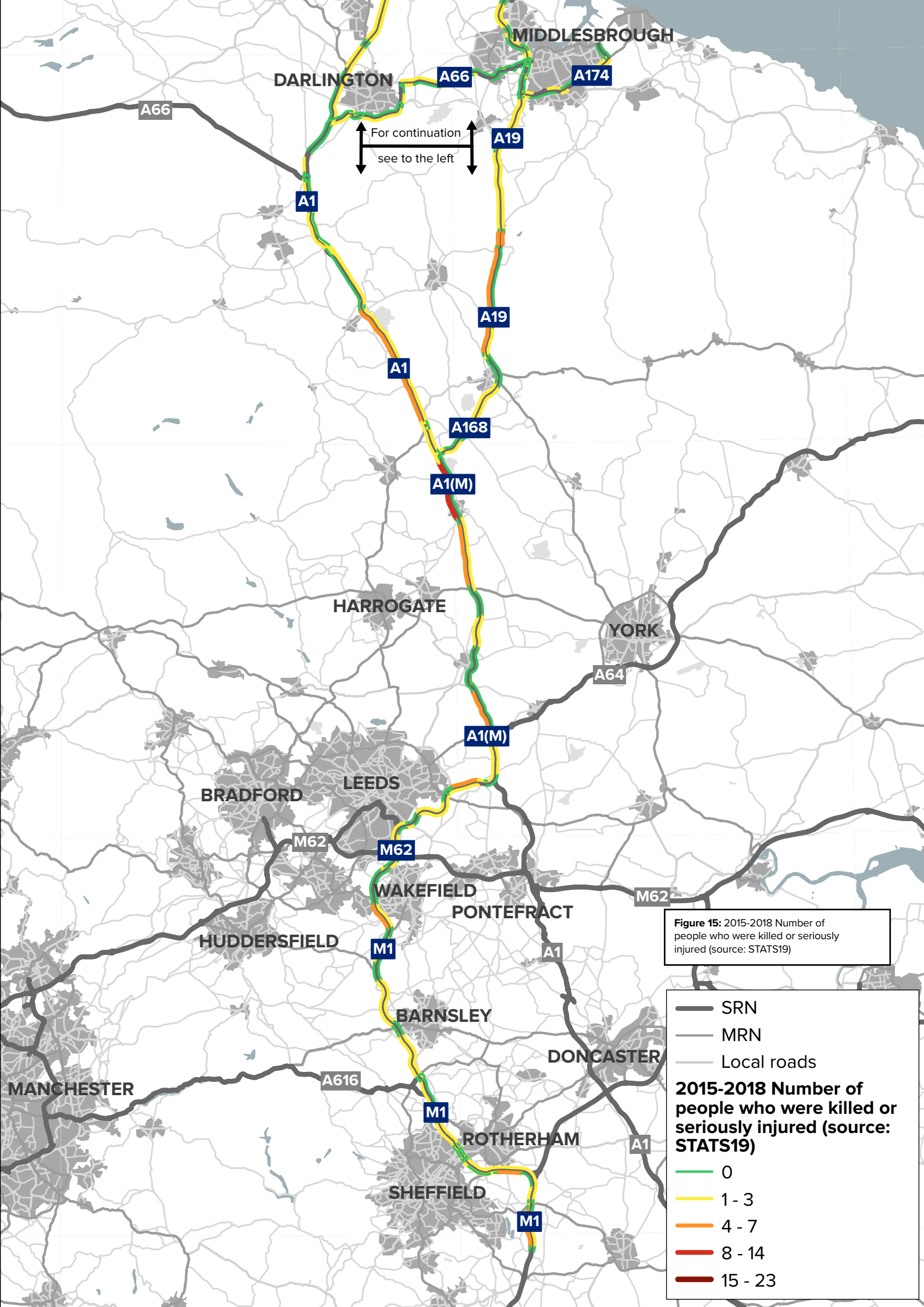
A66

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DARLINGTON

MIDDLESBROUGH

A66

A66

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A1

A19

A1

A19

A168

A1(M)

HARROGATE

YORK

A64

A1(M)

BRADFORD

LEEDS

M62

M62

WAKEFIELD

PONTEFRACT

M62

HUDDERSFIELD

M1

A1

BARNSELY

DONCASTER

A616

M1

ROTHERHAM

A1

SHEFFIELD

M1

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

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

- 0
- 1 - 3
- 4 - 7
- 8 - 14
- 15 - 23



2. Network performance

Network performance is measured by average peak period delay in the morning or afternoon, seasonal delay, and journey time reliability. Many sections of the London to Scotland East (North) route experience one or more of these types of delay.

The morning peak average delay from NTIS in 2019 is shown in the delay map presented in Figure 16.

As shown in Figure 16, delay is evident at several locations along the route, including:

- the M1 where it meets the A616 that connects to the Peak District National Park (which experiences afternoon peak period delay of up to 137 seconds per vehicle per mile)
- the A174 which leads to the North York Moors National Park (which experiences afternoon peak period delay of up to 101 seconds per vehicle per mile)
- the A1(M) to the south of Wetherby (which experiences seasonal peak delay of up to 58 seconds per vehicle per mile)
- whilst most acute in the Newcastle area, congestion affects the A1 throughout its whole length with only a few sections achieving relatively free flowing conditions at peak times

Interested parties have said that variable road standards along the route have an impact on journey time reliability when dual carriageway sections change to single carriageway sections.

Apart from daily commuting, seasonal variation in demand due to tourism places additional pressure on the route at certain times of year. The London to Scotland East (North) route provides access to several key tourist destinations, such as National Parks, AONBs and coastal towns and cities where tourism is a key component of the local economy. These destinations attract additional visitor journeys during peak holiday periods, increasing congestion. For example, the M1, A1 (including the M1/A1 intersection), southern part of the A1(M), and the A66 experience seasonal variations in demand due to tourism, with some consequential congestion and journey time unreliability during the summer peak periods. This issue affects the daily commuters on the route, and existing and potential visitors using the route for journeys relating to leisure.

Collisions or planned roadworks can create disruption on the network, and a reliance on diversion routes. Some of the Diversion Routes for Unplanned Events (DRUEs) are less suitable for HGVs in locations such as Wakefield, Darlington and Stockton-on-Tees, resulting in congestion and environmental impacts.

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

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

traffic, particularly people travelling to airports, or other destinations where arriving later than intended could have significant implications.

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

Congestion and a lack of journey time reliability contribute to reduced productivity and constrain the local, regional and national economies.

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. 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.

The RTM output for 2031 has been geo-referenced onto the NTIS network to allow a comparison between 2019 observed delay and the RTM 2031 forecast delay. Morning peak average delay is defined as the journey time in excess of the theoretical minimum journey time on the link.

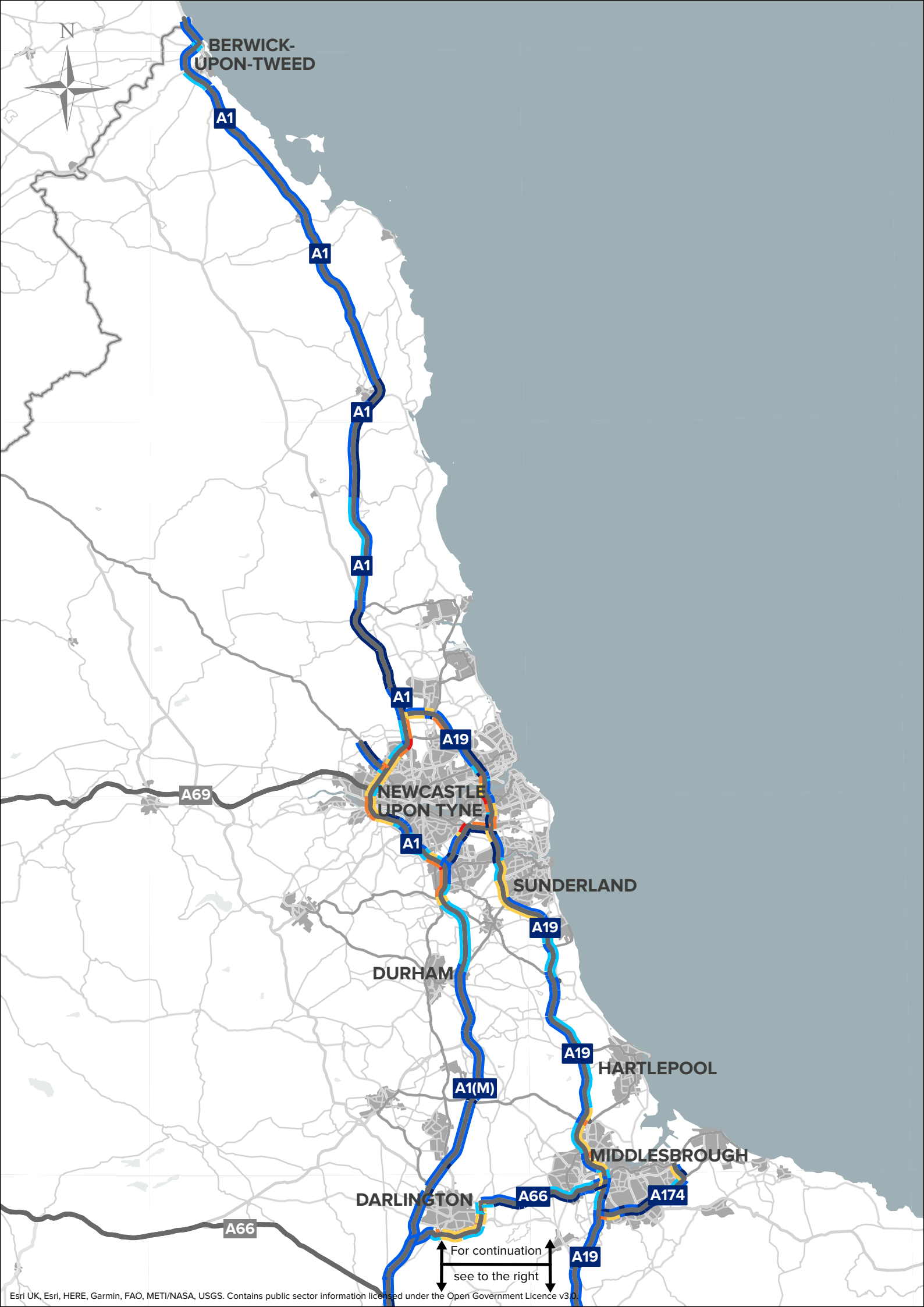
The morning peak average delay from RTMs forecast for 2031 is shown in the delay map presented in Figure 17.

As shown in Figure 17, by 2031, several sections of the A1 are forecast to experience delay. Considering the projected growth in traffic in future years with proposed housing and employment developments adding potential significant demand on to the network, this is a key issue on the route.

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

Key challenges

- Localised delays across the London to Scotland East (North) route, particularly on the A1(M)
- Journey time unreliability resulting from seasonal variation in demand, particularly where the A1(M) and the M1 provide access to tourist destinations
- Sections of the A1 expected to be near capacity in 2031 due to housing and employment growth, which will cause delays



BERWICK-UPON-TWEED

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A1

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A19

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NEWCASTLE UPON TYNE

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SUNDERLAND

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DURHAM

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HARTLEPOOL

A1(M)

MIDDLESBROUGH

DARLINGTON

A66

A174

A66

A19

For continuation
see to the right

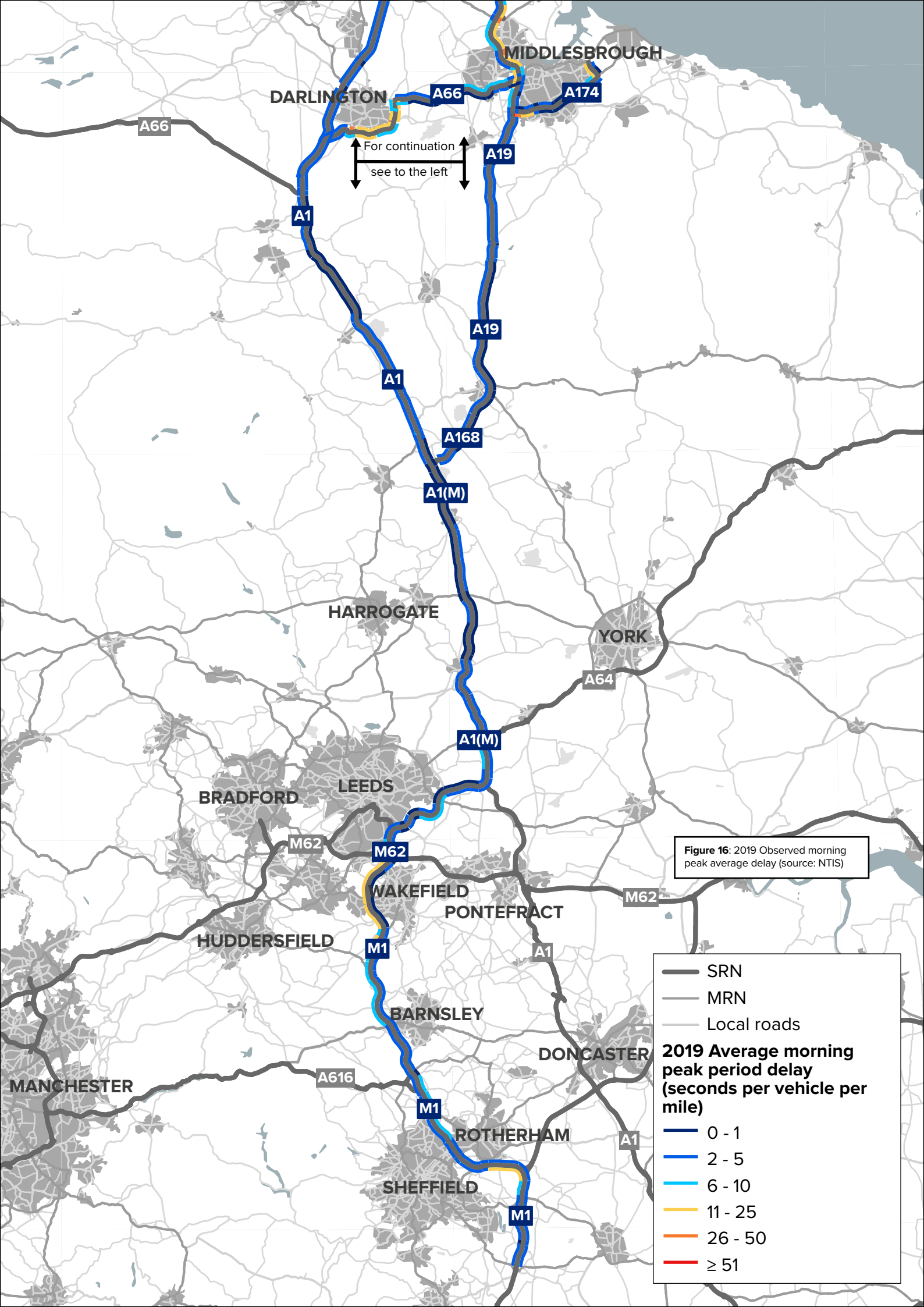
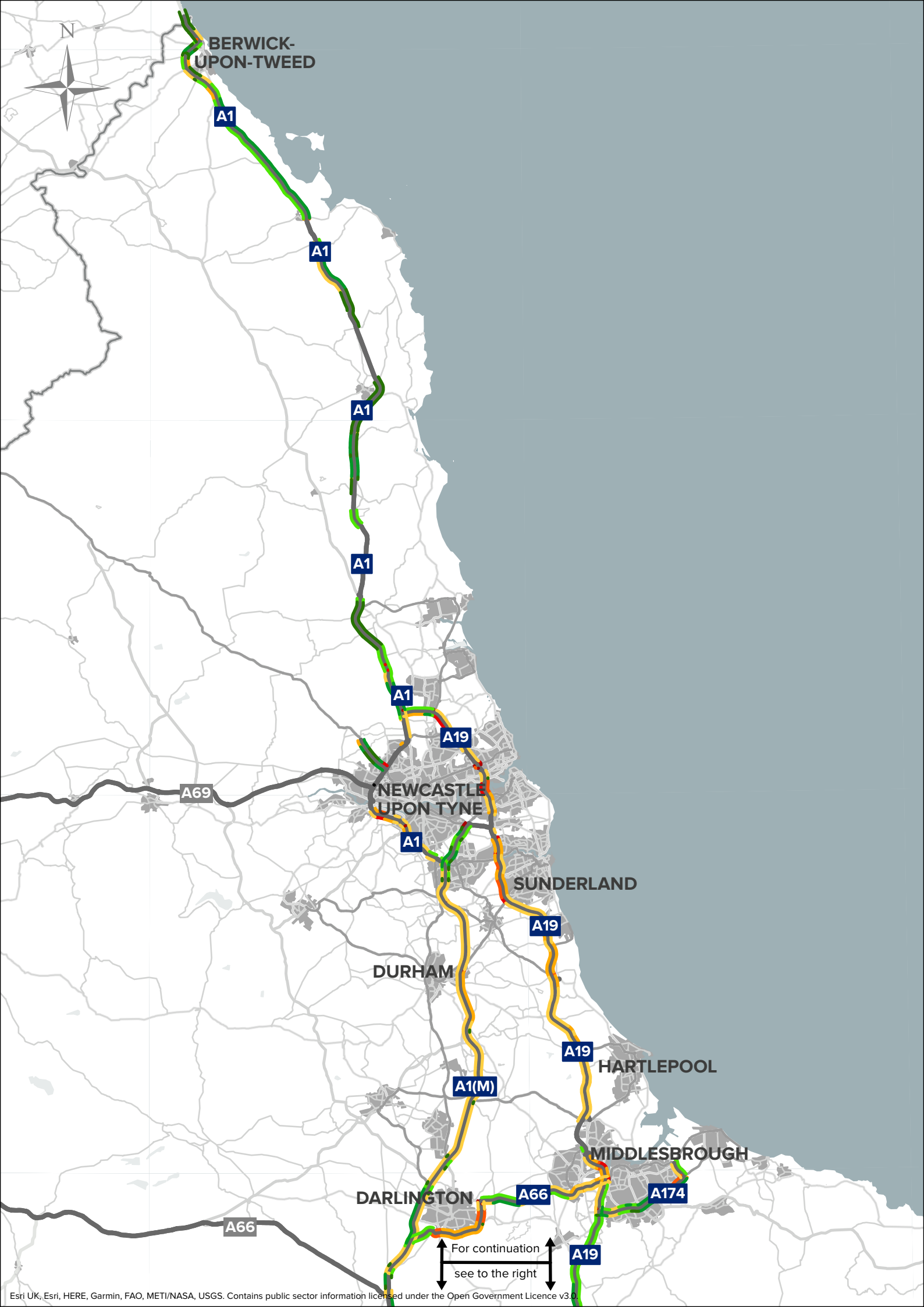


Figure 16: 2019 Observed morning peak average delay (source: NTIS)

— 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



BERWICK-UPON-TWEED

A1

A1

A1

A1

A1

A19

A69

NEWCASTLE UPON TYNE

A1

SUNDERLAND

A19

DURHAM

A19

HARTLEPOOL

A1(M)

MIDDLESBROUGH

DARLINGTON

A66

A174

A66

A19

For continuation
see to the right

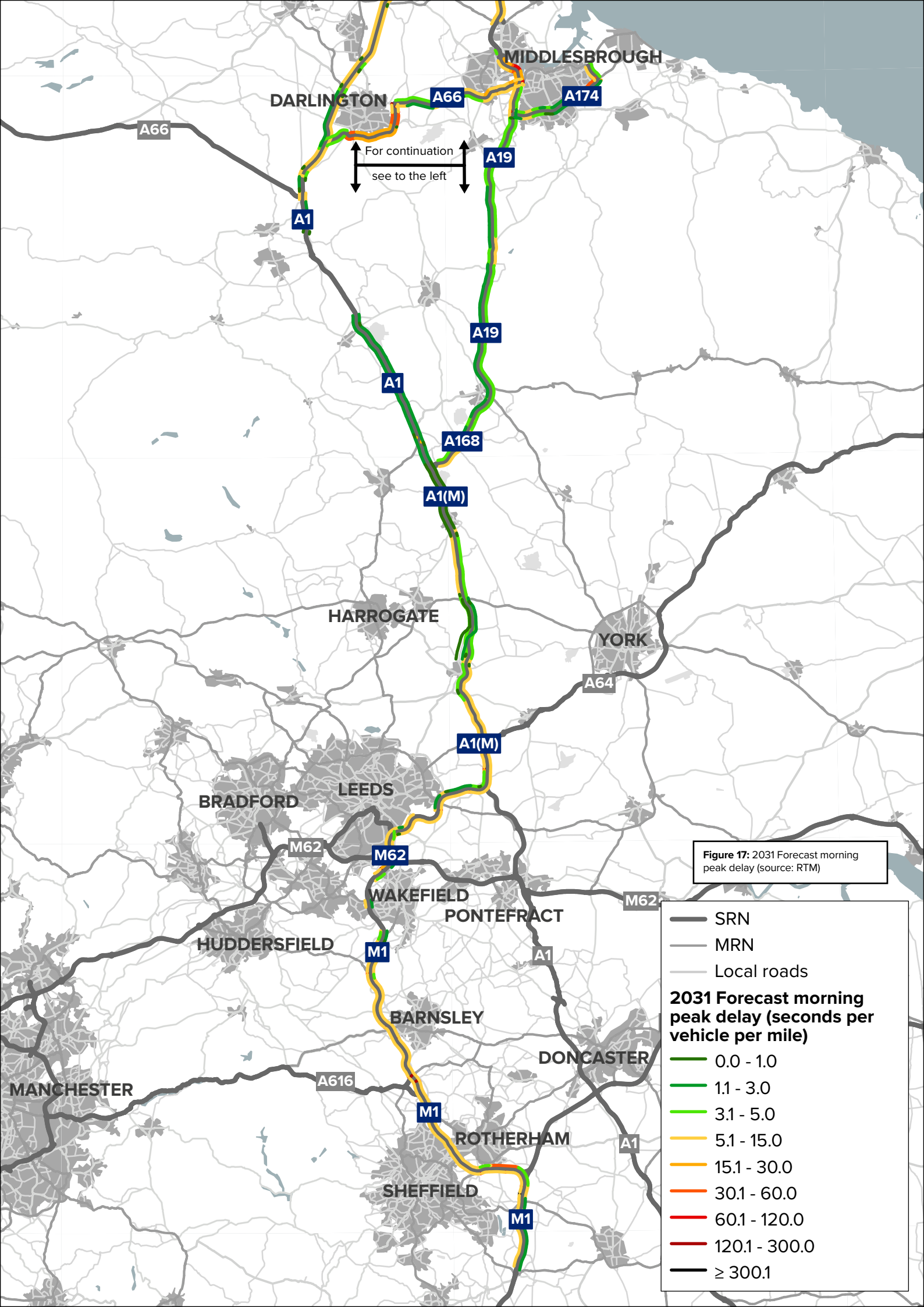


Figure 17: 2031 Forecast morning peak delay (source: RTM)

	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

For continuation
see to the left



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 SRN, we need to show both how we can help tackle the causes of climate change and how we are preparing for a changing climate. In 2021 we published our *Net zero highways plan*³⁶ 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 third and most recent independent assessment of climate risk³⁷, 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 the London to Scotland East (North) route. In

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

the future, we will also need to consider better integration with other transport modes and how to support the transition to electric cars and zero carbon heavy goods vehicles (HGVs).

Some of the route passes next to and through National Parks or ancient woodland, as well as neighbouring a number of AONBs. The A1 and the A19 form key gateways to several National Parks, Sites of Special Scientific Interest, cultural heritage sites, Natura 2000 sites (biodiverse areas that are protected in Europe), RAMSAR sites (wetlands of international importance), and special areas of conservation. The route has a key role to play in supporting sustainable development in such sensitive locations. Some locations along the route are intersected by areas considered to be at higher risk of flooding from surface water³⁸, where predicted increases in winter rainfall, sea level rise and warmer temperatures are likely to further increase the risk of flooding. Such locations include Berwick upon Tweed, Cheswick to Bamburgh, Alnwick, and Darlington.

Congestion and traffic queueing on the route may lead to adverse environmental impacts, such as emission of greenhouse gases and other pollutants, as well as noise impacts.

of societal activities, it can have serious implications for human health, quality of life, economic prosperity and the natural environment. 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.

³⁶ 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>

³⁷ Climate Change Committee (2021) *Independent Assessment of UK Climate Risk*.

<https://www.theccc.org.uk/publication/independent-assessment-of-uk-climate-risk/>

³⁸ <https://check-long-term-flood-risk.service.gov.uk/map>

There are receptors within 100 metres of the SRN which may be more likely to experience adverse air quality impacts, including sections of the A1, A1(M), A19, A66 and the M1. Some of the locations with a higher concentration of receptors include the northern and southern ends of the section of the A1 to the west of Newcastle (between Junctions 65 and 80), the section of the route to the east of Durham between Junctions 61 and 62 of the A1(M), and two sections of the M1 between Sheffield and Rotherham, between Junctions 33 and 35.

Additionally, the route is within Air Quality Management Areas (AQMAs) in Wakefield, Sheffield and between Junctions 32 and 42 of the M1.

There are receptors within 300 metres of the SRN which may be more sensitive to high noise levels, including around the A1 to the west of Newcastle, around the A1(M) to the east of Durham and the east of Wetherby, the M1 to the west of Barnsley and also between Sheffield and Rotherham.

A number of sections of the route between Sheffield and Newcastle fall within various Noise Important Areas (NIAs), such as around Newcastle, Durham, Wetherby, and between Junctions 32 and 42 of the M1. NIAs for roads are based on the Department for Environment, Food and Rural Affairs' strategic noise maps results³⁹ and have been produced in line with the requirements set out in the noise action plans.

The reliance upon private cars can potentially contribute to congestion and may exacerbate negative environmental impacts along the route. All districts covered by the London to Scotland East (North) route are dominated by car travel, based on commuting patterns. Shifting to active travel modes for shorter journeys, particularly in towns and city centres such as Leeds and Newcastle, and to public transport for longer journeys, could help mitigate these issues.

As raised by interested parties, the route currently presents a number of challenges to active travel in terms of the severance effect on walking and cycling networks.

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

In places, the route creates a physical barrier, meaning that active mode users need to navigate heavily trafficked junctions. This is reflected in the Planning ahead for the Strategic Road Network report⁴⁰, published by the Department for Transport in December 2021, which states that action on the SRN will support and make active travel easier and more attractive to use.

Further to this, the high proportion of HGVs using the route also contributes to the environmental impacts. In the 12-month period ending June 2021, 17.8 billion vehicle kilometres were travelled by GB-registered HGVs operating in the UK, with the average length of haul being 108 kilometres⁴¹.

Key challenges

- Risk of poor air quality and noise at receptors lying close to parts of the A1(M) and M1
- Risk of flooding from surface water at some north-eastern sections of the route
- Limits to possible use of sustainable modes for short trips, as parts of the route cause severance to active travel routes
- Maintaining and protecting areas of outstanding natural beauty, areas with environmental designations and cultural heritage
- Minimising greenhouse gas emissions
- Building resilience to future climate change

³⁹ Department for Environment, Food & Rural Affairs (2019) *Strategic noise mapping (2017)*. <https://www.gov.uk/government/publications/strategic-noise-mapping-2019>

⁴⁰ Department for Transport (2021) *Planning ahead for the Strategic Road Network*. 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

⁴¹ Department for Transport (2022) *Road freight statistics: July 2020 to June 2021*. <https://www.gov.uk/government/statistics/road-freight-statistics-july-2020-to-june-2021>



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 route provides north-south connectivity across the north of England and to Scotland. It therefore has a critical economic function in supporting the UK Government's levelling up goals and the vision of the sub-national transport body, Transport for the North (TfN) to achieve a thriving North of England, where world class transport supports sustainable economic growth, excellent quality of life and improved opportunities for all. To the south, the route links with both the London to Scotland East (South) and London to Leeds routes, providing strategic connections to the capital and key locations in the wider network.

The A1(M), north of the interchange with the M1, provides a vital strategic link to the rest of the UK for those situated in the north east of England. The route also provides cross-border connectivity between England and Scotland, facilitating the movement of goods and people. 15% of HGV traffic between England and Scotland uses this route.

There are significant new employment, housing and mixed-use sites close to the route. Some of the proposed sites are in North Tyneside close to the A19, in Barnsley next to the M1, in Darlington, Flaxby, Harrogate, Knaresborough and Ripon. The route also provides access to key employment sites, such as the Leeds Enterprise Zone and Advanced Manufacturing and Innovation District in Sheffield, which both stimulate the regional economies. The Teesside Freeport sites are located within 30 kilometres of the A19. The congestion and journey time reliability issues noted previously inhibit the efficient movement of freight – as well as passengers – to and from these destinations.

Several areas connected by the route, such as Rotherham, Wakefield, Leeds, Durham, Newcastle and Northumberland fall under the Government's levelling up category 1, meaning they are considered priority areas for the Levelling Up Fund. These areas also have a significant proportion of their gross value added (GVA) linked to the SRN. This is particularly true for freight and goods, including through imports and exports. Between Junction 33 and Junction 34 of the M1, HGVs account for 20% of total traffic. This is also true of the section between Junction 45 and Junction 51 of the A1. The high proportion of HGVs using the route shows its strategic importance for freight movement and for servicing the regional and national economy.

The route also serves a high number of visitor journeys to key tourist destinations in the North, such as the Northumberland National Park, the Nidderdale AONB, the Yorkshire Dales National Park, North Pennines AONB, Northumberland Coast AONB, the North York Moors National Park, and to coastal towns and cities in the North East where tourism is a key part of the economy. Nationally, the combined GVA of National Parks and AONBs is more than £20 billion⁴². Due to the limited public transport connecting these areas, visitors rely on the route, and it plays a key role in supporting the visitor economy.

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

Key challenges

- North-south connectivity enabled by the route, which plays a key role in supporting economic growth in the North
- Significant employment and housing growth projected in the region between Sheffield and East Scotland, which the route will facilitate access to
- Significant proportion of GVA linked to the SRN at certain parts of the route, particularly related to freight and goods
- Priority areas for levelling up at several locations along the route
- Reliance on route by visitors to National Parks and AONBs

⁴² National Parks England (2015) *So much more than the view...England's Areas of Outstanding Natural Beauty and National Parks*. https://www.nationalparksengland.org.uk/_data/assets/pdf_file/0027/26784/So-much-more-pdf-without-navigation-bar.pdf



5. Managing and planning the SRN for the future

Maintaining the strategic road network

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

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

Road surface

The measure for road surface condition has been updated for 2022/23 onwards. The condition is reported as one of our Key Performance Indicators and shows the condition of all available lanes of the main carriageway (excluding DBFO lengths) based on 3 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 1,550 lane-kilometres of road surfacing. The surface condition across the route is considered to be sound, with 97% of pavement asset not requiring investigation for possible maintenance.

Bridges and structures

There are 1,304 structures across the route, including bridges and large culverts. According to an analysis of current data, 90% of our structures are in very good or good condition. By carrying out inspections of each individual structure every two years, we identify any defects that may require maintenance, thereby helping to ensure that structural components are replaced before they fail.

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

We have identified significant structures renewals for RIS3, and these schemes affect 8 structures in this route.

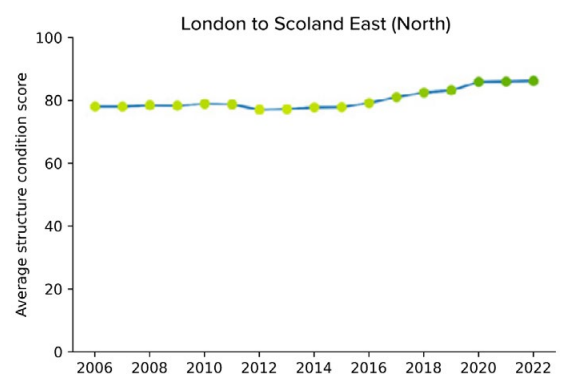


Figure 18: Average condition scores of structures, since 2006

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 next road period. 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 SRN's geotechnical assets
- Ensuring that drainage assets are maintained so that their good structural and service conditions can be upheld



The average condition of the structures on each of National Highways' Routes is either 'Good' or 'Very Good'



The average condition score is the aggregated result of structural components, into a single metric, accounting for the relative importance and size of each component. A score of 100 indicates perfect (as new) condition.

There are no Routes with an average condition score below 70.



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 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 quality of journey experience
- allow people to make more informed travel choices, including about when and how to travel

A technology-enabled network is one that is able to support electric vehicles through the regular provision of quality charging points, as well as one that uses technology to improve communication and safety for road users.

Overall, the current provision of electric vehicle charging points is limited on the route, with charging points found between 10 and 60 miles apart. There are a number of charging points at motorway services on the M1 and A1(M), and further charging points adjacent to the route, though more so in densely populated areas, including Sheffield and Newcastle. On trunk roads, such as the A1 North of Newcastle and A19, the provision of charging points is more limited. This may have a detrimental impact on the uptake of electric vehicles on this route.

We will support improved communication and facilities for all

The Government's March 2022 *Electric vehicle infrastructure strategy*⁴³ sets out a vision for 2030 where charging infrastructure will be removed as both a perceived and real barrier to the adoption of electric vehicles. The Strategy outlines the intention to accelerate the rollout of high-powered chargers on the SRN through the £950 million Rapid Charging Fund⁴⁴.

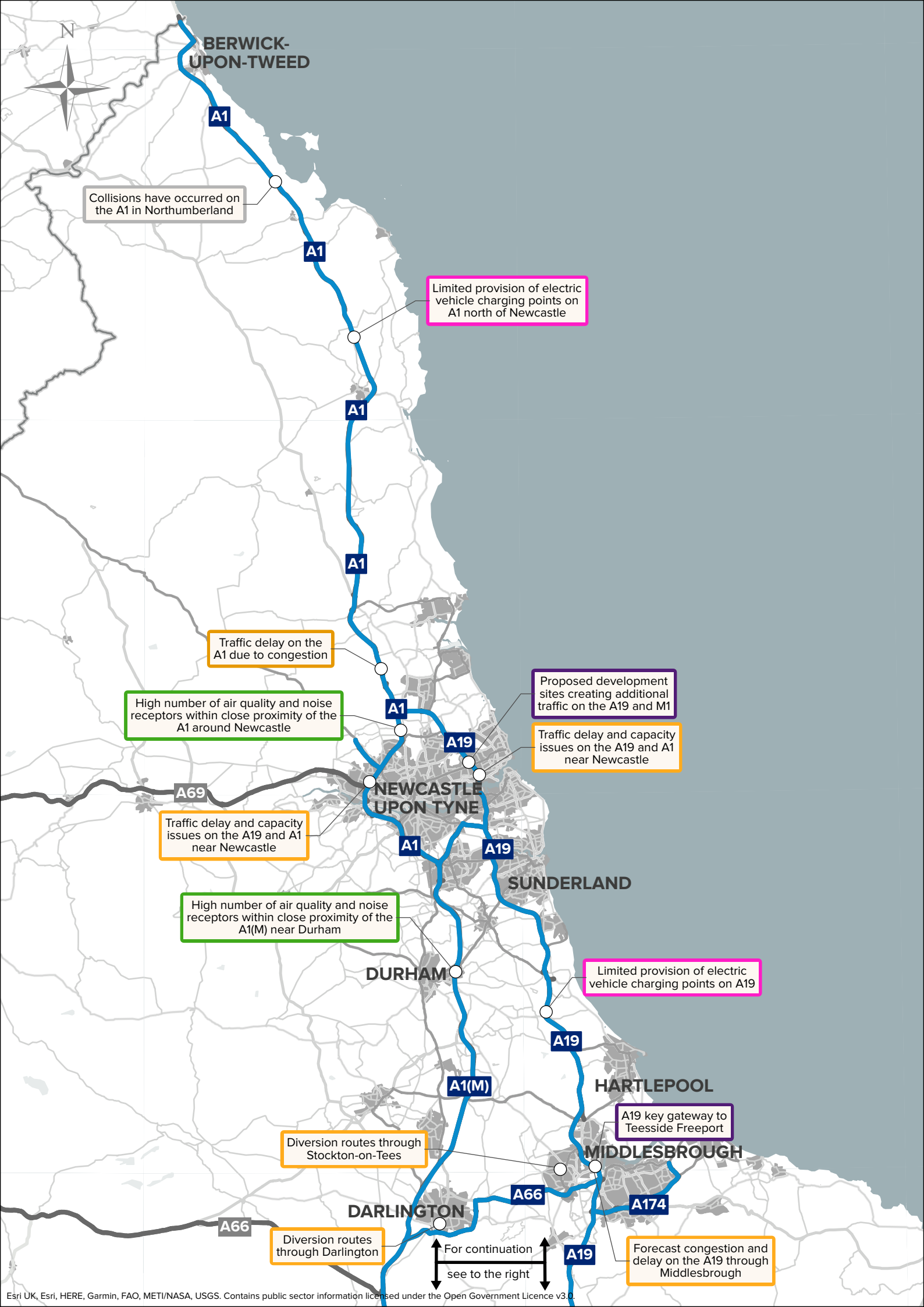
Engagement with interested parties highlighted that limited technology provision (such as intelligent transport systems) makes it more difficult to manage disruptive incidents and communicate information to drivers. This can be particularly problematic during periods of increased tourism, such as bank holidays and school holidays.

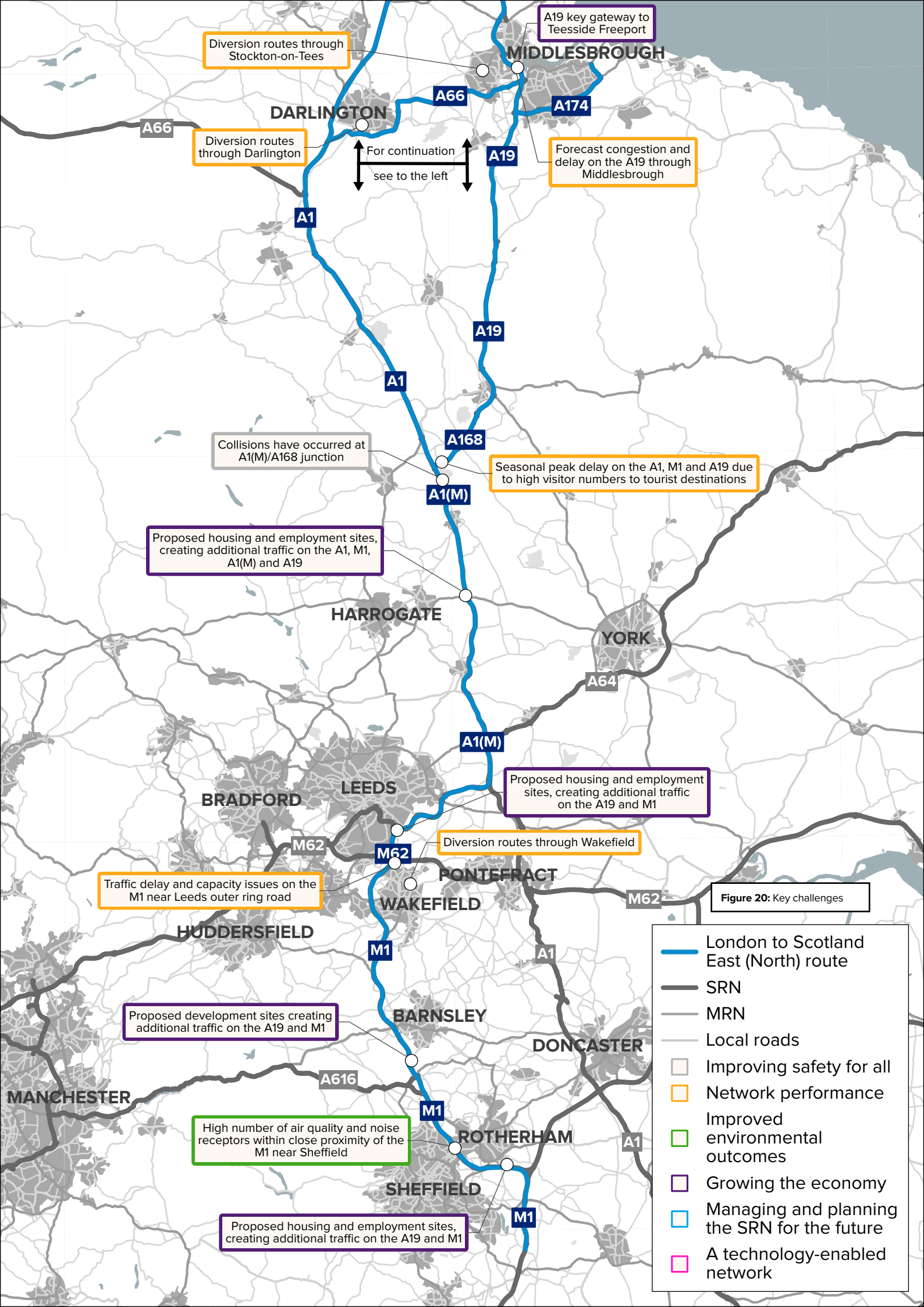
Key challenges

- Lack of information for road users
- Limited provision of electric vehicle charging points outside of main urban centres

⁴³ UK Government (March 2022) *UK electric vehicle infrastructure strategy*. <https://www.gov.uk/government/publications/uk-electric-vehicle-infrastructure-strategy>

⁴⁴ UK Government (March 2022) *Rapid charging fund*. <https://www.gov.uk/guidance/rapid-charging-fund>





Diversion routes through Stockton-on-Tees

A19 key gateway to Teesside Freeport

Diversion routes through Darlington

Forecast congestion and delay on the A19 through Middlesbrough

For continuation see to the left

Collisions have occurred at A1(M)/A168 junction

Seasonal peak delay on the A1, M1 and A19 due to high visitor numbers to tourist destinations

Proposed housing and employment sites, creating additional traffic on the A1, M1, A1(M) and A19

Proposed housing and employment sites, creating additional traffic on the A19 and M1

Traffic delay and capacity issues on the M1 near Leeds outer ring road

Diversion routes through Wakefield

Figure 20: Key challenges

Proposed development sites creating additional traffic on the A19 and M1

High number of air quality and noise receptors within close proximity of the M1 near Sheffield

Proposed housing and employment sites, creating additional traffic on the A19 and M1

- London to Scotland East (North) route
- SRN
- MRN
- Local roads
- Improving safety for all
- Network performance
- Improved environmental outcomes
- Growing the economy
- Managing and planning the SRN for the future
- A technology-enabled network



**Our
ambition for
the route**

06 Initial route objectives

We want to provide safer and more reliable journeys for all those who use or live alongside our network on the London to Scotland East (North) 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 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 SRN.

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. 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 road period.

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	<p>Support safe and reliable journeys on the network</p> <p>Improve user experience of safe journeys through provision of a resilient and consistent network across the route</p>
	B	<p>Support sustainable economic growth and levelling up in the North</p> <p>Support sustainable economic growth and levelling up in the North through efficient and reliable journeys on the M1, the A1 and the A19</p>
	C	<p>Support the efficient movement of goods on the M1 and A1</p> <p>Support the needs of the freight industry through the efficient movement of goods on the M1 and A1, to support the regional and national economy</p>
	D	<p>Reduce environmental impacts on communities</p> <p>Be a better neighbour by safeguarding the environment and reducing air quality and noise impacts on settlements within close proximity of the route</p>
	E	<p>Support the Yorkshire and North East visitor economy</p> <p>Support the Yorkshire and North East visitor economy by improving gateways to the Northumberland National Park, the Nidderdale AONB, the Yorkshire Dales National Park, North Pennines AONB and the North York Moors National Park</p>
	F	<p>Minimise the reliance on the local road network when collisions and closures occur on the SRN</p> <p>Minimise the impact on communities in locations such as Wakefield, Darlington, Hartlepool and Stockton-on-Tees due to strategic traffic using the local road network when collisions and closures occur on the SRN</p>
	G	<p>Support connectivity with sustainable transport modes</p> <p>Support effective connectivity to urban centres, including Sheffield, Leeds and Newcastle, through improved integration with sustainable transport modes to minimise the traffic impact on the route and benefit the environment</p>

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 technology-enabled network
✓	✓				
	✓		✓		
	✓		✓		✓
	✓	✓			
	✓		✓		
✓	✓				
	✓	✓			

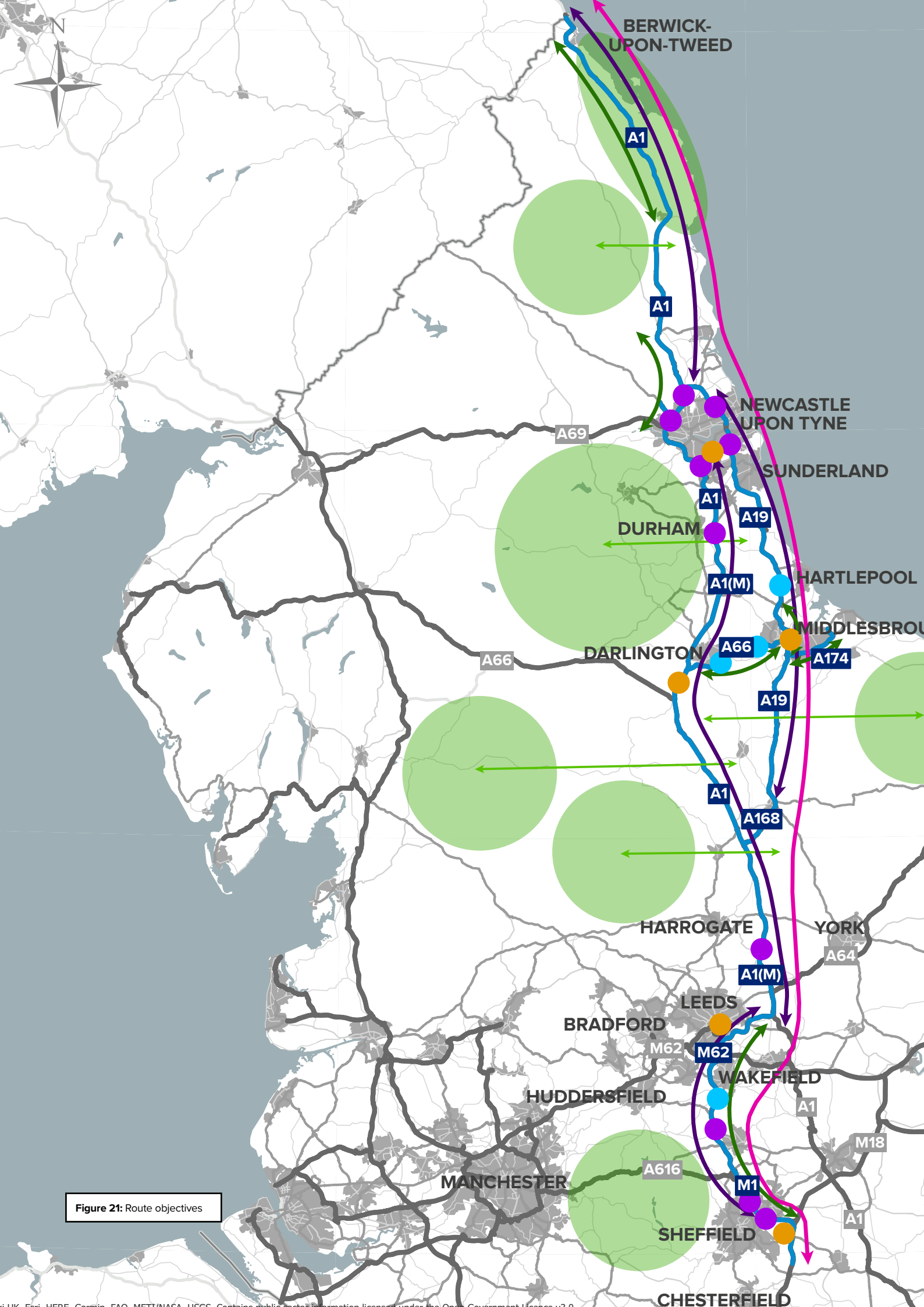







Figure 21: Route objectives


JGH


-  London to Scotland East (North) route
-  SRN
-  MRN
-  Local roads



Route objectives


 **A. Support safe and reliable journeys on the network:** Improve user experience of safe journeys through provision of a resilient and consistent network across the route


 **B. Support sustainable economic growth and levelling up in the North:** Support sustainable economic growth and levelling up in the North through efficient and reliable journeys on the M1, the A1 and the A19.

 **C. Support the efficient movement of goods on the M1 and A1:** Support the needs of the freight industry through the efficient movement of goods on the M1 and A1, to support the regional and national economy

 **D. Reduce environmental impacts on communities:** Be a better neighbour by safeguarding the environment and reducing air quality and noise impacts on settlements within close proximity of the route

  **E. Support the Yorkshire and North East visitor economy:** Support the Yorkshire and North East visitor economy by improving gateways to the Northumberland National Park, the Nidderdale AONB, the Yorkshire Dales National Park, Peak District National Park, North Pennines AONB and the North York Moors National Park

 **F. Minimise the reliance on the local road network when collisions and closures occur on the SRN:** Minimise the impact on communities in locations such as Wakefield, Darlington, Hartlepool and Stockton-on-Tees due to strategic traffic using the local road network when collisions and closures occur on the SRN

 **G. Support connectivity with sustainable transport modes:** Support effective connectivity to urban centres, including Sheffield, Leeds and Newcastle, through improved integration with sustainable transport modes to minimise the traffic impact on the route and benefit the environment



A. Support safe and reliable journeys on the network

Objective

Improve user experience of safe and reliable journeys through provision of a resilient and consistent network across the route.

Context

Safety concerns on this route have been raised by interested parties, particularly on the A1(M) and the A66. These mainly relate to inconsistent road standards, severance caused by the SRN particularly for active mode users, and safety issues associated with HGV traffic.

The route has been found to cause severance issues, particularly to active travel routes. This poses a safety issue for walkers and cyclists in places where appropriate crossings are not available. Several interested parties highlighted this as a limiting factor in the uptake of cycling and walking for commuting or leisure trips.

General concerns over safety issues associated with HGVs along with route were also raised. The potential risk of incidents during HGVs overtaking manoeuvres and the need for sufficient HGV parking at regular intervals along the route have been recorded during engagement with interested parties.

Our network considerations

In terms of recorded collisions where people were killed or seriously injured, the section of the route between Newcastle and the Scottish border has been found to raise concern among interested parties. Between Scemerston to the south of Berwick-upon-Tweed and Brownieside, a number of collisions occurred on the A1 involving casualties, some of which were fatal. Fatal collisions also occurred on the section of the A1 between the A1068 and the B6345. This section between Newcastle and the Scottish border also consists of a high number of sections with iRAP star ratings of 1 and 2 (where 1 is least safe rating).

A higher number of collisions involving HGVs were recorded on some sections of the route. These include serious collisions between Junction 43 and Junction 47 of the M1 near Leeds. Several collisions were recorded in North Yorkshire between Harrogate and Darlington, including a collision between two HGVs.



Figure 22 shows the percentage of walker, cyclist and horse rider collisions between 2015 and 2018. The collision data shows that a notable proportion of fatal and serious collisions recorded in the following sections of the route involved walkers, cyclists or horse riders:

- the A1 between the A1068 near Alnwick and the Scottish border, the A697 near Morpeth and Newcastle Great Park
- the A1 between the A697 near Morpeth and Newcastle Great Park
- the A1 between Denton Burn and Newcastle Great Park
- the A19 between the A174 near Thornaby-On-Tees and the A689 near Billingham
- the A66 between Darlington and Middlesbrough
- the M1 between Junction 43 with the M621 near Leeds and Junction 48 with the A1(M)
- the M1 between Junction 32 with the M18 to the east of Sheffield and Junction 43 with the M621 near Leeds

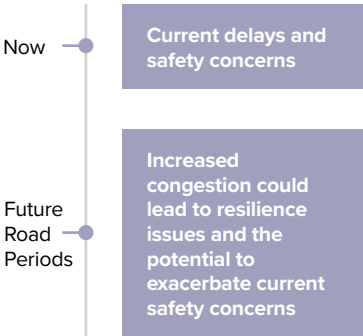
Outcomes

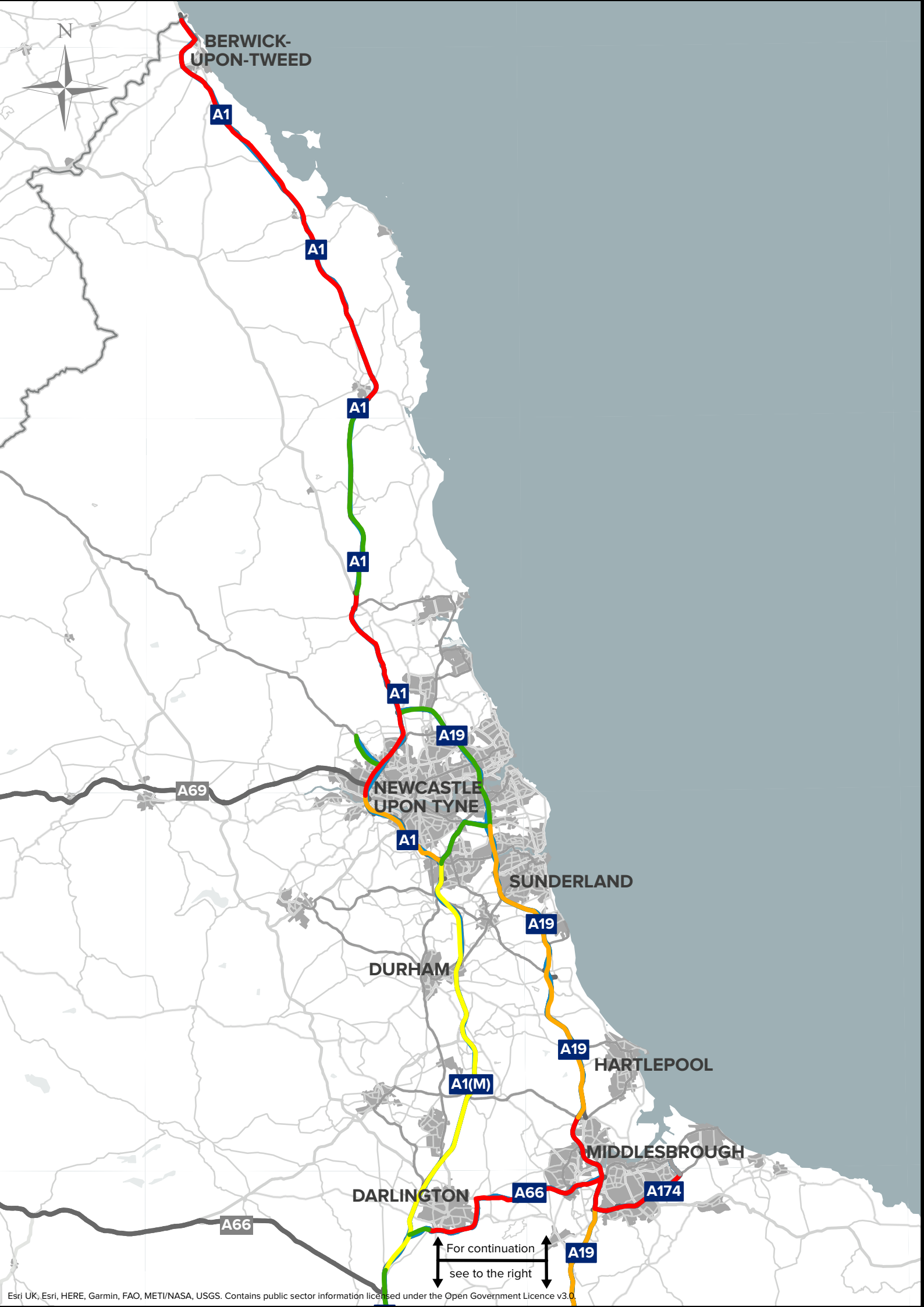
- Number of collisions reduced, particularly in the areas with high collision rates along the route, contributing to a safer network for all users
- Reduced risk for vulnerable road users, such as walkers, cyclists and horse riders

DfT's Strategic objectives

-  Improving safety for all
-  Network performance

Timeframe based on the issues and constraints identified





BERWICK-UPON-TWEED

A1

A1

A1

A1

A1

A19

A69

NEWCASTLE UPON TYNE

A1

SUNDERLAND

A19

DURHAM

A19

HARTLEPOOL

A1(M)

DARLINGTON

A66

MIDDLESBROUGH

A174

A66

A19

For continuation
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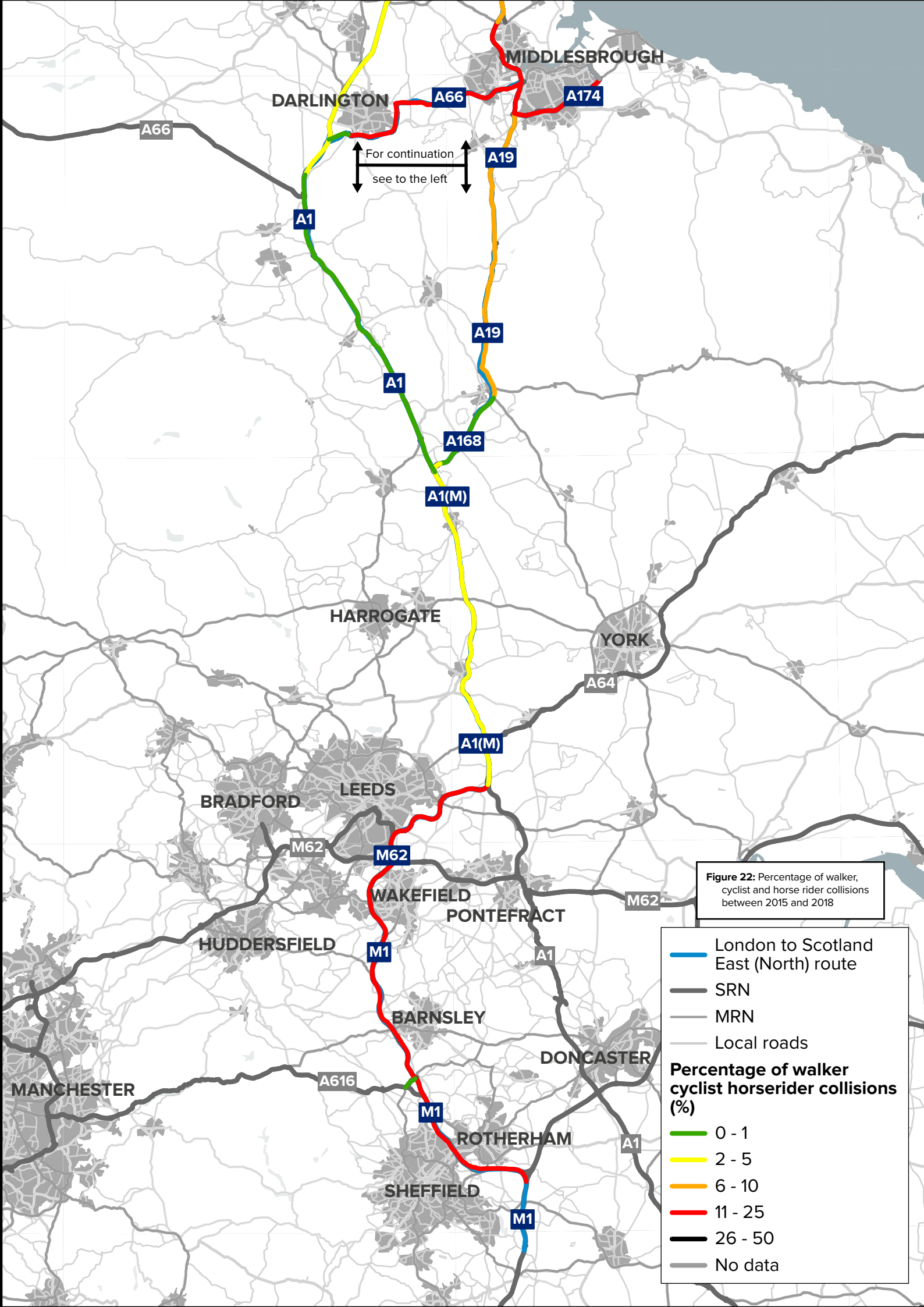


Figure 22: Percentage of walker, cyclist and horse rider collisions between 2015 and 2018

	London to Scotland East (North) route
	SRN
	MRN
	Local roads
Percentage of walker cyclist horserider collisions (%)	
	0 - 1
	2 - 5
	6 - 10
	11 - 25
	26 - 50
	No data

For continuation see to the left



B. Support sustainable economic growth and levelling up in the North

Objective

Support sustainable economic growth and levelling up in the North, through efficient and reliable journeys on the M1, the A1 and the A19.

Context

There is significant housing and employment growth proposed in areas in close proximity to the London to Scotland East (North) route. The route plays an important role in providing safe and reliable connections to these sites, supporting sustainable economic growth in the North, subject to the outcomes of the statutory planning process.

The M1 immediately south of Junction 45 borders Leeds Enterprise Zone, which is one of the UK's key strategic locations for new employment floorspace. This is expected to become a key location for manufacturing, logistics and distribution. Part of the M1 falls within the Aire Valley Leeds Area Action Plan, which contains over 400 hectares of development land with the potential to help meet West Yorkshire's aspirations for housing, and provide new jobs. The SRN plays a key role in enabling seamless movement to and from these locations, supporting economic growth now and into the future.

The route plays a key role in providing access for passengers and freight to the Teesside Freeport, which is a major employment site and facilitates the movement of a significant amount of cargo.

Engagement with local authorities, combined authorities and sub-national transport bodies highlighted other examples of land-use development proposals that could have a significant impact on the SRN. These include:

- 9,500 new homes and 8,000 new jobs in Darlington
- employment sites adjacent to A1(M) at Flaxby
- approximately 14,000 new homes and 40 hectares of employment land in Harrogate, Knaresborough and Ripon
- the International Advanced Manufacturing Park in Sunderland to the West of the A19
- the Advanced Manufacturing and Innovation District in Sheffield
- housing sites in North Tyneside close to the A19
- housing and mixed-use sites in Barnsley next to the M1

Our interested parties have expressed a preference for National Highways to work through the planning process to support these proposals and provide reliable access to job markets, thereby increasing economic growth.

Several areas connected by the route, such as Rotherham, Wakefield, Leeds, Durham, Newcastle and Northumberland have been categorised by the Government as a category 1 levelling up location, which means they are considered most in need of investment through the Levelling Up Fund. The SRN is essential to supporting sustainable economic development in these areas by providing reliable connectivity.

Our network considerations

Regular congestion is evident at various locations along the route. Examples include the A1(M)/A64 interchange, the M1 where it meets the A616 (which connects to the Peak District National Park), the A174 which leads to the North York Moors National Park, and the A1(M) where it meets the A66 (which links to the Yorkshire Dales National Park). Capacity issues are evident on the A1 at Newcastle and several sections of the A19 at Newcastle and Middlesbrough.

Current levels of congestion on the network would likely worsen with increased demand.

Outcomes

- Regional economy supported through enabling safe, reliable connectivity between housing areas and employment sites. Examples include the Leeds Enterprise Zone and the Advanced Manufacturing and Innovation District in Sheffield
- Sustainable economic growth supported, particularly in areas considered priorities for levelling up, including Rotherham, Wakefield, Leeds, Durham, Newcastle and Northumberland

DfT's Strategic objectives

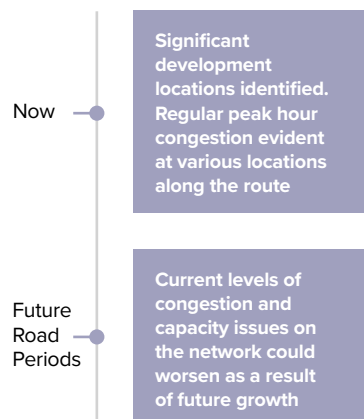


Network performance



Growing the economy

Timeframe based on the issues and constraints identified





C. Support the efficient movement of goods on the M1 and A1

Objective

Support the needs of the freight industry through the efficient movement of goods on the M1 and A1, to support the regional and national economy.

Context

London to Scotland East (North) is a key route that supports cross border connectivity, as 15% of all HGV traffic between England and Scotland uses the A1. However, as highlighted in the Union connectivity review⁴⁵, HGVs limited to travel at lower speeds than other vehicles impacts reliability and capacity.

The Teesside Freeport area extends across the region, including Teesworks (the largest brownfield site in Europe spanning across 4,500 hectares), Teesport, the Port of Middlesbrough, the Port of Hartlepool and Teesside International Airport. Teesside Freeport is expected to create more than 18,000 jobs and boost the local economy by billions of pounds. Teesport, the fifth largest port in the UK, facilitates the movement of over 28 million tonnes of cargo annually, and its location on the North Sea and transport connections by sea, rail, and importantly, road, enable successful freight transfer, with imports and exports from a wide range of international destinations.

Teesport contributes over £1.4 billion to the UK economy each year. Network Rail is expecting growth from Teesport in terms of intermodal rail freight.

There are also more than 40 freight distribution centres, strategic rail freight interchanges and airports situated in close proximity to the route. These require reliable infrastructure with appropriate capacity to enable international connectivity. Interested parties have said that there are existing issues on these roads including an inconsistent network layout, congestion and poor reliability, which hinder the dependable movement of goods.

Existing capacity constraints and gaps in driver welfare facilities along the route inhibits the flow of goods. Also, congestion inhibits reliable and efficient HGV movements to key destinations, which can prevent companies and businesses investing in the area. We are aware of the need to ensure the route provides reliable and efficient journeys for HGVs.

We want to support economic growth through a reliable, resilient transport network for journeys to, from, and within the North. This means connecting businesses and moving freight and goods efficiently across the North, and to the North's ports and airports.

Our network considerations

The movement of freight along this route particularly relies on the A1 and M1 to connect to the wider regional and national network, and also the A168, A19 and A66 to serve economic centres. The A1 and A66 route is used as a key freight route to Scotland (Cairnryan) and links to Northern Ireland through Belfast.

A high proportion of the GVA of local authorities such as Rotherham, Wakefield, Selby, Durham, Stockton-on-Tees and Sunderland is linked to the SRN. As shown in Figure 23, HGVs account for 20% of the total traffic between Junction 33 and Junction 34 of the M1 and also between Junction 45 and Junction 51 of the A1.

The Teesside Freeport sites will benefit from direct access to the A66, which provides trans-Pennine east and west connections. They are also located up to 30 kilometres from the A19 and the A1(M). We want to support efficient and reliable movement of HGVs along these routes.




⁴⁵ Sir Peter Hendy CBE (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

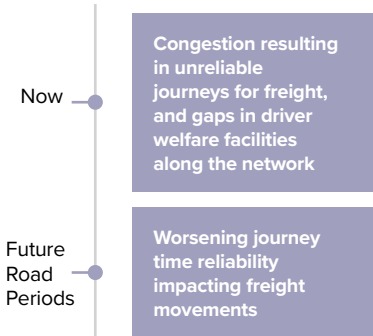
Outcomes

- Improved reliability for freight, particularly along the M1 and the A1
- Economic growth across the North supported, particularly in locations highly dependent on imports and exports facilitated by the SRN, such as the ports, freeports, airports and freight distribution centres

DfT's Strategic objectives

-  Network performance
-  Growing the economy
-  A technology-enabled network

Timeframe based on the issues and constraints identified





BERWICK-UPON-TWEED

A1

A1

A1

A1

A1

A19

A69

NEWCASTLE UPON TYNE

A1

SUNDERLAND

A19

DURHAM

A19

HARTLEPOOL

A1(M)

MIDDLESBROUGH

DARLINGTON

A66

A174

A66

A19

For continuation see to the right

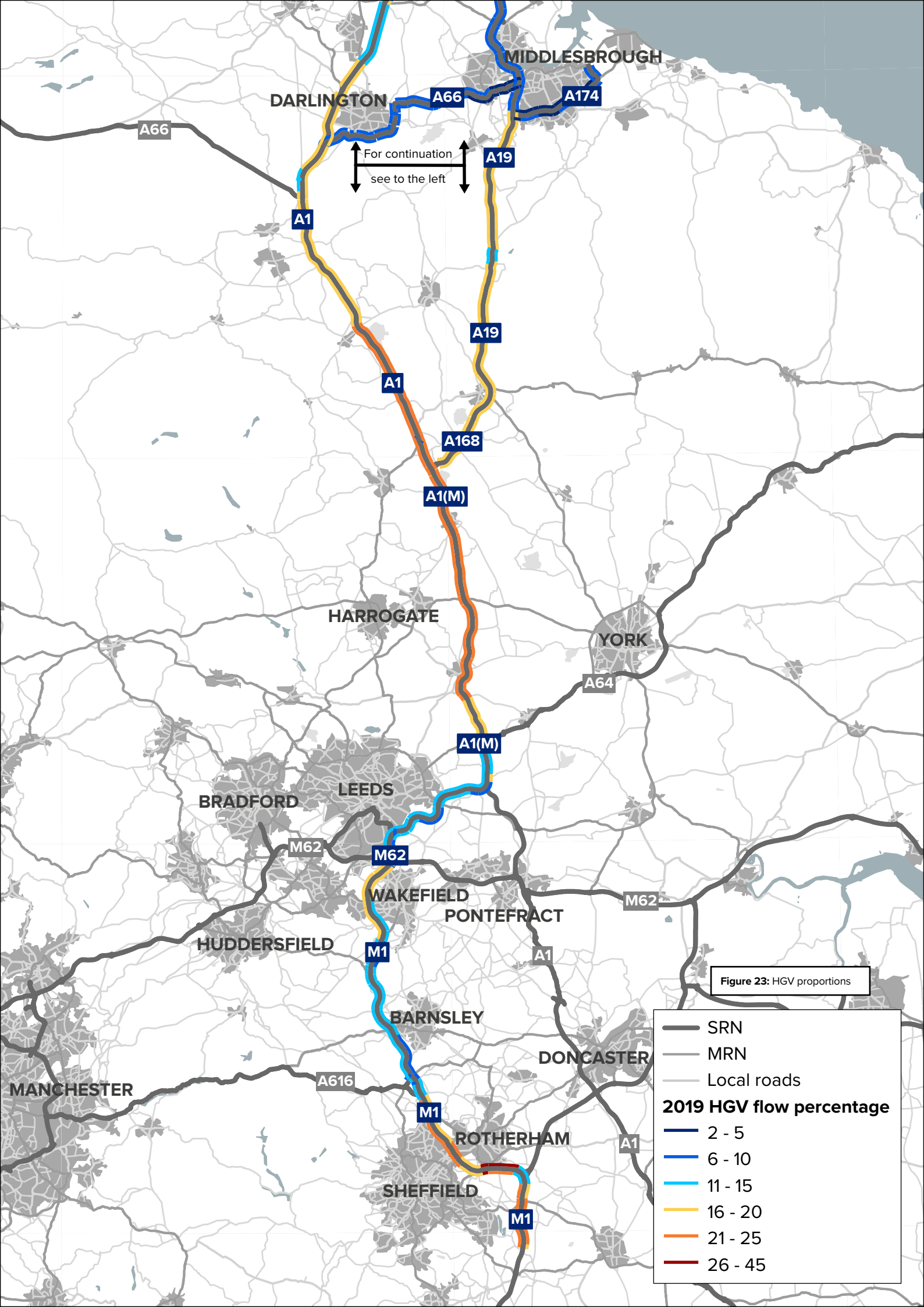
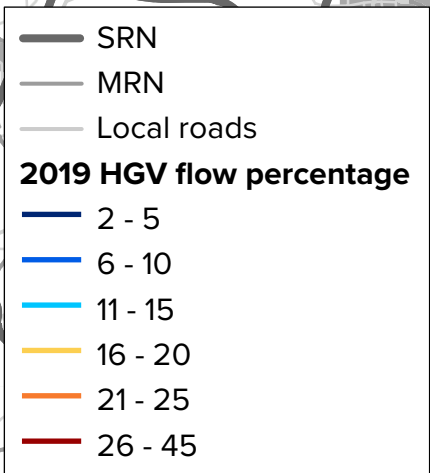


Figure 23: HGV proportions





D. Reduce environmental impacts on communities

Objective

Be a better neighbour by safeguarding the environment and reducing air quality and noise impacts on settlements within close proximity of the route.

Context

Achieving net zero carbon is a key ambition of the UK Government as well as local authorities, such as Leeds City Council (by 2038) and Newcastle City Council (by 2030). This requires a significant reduction in the emission of greenhouse gases and other pollutants from road traffic.

Engagement with interested parties has highlighted that air quality issues around the SRN are a concern, which primarily arise from increased congestion and delay at certain locations along the route.

Our network considerations

Figure 24 shows the sections of the route which are in the top 10% nationally in terms of receptors which may be more likely to experience adverse air quality impacts or impacts from high noise levels.

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

- sections of the A1 to the west of Newcastle (between Junctions 65 and 80)
- sections of the A19 to the east of Newcastle (between Hylton Grange Interchange and Junction 80)
- the section of the route to the east of Durham between Junctions 61 and 62 of the A1(M)
- the section between Junctions 45 and 46 of the A1(M) to the east of Wetherby
- to the west of Barnsley, the section between Junctions 37 and 38 of the M1
- sections of the M1 between Sheffield and Rotherham, between Junctions 33 and 35

It is also important to note that the entire section of the M1 between Junctions 33 and 42 is located within AQMAs.

There are receptors within 300 metres of the SRN which may be more sensitive to high noise levels, including:

- the northern and southern ends of the section of the A1 to the west of Newcastle (between Junctions 65 and 80)
- the section of the route to the east of Durham between Junctions 61 and 62 of the A1(M)
- the section between Junctions 45 and 46 of the A1(M) to the east of Wetherby
- to the west of Barnsley, the section between Junctions 37 and 38 of the M1
- sections of the M1 between Sheffield and Rotherham, between Junctions 33 and 35

Outcomes

- Improved air quality and noise levels for communities along the route

DfT's Strategic objectives

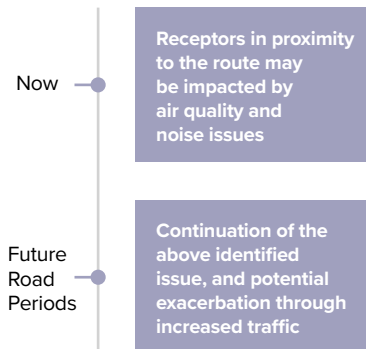


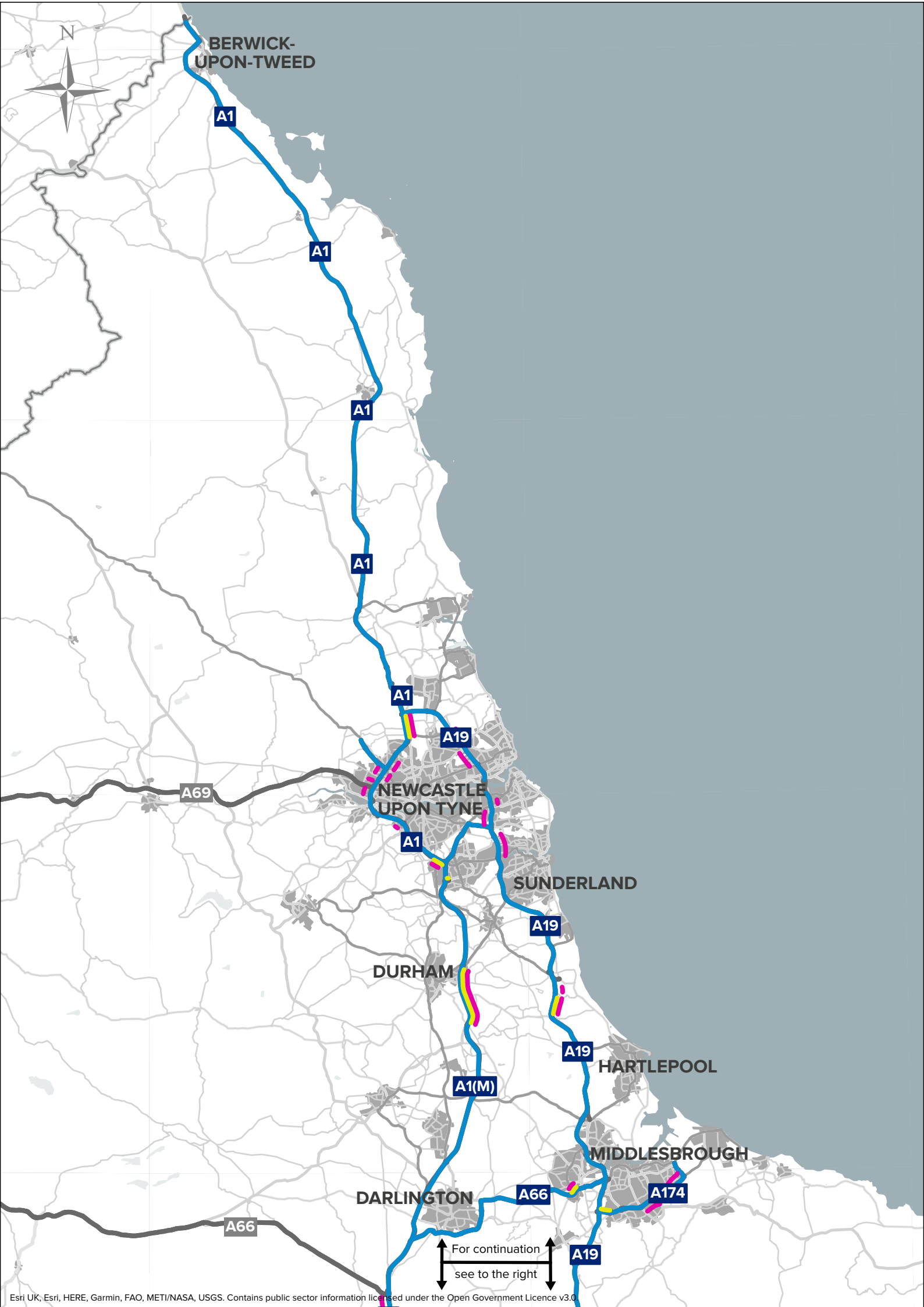
Network performance



Improved environmental outcomes

Timeframe based on the issues and constraints identified





BERWICK-UPON-TWEED

A1

A1

A1

A1

A1

A19

A69

NEWCASTLE UPON TYNE

A1

SUNDERLAND

A19

DURHAM

A19

HARTLEPOOL

A1(M)

MIDDLESBROUGH

DARLINGTON

A66

A174

A66

A19

For continuation
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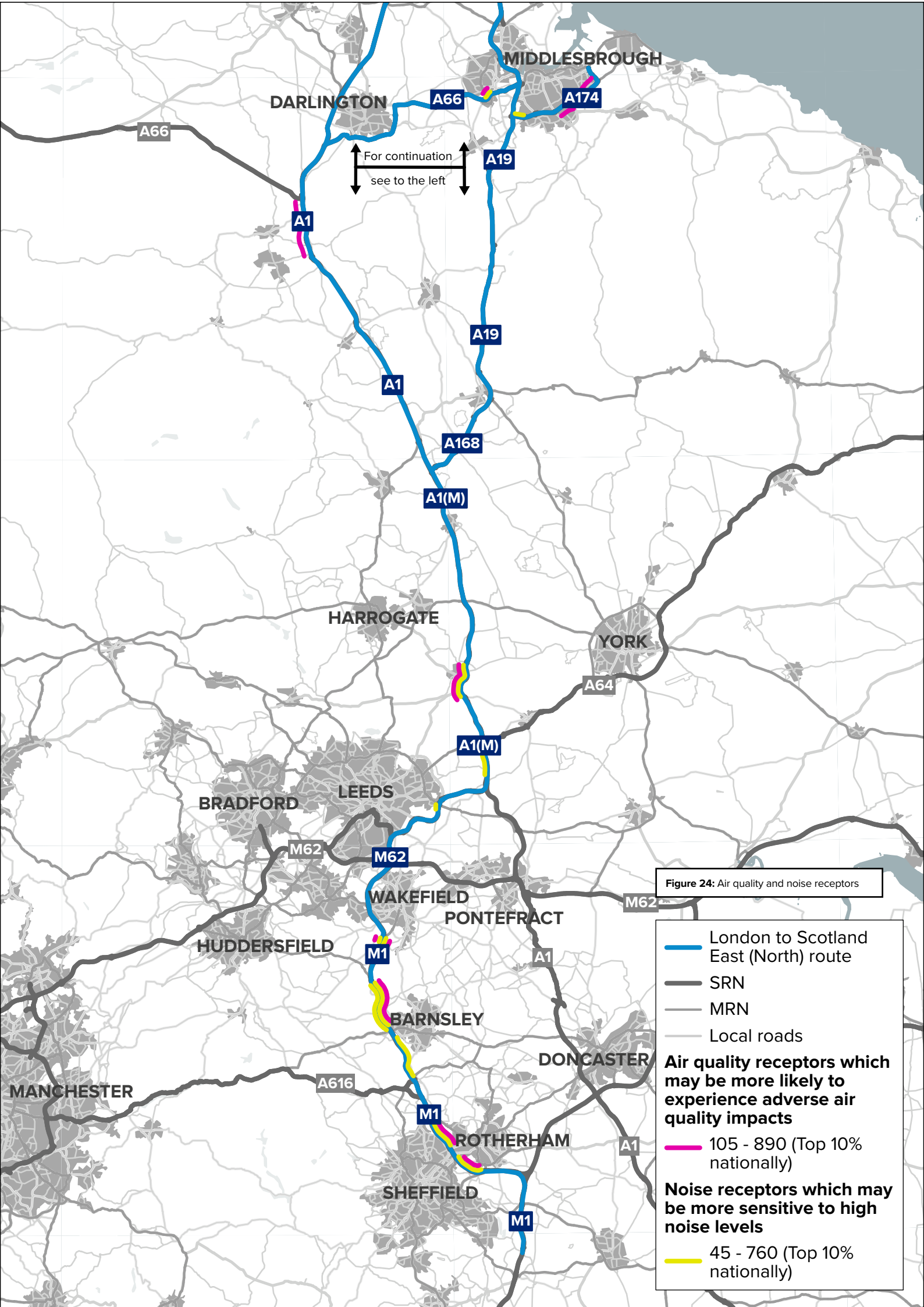


Figure 24: Air quality and noise receptors

— London to Scotland East (North) route
— SRN
— MRN
— Local roads

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

— 105 - 890 (Top 10% nationally)
— 45 - 760 (Top 10% nationally)

Noise receptors which may be more sensitive to high noise levels

— 45 - 760 (Top 10% nationally)



E. Support the Yorkshire and North East visitor economy

Objective

Support the Yorkshire and North East visitor economy by improving gateways to the Northumberland National Park, the Nidderdale AONB, the Peak District National Park, the Yorkshire Dales National Park, North Pennines AONB and the North York Moors National Park.

Context

The London to Scotland East (North) route provides connectivity to several key tourist destinations, all of which experience high volumes of visitors during the year.

Visitor numbers in the Northumberland National Park have been increasing over the last decade. The National Park recorded 1.73 million visitors for the whole of 2019-20. Similarly, the Yorkshire Dales National Park received a total of 4.7 million visitors. We recognise that it is important that the region can reap the benefits of growing visitor numbers by having a road network that can accommodate this demand.

Our network considerations

The M1, A1 (including the M1/A1 intersection), southern part of the A1(M), and the A66 experience seasonal variations in demand due to leisure and tourism, with congestion and journey time unreliability during the summer peak periods.

There is significant delay at or around:

- the M1, where it meets the A616 that connects to the Peak District National Park
- the A174, which provides access to the North York Moors National Park
- the A1(M), where it meets the A66 that provides access to the Yorkshire Dales National Park
- the A1 at the Scottish border

Tourism contributes significantly to the local and regional economy. For, example, the estimated direct GVA value for the visitor economy in 2019 was £2.58 billion in the Yorkshire and the Humber Region and £1.32 billion for North East England. However, this level of tourism also exacerbates transport issues. We recognise the importance of ensuring that additional journeys during peak holiday periods do not cause a severe impact on the route, including for other road users and local communities

Outcomes

- Increased tourist numbers to key destinations along and adjacent to the route, contributing to the visitor economy
- Improved reliability and journey times on the SRN including during the peak holiday periods, leading to increased road user satisfaction

DfT's Strategic objectives

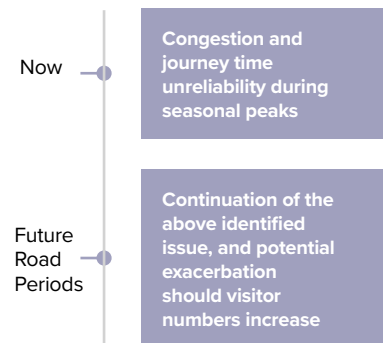


Network performance



Growing the economy

Timeframe based on the issues and constraints identified





F. Minimise the reliance on the local road network when collisions and closures occur on the SRN

Objective

Minimise the impact on communities in locations such as Wakefield, Darlington, Hartlepool and Stockton-on-Tees, resulting from traffic using the local road network when collisions and closures occur on the SRN

Context

Collisions, planned maintenance, closures or roadworks result in increased journey times and reduced reliability due to the congestion caused from standstill or slow-moving traffic. As shown in Figure 25, Diversion Routes for Unplanned Events (DRUEs) are put in place to re-route traffic along routes agreed with local authorities, while satellite navigation systems often re-navigate to the fastest route to avoid the congestion. A number of DRUEs pass through urban centres, increasing pressure on the local road network. This is detrimental to the local area in regard to journey time reliability for its population, but also in terms of increased environmental impacts.

Our network considerations

There are a number of DRUEs on the London to Scotland East (North) route that pass through urban centres, such as Wakefield (A638, A61), Darlington (A167, B6280), Hartlepool (A689) and Stockton-on-Tees (A177, A1305). Diverting traffic can cause significant local impacts.

Engagement with interested parties has highlighted incidents on the M1 and the A1 causing traffic to divert through urban areas, especially Wakefield.

A number of these urban centres already experience high levels of congestion and are less suitable for certain vehicle types such as HGVs, which can result in increased congestion, and environmental impacts.

Outcomes

- Greater resilience of the network in the occurrence of closures or collisions, improving journey time reliability, of particular benefit to freight operations and port connectivity in the North
- Reduced localised impact of traffic along existing diversion routes particularly in relation to noise and air

DfT's Strategic objectives

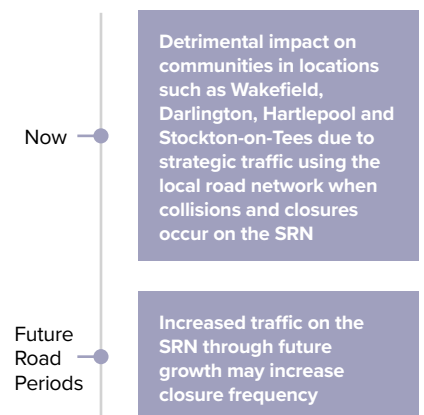


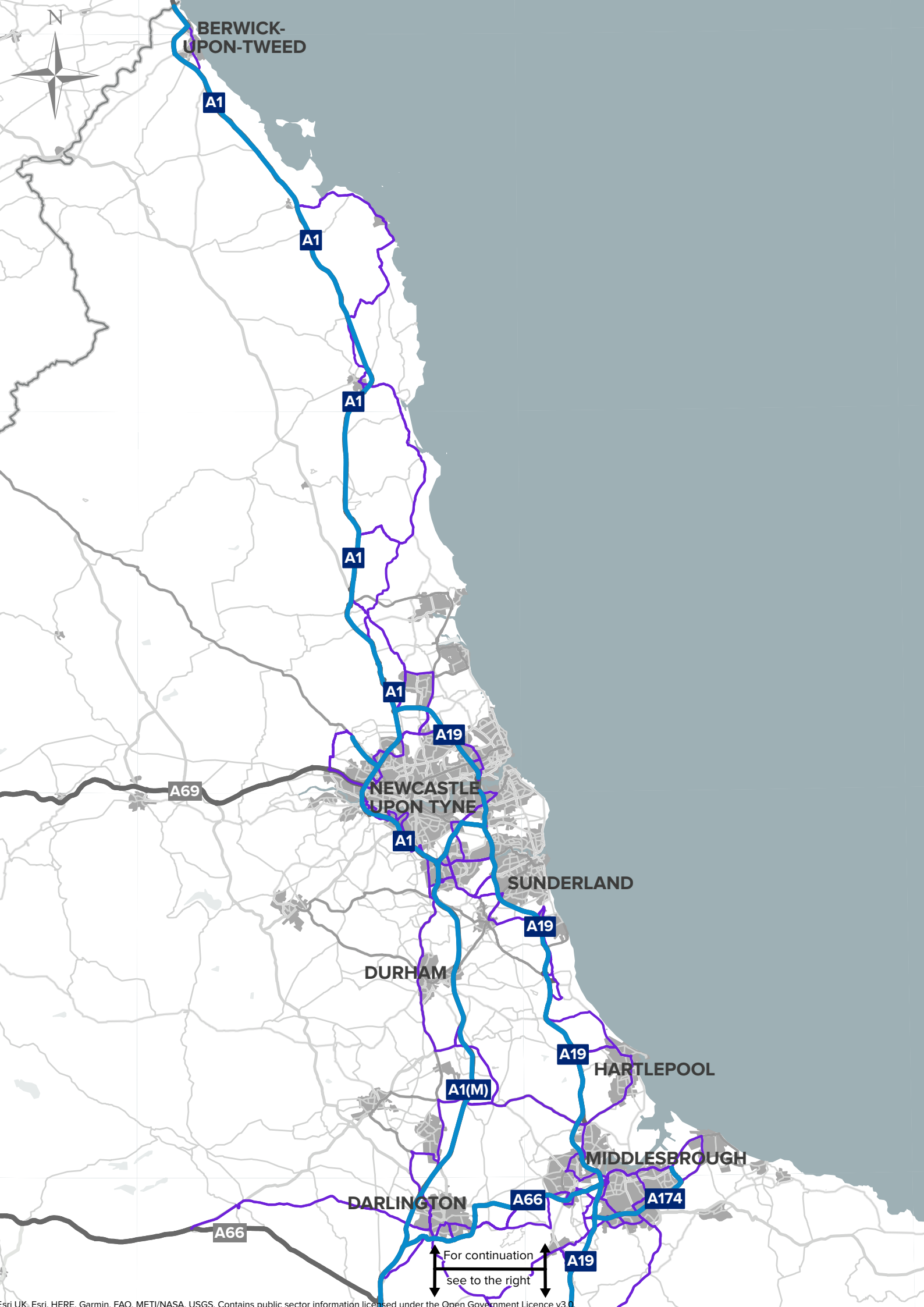
Improving safety for all



Network performance

Timeframe based on the issues and constraints identified





BERWICK-UPON-TWEED

A1

A1

A1

A1

A1

A19

NEWCASTLE UPON TYNE

A1

SUNDERLAND

A19

DURHAM

A19

HARTLEPOOL

A1(M)

MIDDLESBROUGH

DARLINGTON

A66

A174

A66

A19

For continuation
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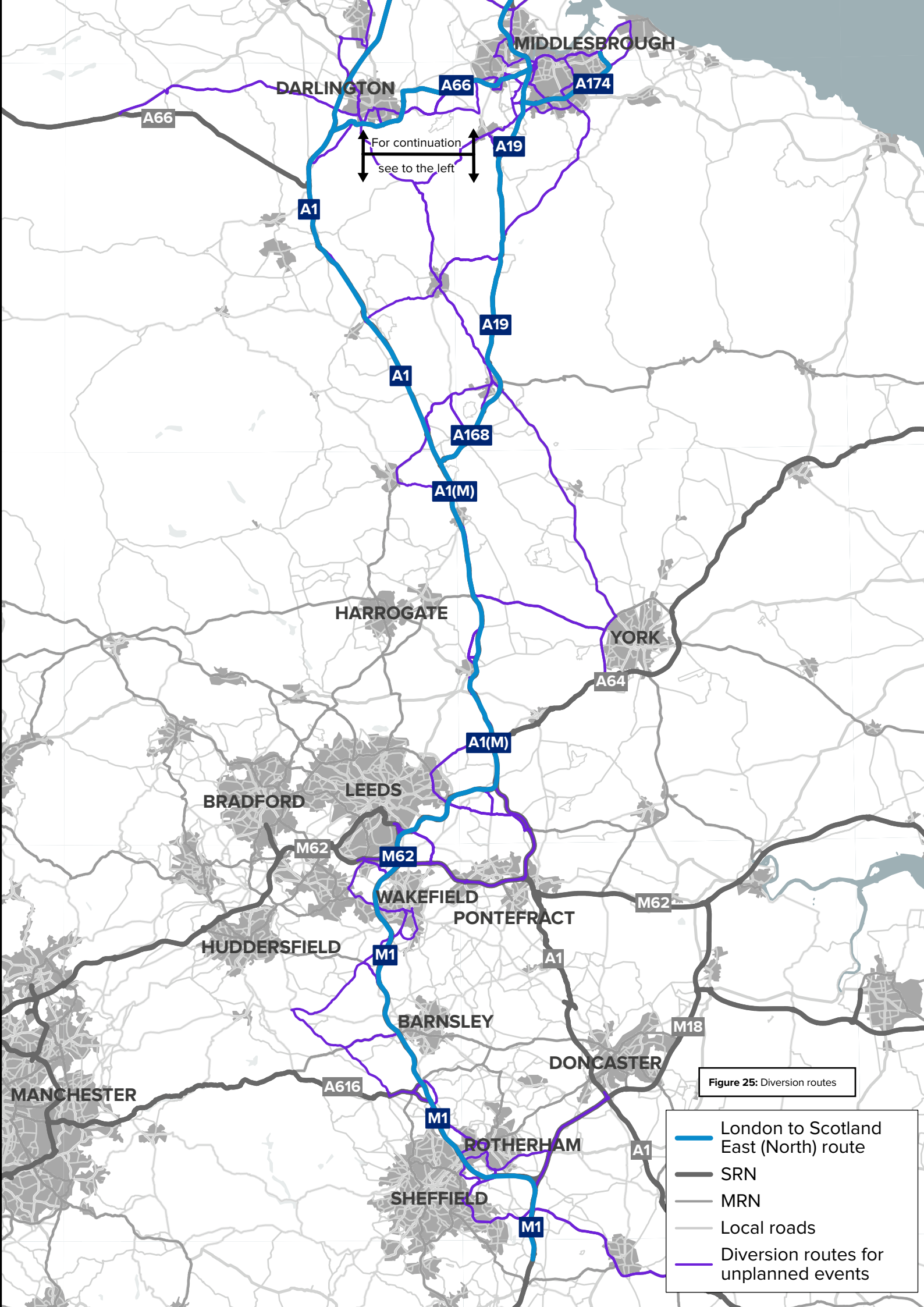


Figure 25: Diversion routes

- London to Scotland East (North) route
- SRN
- MRN
- Local roads
- Diversion routes for unplanned events



G. Support connectivity with sustainable transport modes

Objective

Support effective connectivity to urban centres, including Sheffield, Leeds and Newcastle, through improved integration with sustainable transport modes to minimise the traffic impact and benefit the environment

Context

It is important to promote sustainable travel in order to achieve DfT and National Highways targets on net zero carbon, and encouraging the use of public transport has an important role to play in that. While the route is used for a wide variety of journeys, including commuting, long-distance travel, transporting of goods, and local travel, it has the potential to enable connections to onward journeys, for example to town centres by public transport.

Currently, there is limited connectivity to these urban areas from some rural communities by sustainable modes. This worsens rural isolation, and there is a need for a better balance of public and private transport, which the SRN could support.

Commuting patterns are car-dominated for districts covered by the London to Scotland East (North) route. Driving or being a passenger in a car or van is the most common travel choice. Limited integration with the SRN may be limiting the use of sustainable modes.

The negative environmental impact of transport in urban centres, such as Newcastle and Leeds city centres and outer ring roads, could be reduced by providing access to onward sustainable transport links in close proximity to the SRN. Improved integration of the SRN with other modes such as bus, light and heavy rail could provide these local connections. Existing park and ride facilities, such as Temple Green in Leeds, have proven to be successful, with the site operating at 85% capacity (1,000 spaces) within 2 years of opening. This suggests potential for similar integration elsewhere.

We are aware that some parts of the route cause severance to existing active travel corridors given a lack of appropriate crossing facilities, limiting some active travel journeys.

Our network considerations

We understand that there are a number of specific areas of concern regarding provision of, and support for, active modes of transport, including:

- the SRN forming a physical barrier to active modes along the route, causing severance, particularly in areas where levels of deprivation are high and car ownership levels are low. This is an issue particularly on the A19 between Newcastle and Middlesbrough, and on the A66
- crossing points that are not suitable for cyclists and users with a disability. This excludes a proportion of users and further disconnects the cycle network, making it difficult to travel by active modes

Through engagement, interested parties said they wanted a reduction in severance to active modes, and to consider the options for integration with public transport. Local interested parties can help identify the key areas with severance issues and potential methods for mitigation. Supporting interchange with public transport from the SRN is expected to encourage a modal shift.

Outcomes

- Increased number of multimodal journeys, particularly park and ride journeys along the route to urban centres such as Sheffield and Newcastle. As a result of this, reduced emission of air pollutants from vehicles, particularly in city centres
- Increased uptake in active travel for shorter-distance journeys near the SRN, meaning reduced congestion on the SRN and local road network

DfT's Strategic objectives



Network performance



Improved environmental outcomes

Timeframe based on the issues and constraints identified

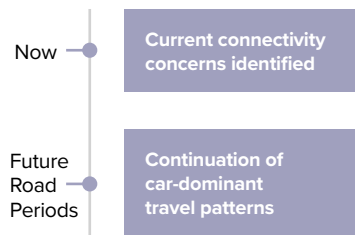


Table 2: Evidence used to inform objectives

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
<p>A Support safe and reliable journeys on the network</p> <p>Improve user experience of safe journeys through provision of a resilient and consistent network across the route</p>	<p>Particularly on the A1(M) and the A66.</p>	<p>Improving safety for all</p> <ul style="list-style-type: none"> • There are safety issues on A1(M) through Durham involving HGVs overtaking • There are safety concerns on designated SRN diversion routes, including height and weight restrictions • There is a requirement for more crossing points and infrastructure for non-motorised users • Single carriageway gaps cause issues across network including A66 at Darlington and the A1 • Variable route standard on A1(M) north of Scotch Corner poses safety issues 	<p>DfT has identified <i>"Improving safety for all"</i> as a key priority in its <i>Planning ahead for the strategic road network</i>.</p>	<p>Improving safety for all</p> <p>The following sections along the route received a star rating of 2 (medium-high risk road) and many short sections received a star rating of 1 (high-risk road):</p> <ul style="list-style-type: none"> • A66: Stapleton Bank roundabout to Great Burdon (star rating of 1) • A19: Elwick to Wingate, Hawthorn, and Boldon (star rating of 2) • A1: Fulbeck to Alnwick, to the north of Newcastle (star rating of 2) • A1: Brownieside and Berwick-upon-Tweed (North) (star ratings of 1 and 2) <p>According to the STATS19 data, there are concentrations of recorded collisions on the following sections of the route:</p> <ul style="list-style-type: none"> • A1: northbound and southbound between Brownieside and Berwick-upon-Tweed, with the southbound section also having the highest occurrence of collisions involving walkers, cyclists and horse riders (WCH) on the route • A1(M) / A66: eastbound between Greta Bridge and Scotch Corner, around Junction 53 • A1(M): northbound between Junctions 48 and 49

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
<p>B Support sustainable economic growth and levelling up in the North</p> <p>Support sustainable economic growth and levelling up in the North through efficient and reliable journeys on the M1, the A1 and the A19</p>	<p>All route sections</p>	<p>Growing the economy</p> <ul style="list-style-type: none"> • Better integration is needed with other transport schemes, aimed at supporting and promoting sustainable modes • Congestion currently constrains local development • Better integration is needed with proposed developments • There should be a focus on improving north-south connectivity, and union connectivity • There is a need to support the levelling up national, regional and local objectives • There is a need to support economic growth in key growth locations 	<p>Yorkshire to Scotland is one of the Strategic Development Corridors identified in TfN's Strategic Transport Plan that reflect economic links across the North.</p> <p>TfN aims to strengthen road connectivity between the Midlands, South Yorkshire, West Yorkshire, North Yorkshire, East Riding, Tees Valley, the North East, and Scotland, building on the existing road investment commitments.</p>	<p>The A1(M), north of the interchange with the M1, provides a vital strategic link to the rest of the UK for those situated in the North East of the country. The route also provides cross-border connectivity facilitating the movement of goods and people between England and Scotland, with 15% of HGV traffic between England and Scotland using this route.</p> <p>There are significant new employment, housing and mixed-use sites allocated within close proximity of the route.</p> <p>Some of the proposed sites are located in North Tyneside close to the A19, in Barnsley next to the M1, in Darlington, Flaxby, Harrogate, Knaresborough and Ripon. The route also provides access to key employment sites such as the Leeds Enterprise Zone and Advanced Manufacturing and Innovation District (AMID) in Sheffield, which are both stimulators of the regional economies. Furthermore, the Teesside Freeport sites are located within 30 kilometres of the A19.</p> <p>Several areas connected by the route, such as Rotherham, Wakefield, Leeds, Durham, Newcastle and Northumberland fall under the Government's levelling up category 1.</p> <p>Between Junction 33 and Junction 34 of the M1, HGVs account for 20% of total traffic – and similarly between Junction 45 and Junction 51 of the A1.</p> <p>This route also serves a high number of visitor journeys to key tourist destinations in the North such as the Northumberland National Park, the Nidderdale AONB, the Yorkshire Dales National Park, North Pennines AONB, Northumberland Coast AONB, the North York Moors National Park, and to coastal towns and cities in the North East where tourism is a key element of the economy.</p>

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
<p>C Support the efficient movement of goods on the M1 and A1</p> <p>Support the needs of the freight industry through the efficient movement of goods on the M1 and A1, to support the regional and national economy</p>	<p>Particularly the A1</p>	<p>Network performance</p> <ul style="list-style-type: none"> • There are heavy traffic flows including HGVs from Junction 59 of A1(M) to A66 east of Darlington using local roads <p>Growing the economy</p> <ul style="list-style-type: none"> • This is a key freight route for North-South connectivity • Greater provision is needed for alternative HGV parking and freight facilities <p>Managing and planning the SRN for the future</p> <ul style="list-style-type: none"> • There are inconsistent and infrequent service facilities for HGVs 	<p>The TfN <i>Freight and Logistics Strategy</i> outlines several proposed freight objectives which will align with the TfN pan-Northern Transport Objectives.</p> <p>The DfT's Union Connectivity Review highlights the importance of domestic freight, which accounts for 19% of all traffic handled by UK ports.</p>	<p>There is an opportunity to improve the flow of goods given the existing capacity constraints and gaps in driver welfare facilities along the network. Also, HGVs struggle to maintain reliable and efficient access to key destinations in the region as a result of congestion, which can prevent companies and businesses investing in the area.</p>
<p>D Reduce environmental impacts on communities</p> <p>Be a better neighbour by safeguarding the environment and reducing air quality and noise impacts on settlements within close proximity of the route</p>	<p>Particularly around the A1, A19, A1(M) and the M1.</p>	<p>Improved environmental outcomes</p> <ul style="list-style-type: none"> • There are noise complaints on the M1 around Thorpe Hesley • Congestion on the route negatively impacts upon air quality • Consideration is needed of local authority net zero targets • There is a need to ensure the network responds to net zero carbon and environmental ambitions • Consideration is needed of facilities for wildlife and protection of environments • Noise pollution is observed due to the volume of traffic and the local landscape does not provide any dilution to the noise, particularly in the winter when the trees are bare • Potential future Clean Air Zones or Road User Charging in urban areas driving traffic onto A1/A19 need to be taken into consideration 	<p>There is a national commitment to reducing emissions from transport, which is supported in TfN's <i>Major Roads Report</i>, DfT's <i>Planning Ahead for the Strategic Road Network</i> report and the <i>Electric Vehicle Infrastructure Strategy</i>.</p> <p>TfN acknowledges the wider context of the climate emergency, with evidence suggesting that the majority of journeys now and in the future will continue to be on the road network, whether by zero emission vehicles, walking, cycling, bus or tram.</p> <p>Reducing greenhouse gas emissions from the transport network is a key priority and TfN's board has recently adopted its <i>Decarbonisation Strategy</i> for the North (November 21), which sets out a decarbonisation trajectory and outlines TfN's actions towards achieving a near-zero date of 2045 for carbon emissions from surface transport in the North.</p>	<p>There are receptors that lie within close proximity of the A1, A19, A66 and the M1. Some of the locations with higher concentration of receptors include the northern and southern ends of the section of the A1 to the west of Newcastle (between Junctions 65 and 80), the section of the route to the east of Durham between Junctions 61 and 62 of the A1(M) and two sections of the M1 between Sheffield and Rotherham, between Junctions 33 and 35.</p> <p>A number of sections of the route between Sheffield and Newcastle fall within various Noise Important Areas (NIAs) such as around Newcastle, Durham, Wetherby and the NIAs between Junctions 32 and 42 of the M1.</p> <p>The route also passes through AQMAs and NIAs away from the SRN such as the AQMA in Wakefield, Sheffield and the AQMA between Junctions 32 and 42 of the M1.</p>

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
<p>E Support the Yorkshire and North East visitor economy</p> <p>Support the Yorkshire and North East visitor economy by improving gateways to the Northumberland National Park, the Nidderdale AONB, the Yorkshire Dales National Park, North Pennines AONB and the North York Moors National Park</p>	<p>All route sections</p>	<p>Growing the economy</p> <ul style="list-style-type: none"> There is a need for understanding the visitor journey patterns and making sure route signing and technology (for example, mobile phone applications) meet this demand 	<p>It is noted in the <i>Visitor Economy and Transport in the North of England Report</i> by TfN that as of 2018, the visitor economy was attracting approximately 369 million visitors to the North of England, including more than 33 million on staying trips (domestic and overseas), generating a visitor expenditure of over £17 billion, including over £2 billion from overseas visitors to the UK.</p>	<p>The M1, A1 (including the M1/A1 intersection), southern part of the A1(M) and the A66 experience seasonal variations in demand due to leisure and tourism, with congestion and journey time unreliability during the summer peak periods. There is significant delay at/around:</p> <ul style="list-style-type: none"> the M1, where it meets the A616 that connects to the Peak District National Park the A174, which provides access to the North York Moors National Park the A1(M), where it meets the A66 that provides access to the Yorkshire Dales National Park the A1 at the Scottish border
<p>F Minimise the reliance on the local road network when collisions and closures occur on the SRN</p> <p>Minimise the impact on communities in locations such as Wakefield, Darlington, Hartlepool and Stockton-on-Tees due to strategic traffic using the local road network when collisions and closures occur on the SRN</p>	<ul style="list-style-type: none"> Wakefield (A638, A61) Darlington (A167, B6280) Hartlepool (A689) Stockton-on-Tees (A177, A1305) 	<p>Improving safety for all</p> <ul style="list-style-type: none"> There are safety concerns on designated SRN diversion routes, including height and weight restrictions <p>Network performance</p> <ul style="list-style-type: none"> Diversion routes disrupt the local road network and impact air quality 	<p>TfN's <i>Strategic Transport Plan</i> states that the very nature of the SRN as often a bypass of major towns and cities, means that incidents and closures result in periodic adverse impacts on the function of local networks.</p>	<p>There are a number of formal diversion routes on the London to Scotland East (North) route which pass through urban centres such as Wakefield (A638, A61), Darlington (A167, B6280), Hartlepool (A689) and Stockton-on-Tees (A177, A1305), and diverting traffic can cause significant local impacts.</p> <p>There are collisions recorded on the M1 and the A1 causing traffic to divert through urban areas especially Wakefield. A number of these urban centres already experience high levels of congestion and are less suitable for certain vehicle types such as HGVs, which can result in increased congestion, and environmental impacts.</p>
<p>G Support connectivity with sustainable transport modes</p> <p>Support effective connectivity to urban centres, including Sheffield, Leeds and Newcastle, through improved integration with sustainable transport modes to minimise the traffic impact on the route and benefit the environment</p>	<p>All route sections</p>	<p>Improving safety for all</p> <ul style="list-style-type: none"> There is a requirement for more crossing points and infrastructure for non-motorised users <p>Network performance and Improved environmental outcomes</p> <ul style="list-style-type: none"> There are severance issues for pedestrians and cyclists crossing the A1 around Newcastle Greater integration is needed with public transport, walking and cycling – to encourage transfer to sustainable modes Future proofing of the network is required as a result of changes in travel behaviour The continued reliance on cars in rural areas will contribute to high demand on the SRN where alternatives should be considered 	<p>TfN acknowledges the wider context of the climate emergency, with evidence suggesting that the majority of journeys now and in the future will continue to be on the road network, whether by zero emission vehicles, walking, cycling, bus or tram. Reducing greenhouse gas emissions from the transport network is a key priority and TfN's Board has recently adopted its Decarbonisation Strategy for the North (November 21), which sets out a decarbonisation trajectory and outlines.</p>	<p>All districts covered by the London to Scotland East (North) route are dominated by car travel based on commuting patterns.</p> <p>The route currently presents a number of challenges to active travel in terms of the severance effect on walking and cycling networks. In places, the route creates a physical barrier, meaning that active mode users need to navigate heavily congested junctions.</p>



**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 this chapter, we outline our proposed locational areas for further consideration, which will be explored in future road periods to achieve the London to Scotland East (North) route objectives and the Department for Transport's (DfT) 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 focused on reducing incident severity through a package of activities promoting 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 are collaborating 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 including Network Rail, to consider interventions to improve network performance. 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 technological 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 managing and operating the network to infrastructure design, scheme delivery and ensuring we meet our wider statutory obligations. In developing our 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 our 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 we can support a properly maintained, future-ready road network that is fitted to support the transition to electric vehicles, and 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 efficiency, and enable us to deliver more within our funding. We also expect this approach to help us support the Government's long-term aims for the nation, such as contributing to net zero carbon, and social values

Growing the economy

We recognise that the strategic road network is a significant economic asset for the UK and is essential for people to access jobs, and for businesses to move goods around the country. Our regional planning teams continue to work closely with local planning authorities to support sustainable growth and development aspirations, including by trying to improve integration between transport 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 to 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 is designed, built, operated and used for the future. This will enable safer journeys, faster delivery and an enhanced customer experience for all. The vision is structured around three themes: Design & Construction, Operations, and 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 26 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.

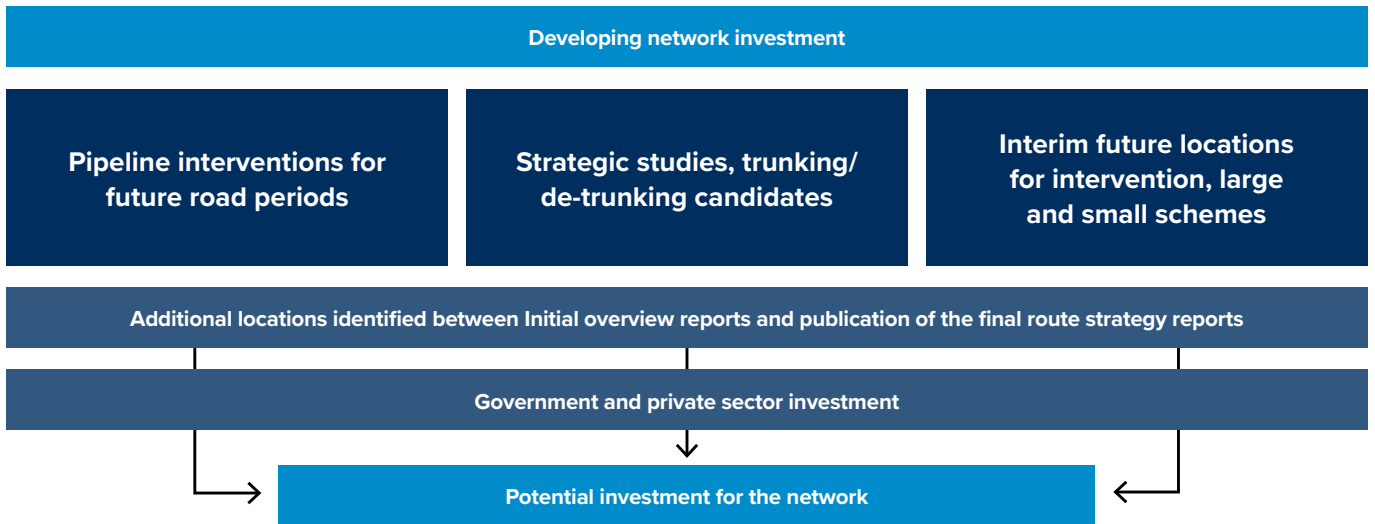


Figure 26: Process to identify potential investment on the network

Types of investment and funding sources

There are a variety of funding streams that enable us to invest in our network and that form part of our investment planning. These streams are summarised in the following section, along with the current committed schemes associated with each funding source for the London to Scotland East (North) route. Potential funding sources 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
 - 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 for streams may be made available to National Highways during the third road period 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 London to Scotland East (North) route:

Scheme number	Scheme	Description	Start of works	Open for traffic
Committed for the second road period (2020-2025)				
1	A1 Morpeth to Ellingham dualling ⁴⁶	Upgrading multiple sections of the A1 to dual carriageway to provide continuous high quality dual carriageway from Newcastle to Ellingham, north of Alnwick.	2022-23	2024-25
2	A19 Downhill Lane ⁴⁷	Significantly enhanced capacity on the junction between the A19 and the A1290 in Sunderland, supporting local plans for an International Advanced Manufacturing Park.	2020	Opened for traffic six months ahead of 2022/23 commitment
3	A1 Birtley to Coal House ⁴⁸	Route widening of the A1 south of Gateshead to dual-three lanes, including the replacement of the Allerdene Bridge. Linking with other schemes completed nearby, this will provide three lanes of capacity from the Metro Centre to the A194(M) interchange.	2021	2024-25
4	A1 Scotswood to North Brunton ⁴⁹	Narrow lane widening between Junction 74 (Scotswood) and Junction 79 (North Brunton) to allow three lanes of traffic through the junctions, and four lanes between some junctions.	2020	2022-23

⁴⁶ National Highways, *A1 Morpeth to Ellingham dualling*.

<https://nationalhighways.co.uk/our-roads/yorkshire-and-north-east/a1-morpeth-to-ellingham-dualling/#overview>

⁴⁷ National Highways, *A19 Downhill Lane junction improvement*.

<https://nationalhighways.co.uk/our-roads/yorkshire-and-north-east/a19-downhill-lane-junction-improvement/>

⁴⁸ National Highways, *A1 Birtley to Coal House*. <https://nationalhighways.co.uk/our-roads/yorkshire-and-north-east/a1-birtley-to-coal-house/>

⁴⁹ National Highways, *A1 Scotswood to North Brunton*.

<https://nationalhighways.co.uk/our-roads/yorkshire-and-north-east/a1-scotswood-to-north-brunton/>

RIS4 pipeline

The following uncommitted schemes are in the pipeline for consideration for inclusion in the fourth road period (2030-2035) on the London to Scotland East (North) route.

Scheme number	Scheme	Description
1	A19 north of Newcastle junctions	Scheme description in development
2	M1 Leeds Eastern Gateway	Scheme description in development
3	M1/M62 Lofthouse Interchange ⁵⁰	Improvements to the M1/M62 Lofthouse Interchange, to tackle problems with the current junction and to make sure it's fit for the future.

Other notable schemes

East Leeds Orbital Route (ELOR)⁵¹ is a major new dual carriageway scheme in a green corridor that aims to create new capacity and links for vehicles, walkers, cyclists and horse riders, plus reduce pressure on the existing Outer Ring Road. The ELOR is 7.5 kilometres in length and connects the Outer Ring Road at Red Hall around the eastern side of Leeds, and through the William Parkin Way link road at Thorpe Park into Junction 46 of the M1. The scheme was opened in August 2022.⁵²

At M1 Junction 33, Rotherham Borough Council will be creating three lanes in each direction on the A630 from the Catcliffe junction to the M1⁵³. The slip roads off the M1 will also be widened. As part of the improvements which have been funded by the Government's Local Growth Fund, new street lighting and signs, drainage and resurfacing will be completed.

⁵⁰ National Highways, *M1/M62 Lofthouse Interchange*. <https://nationalhighways.co.uk/our-roads/pipeline-of-possible-future-schemes/m1-m62-lofthouse-interchange/>

⁵¹ Leeds City Council, *East Leeds Extension transport improvements*.

<https://www.leeds.gov.uk/parking-roads-and-travel/road-improvement-schemes/east-leeds-extension-transport-improvements>

⁵² Leeds City Council (August 2022) *The East Leeds Orbital Route is fully open*. <https://news.leeds.gov.uk/news/the-east-leeds-orbital-route-is-fully-open>

⁵³ National Highways, *A630 Parkway upgrade (M1 Junction 33)*.

<https://nationalhighways.co.uk/our-roads/yorkshire-and-north-east/a630-parkway-upgrade-m1-junction-33/#overview>

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 often involve close working with key partners, including sub-national transport bodies and DfT, and can be used to help to decide on whether to fund any proposed improvements in the future.

National Highways were asked to explore changes to the SRN to ensure the network aligns with RIS2 strategic priorities reflected in the *Strategic business plan*⁵⁴. 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 have produced a shortlist of eighteen 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 local Highway Authority control and visa 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 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 problems at identified 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 London to Scotland East (North) 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 help 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 helped identify 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 overview reports, additional data from the regional traffic models will also be considered to enable the identification of locations for further investigation in future road periods.

Further development of any proposed mitigation at each location will follow National Highways' internal processes. In order to fund any proposed improvements, National Highways will draw on the funding streams as previously identified.

⁵⁴ National Highways (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 RIS2⁵⁵ that will not be in construction at the end of RP2, as well as the RIS4 pipeline. All these schemes will be kept under constant review
- The pipeline schemes announced in RIS2 is the most developed portfolio of potential interventions 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 with other government strategies 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.

Table 3 and Figure 25 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

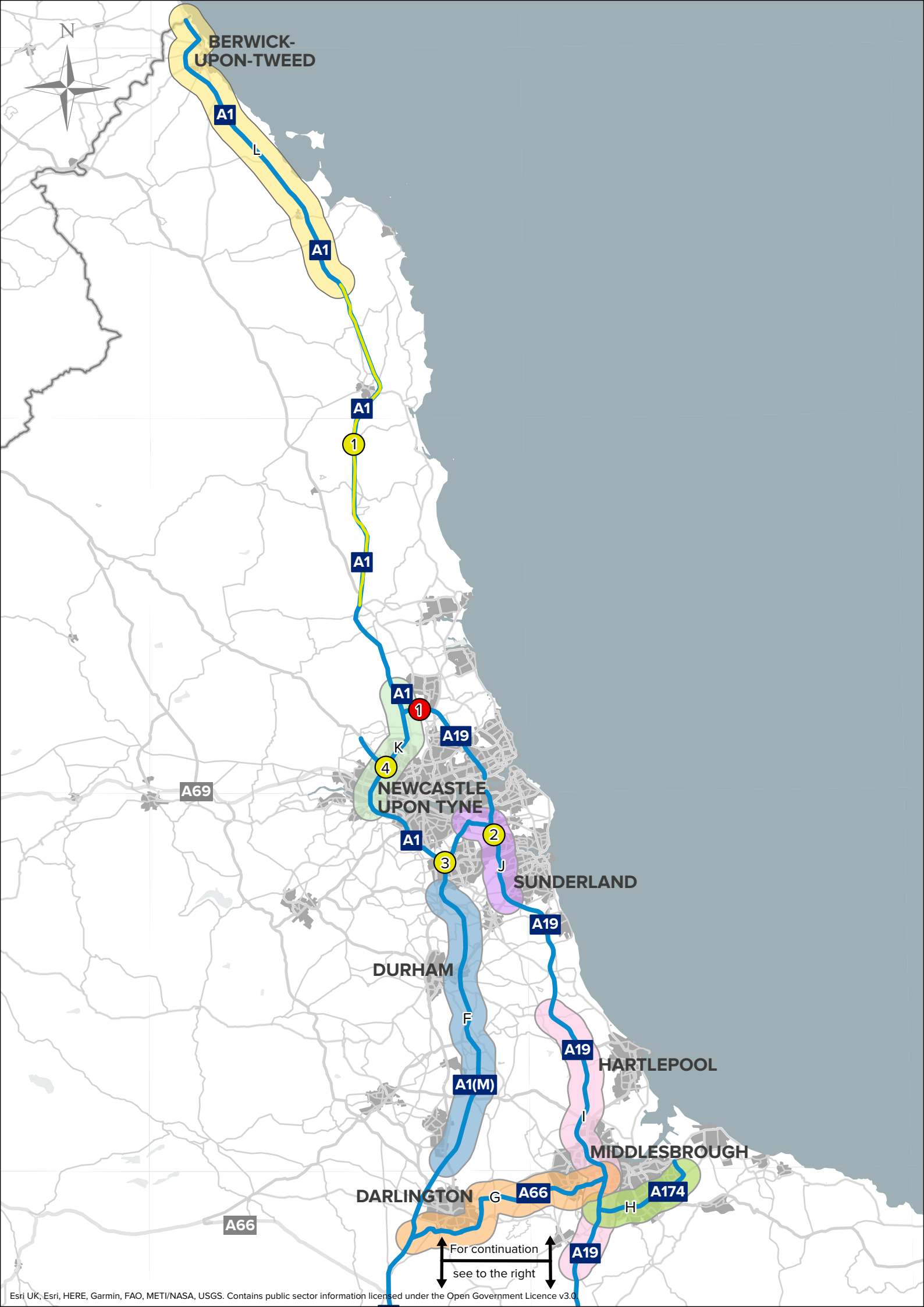
As part of the ongoing evolution of the route strategies toward final publication we will further strengthen its role in being a strategic planning tool for interested parties who have a stake in the SRN and its future.

⁵⁵ Plans for new smart motorways have now been cancelled and previously paused smart motorways will now not go ahead.

Table 3: Areas of interest for further investigation

Area location	Area of interest	Area issues	Now	Future road periods
M1				
M1 between Sheffield and Rotherham from Junction 33 to Junction 35	A	There are a number of receptors that may be more susceptible to air quality issues within 100 metres of the section of the M1 between Sheffield and Rotherham, between Junctions 33 and 35. Freight connectivity is important along this section. There are recurring congestion issues at SRN junctions, as local traffic in Sheffield and Rotherham are forced to cross the SRN. This section of the M1 acts as a gateway to the Advanced Manufacturing and Innovation District (AMID) in Sheffield, which is a key hub for economic activity in the North. Rotherham falls under the Government's levelling up category 1 .	✓	✓
M1 from Thorpe Hesley (Junction 35) to Haigh (Junction 38)	B	There are proposed housing and mixed-use sites close to this area which could result in increased numbers of vehicles on the SRN. There are a number of receptors that may be more susceptible to air quality issues within 100 metres of this section of the SRN.	✓	✓
M1 from Hall Green (Junction 39) to Rothwell (Junction 44)	C	Safety issues have been recorded between Junction 39 and Junction 40. Freight connectivity is important along this section of the M1.	✓	✓
A1(M)				
A1(M) Wetherby from Junction 45 to Junction 46	D	There are receptors within 300 metres of the SRN which may be more sensitive to high noise levels . There is also a noise important area (NIA) adjacent to this section of the A1(M). There are a number of receptors that may be more susceptible to air quality issues within 100 metres of the SRN.	✓	✓
A1(M) from Flaxby (Junction 47) to Leeming Bar (Junction 51)	E	Safety issues have been recorded along this section of the A1(M). Several incidents were recorded between Harrogate and Darlington. North-South freight connectivity is important to support economic growth. There are significant proposed employment, housing and mixed-use sites close to this section. This section provides links to the Nidderdale AONB, which is a key tourist attraction in the region. Trips to this attraction are key to the visitor economy of the North.	✓	✓
A1(M) from Aycliffe Interchange (Junction 59) to Chester le Street (Junction 63)	F	This section of the A1(M) provides links to the North Pennines AONB, which is a key tourist attraction in the region and important for the visitor economy of the North. There are significant employment, housing and mixed-use sites proposed in Darlington. Diversion Routes for Unplanned Events (DRUEs) in this area pass through Darlington town centre, causing localised congestion within the town centre when incidents occur on the SRN.	✓	✓
A66				
A66 and A66(M) from the A1(M) to the A19	G	Safety issues have been recorded along the western sections of this route. Recurring congestion was recorded at the western end of the A66 where it meets the A1(M). There are a number of receptors that could potentially be more susceptible to air quality and noise issues that lie within close proximity of the A66 and the M1. Severance issues have been identified along parts of this section, limiting the use of active modes of transport. A number of safety issues recorded in this area involved walkers, cyclists and horse riders. This section acts as a gateway to Teesside Freeport sites, and provides access for passengers and freight.	✓	✓

Area location	Area of interest	Area issues	Now	Future road periods
A174				
A174 from the A19 to the A1053	H	Safety issues have been recorded along the western end of this section. A notable proportion involved walkers, cyclists and horse riders. There are a number of air quality and noise receptors that lie within close proximity of this section. Seasonal delay has been observed where the route provides access to the North York Moors National Park.	✓	✓
A19				
A19 from Kirklevington (A19/A67 junction) to Doxford Park (A19/A690/B1286 junction)	I	Safety issues have been recorded, particularly along the section to the west of Hartlepool. A number of safety issues recorded in this area involved walkers, cyclists and horse riders. Recurring congestion has been recorded, particularly around Middlesbrough. Severance issues have been identified along parts of this section, limiting the use of active modes of transport. DRUEs in this area pass through Middlesbrough town centre, causing localised congestion within the town centre when incidents occur on the SRN. This section acts as a gateway to Teesside Freeport sites .	✓	✓
A19 from Hastings Hill (A183 junction) to Whitemare Pool (the A184/A194(M) junction).	J	Safety issues and recurring congestion have been recorded. This section of the A19 acts as a gateway to the International Advanced Manufacturing Park (IAMP) in Sunderland to the West of the A19, which is a key hub for economic activity in the North.	✓	✓
A1				
A1 from Blaydon on Tyne (Junction 73) to Shotton (Junction 80)	K	Safety issues have been recorded along the section of the route through Junction 75. A notable proportion of safety issues recorded in this area involved walkers, cyclists and horse riders. Recurring congestion has been recorded along this section. There are receptors within 300 metres of the SRN which may be more sensitive to high noise levels . This section also lies within a Noise Important Area . Integration with sustainable modes of travel is not currently maximised when considering the urban nature of the area.	✓	✓
A1 from Ellingham to Scottish border	L	There are sections of the A1 between Brownieside and Berwick-upon-Tweed which received an iRAP star rating of 1. According to the latest available STATS19 data, there are also concentrations of collisions which have occurred along this section of the A1, in both directions. The southbound section has the highest occurrence of collisions involving walkers, cyclists or horse riders on the route.	✓	✓



BERWICK-UPON-TWEED

A1

A1

1

A1

A1

A1

A1

A19

4

NEWCASTLE UPON TYNE

A69

A1

3

2

SUNDERLAND

A19

DURHAM

F

A1(M)

A19

HARTLEPOOL

A19

MIDDLESBROUGH

DARLINGTON

G

A66

H

A174

A19

For continuation see to the right

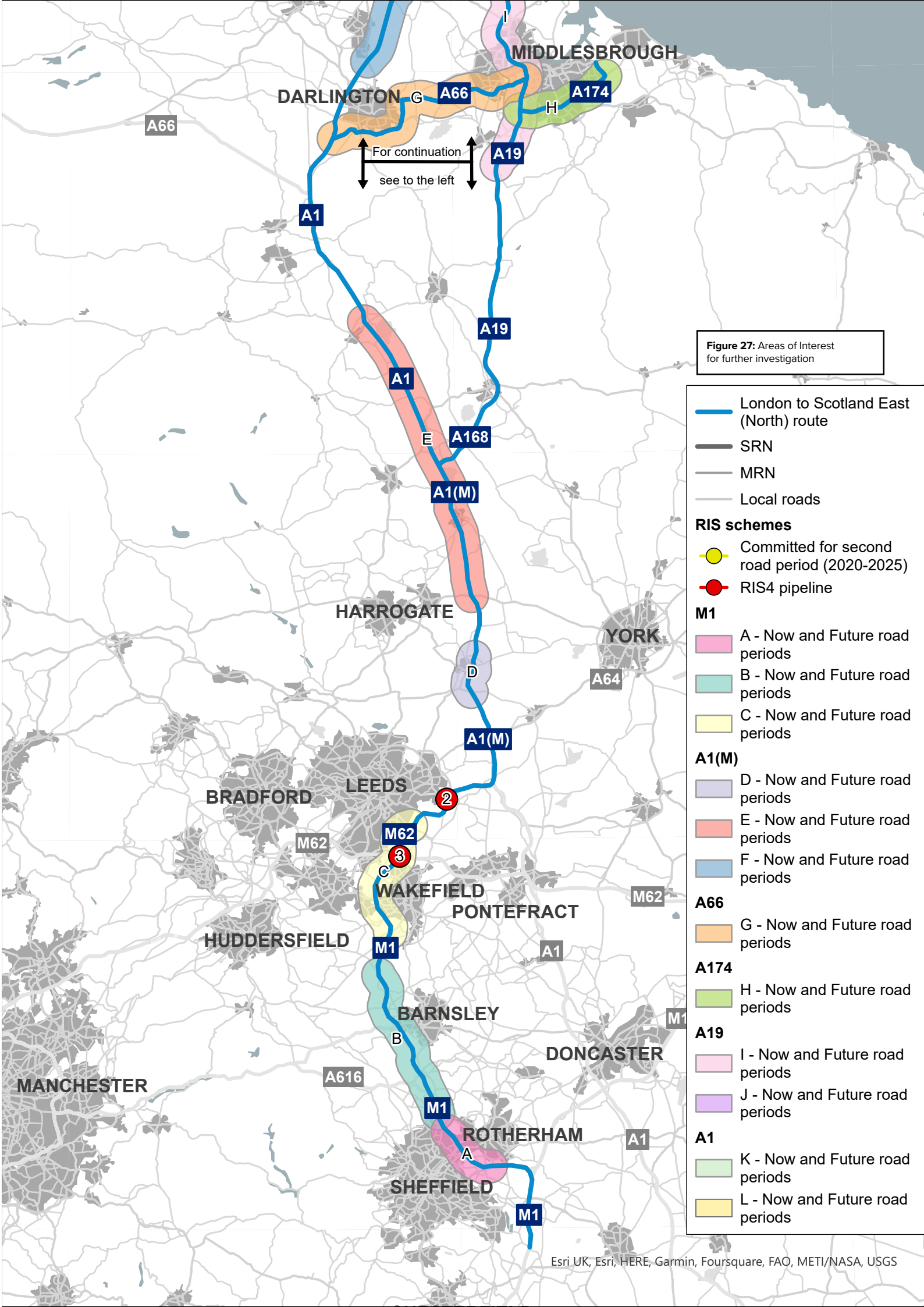


Figure 27: Areas of Interest for further investigation

- London to Scotland East (North) route
- SRN
- MRN
- Local roads
- RIS schemes**
- Committed for second road period (2020-2025)
- RIS4 pipeline
- M1**
- A - Now and Future road periods
- B - Now and Future road periods
- C - Now and Future road periods
- A1(M)**
- D - Now and Future road periods
- E - Now and Future road periods
- F - Now and Future road periods
- A66**
- G - Now and Future road periods
- A174**
- H - Now and Future road periods
- A19**
- I - Now and Future road periods
- J - Now and Future road periods
- A1**
- K - Now and Future road periods
- L - Now and Future road periods



**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*⁵⁶ 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

⁵⁶ 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		<p>The severity of a collision is based on the severity of the most severely injured casualty and is broken down into:</p> <ul style="list-style-type: none"> • 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

Term	Acronym	Description
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.
Diversionsary 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.

Glossary of terms

Term	Acronym	Description
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.
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.

Term	Acronym	Description
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.
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.

Glossary of terms

Term	Acronym	Description
Smart motorway		<p>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:</p> <ol style="list-style-type: none"> 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. <p>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:</p> <ul style="list-style-type: none"> • 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		<p>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.</p>
Special Areas of Conservation	SACs	<p>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.</p>
STATS19		<p>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.</p>
Statutory consultee		<p>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.</p>
Strategic Rail Freight Interchange		<p>A large multi-purpose rail freight interchange and distribution centre linked into both the rail and road system.</p>
Strategic Road Network	SRN	<p>The strategic road network (SRN) covers more than 4,500 miles of motorways and major A-roads.</p>

Term	Acronym	Description
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

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Registered office Bridge House, 1 Walnut Tree Close, Guildford GU1 4LZ

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