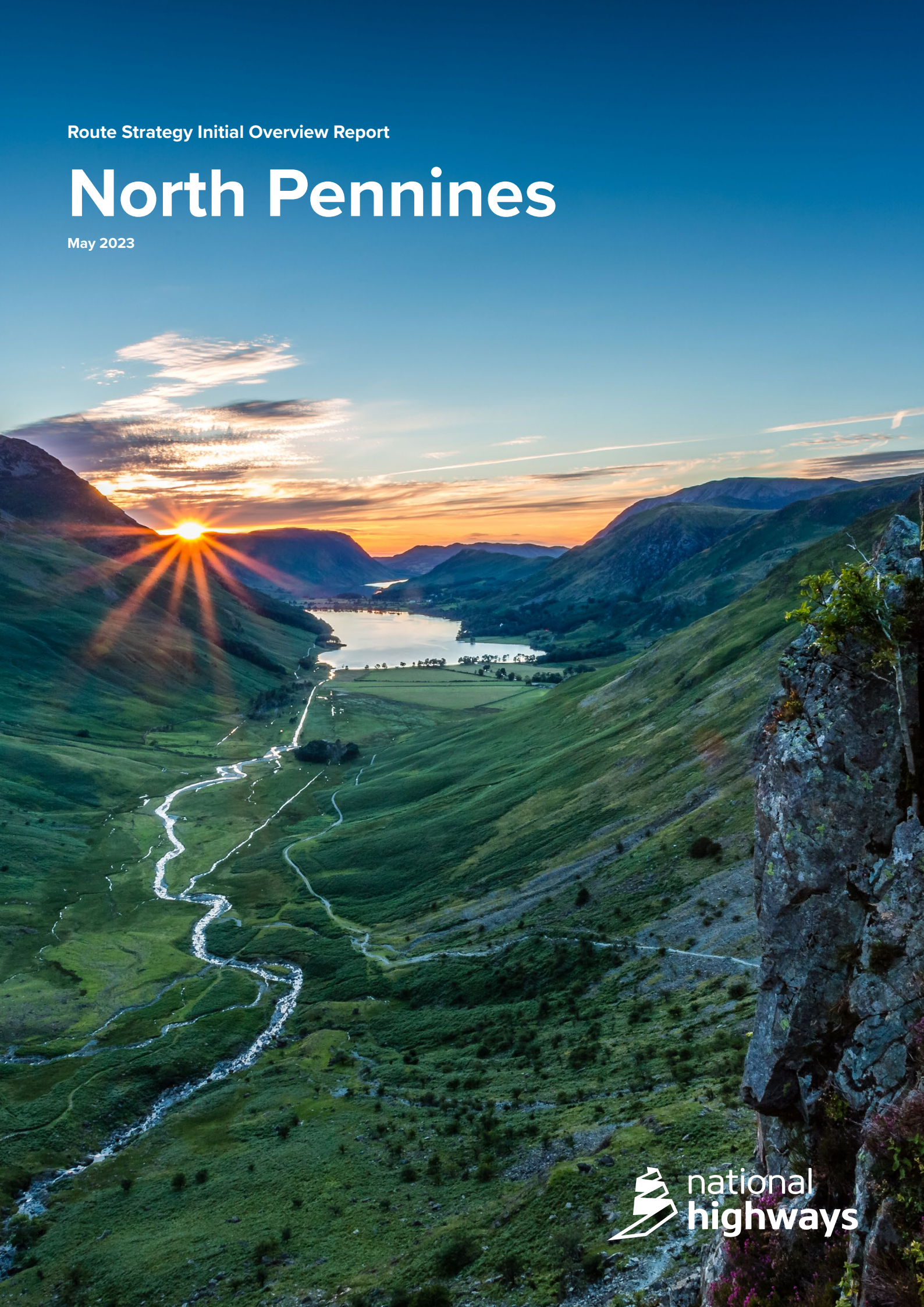
Route Strategy Initial Overview Report

North Pennines

May 2023



national highways

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Sub-national Transport Bodies

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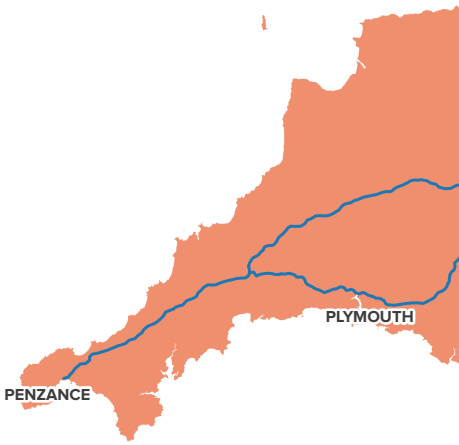
There are 17 routes relating to route strategies across our strategic road network (SRN). To take better account of our customers' end-to-end journeys, we have split some of the longer routes into sub-strategies across 20 reports.

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

Executive summary

Introduction

Our strategic road network (SRN) is the backbone of the country. 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 North Pennines 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 North Pennines route is a group of east-west connections comprising approximately 157 miles of the SRN, and has a critical function in supporting the economies of the North of England. The roads covered by the North Pennines route connect with roads covered by other route strategies. These include the M6 (London to Scotland West), the A1(M) (London to Scotland East), the A66 east of the A1(M) (London to Scotland East) and the A19 (London to Scotland East). While the South Pennines (West) route does not directly connect to the North Pennines route, the M62 also provides trans-Pennine connectivity and so the routes have an inter-dependant relationship in terms of resilience for trans-Pennine journeys.

Challenges and issues

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

Improving safety for all

- Network layout variability is a significant concern among interested parties, particularly in relation to visiting traffic where drivers lack familiarity with the road layout
- The route is predominantly rated 1 or 2 stars in terms of its international road assessment programme (iRAP) star rating
- STATS19 data shows that there are sections of the route where people have been killed or seriously injured. These include walkers, cyclists and horse riders

Network performance

- Variation in journey time reliability is experienced across the route
- Notable delay occurs during Friday evenings during the summer peak periods, associated with domestic tourism to the Lake District National Park
- Major employers such as BAE and Sellafield are particularly reliant on the SRN, particularly due to their large catchment areas
- Limited technology on the route creates challenges related to managing disruptive incidents and communicating diversion routes

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

- Minimising adverse impacts of noise on road user and resident health and quality of life
- Minimising the number of closures on sections of the A590 and A66 at risk of flooding from surface water
- 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

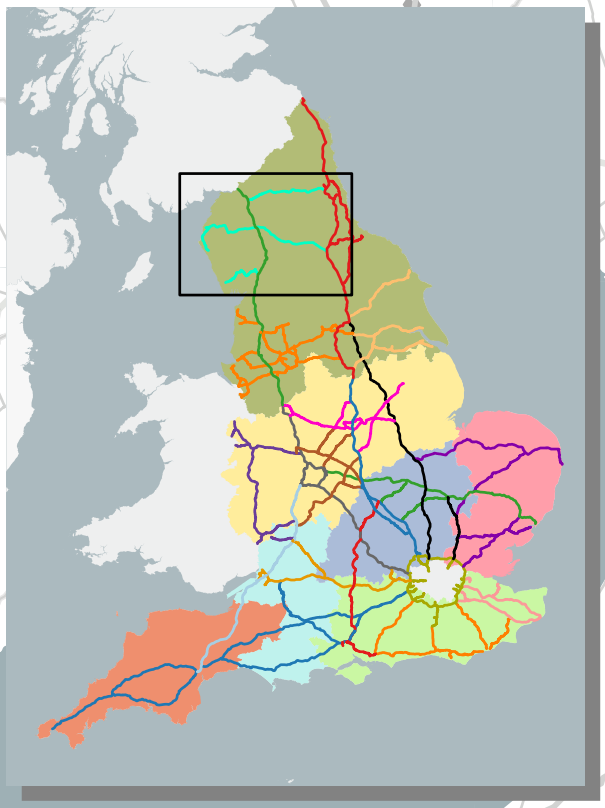
- Inward investment into the North Pennines will depend on the continuing performance of the SRN, which may be constrained by delays
- Future growth may also be constrained by the current underutilisation of freight assets, due to a lack of joined up infrastructure and alternative logistics solutions being more attractive
- Car ownership levels, alongside limited out-of-town cycling network and bus services, contributes to social exclusion and restricts access to educational and employment opportunities, which has a knock-on effect on local economic growth

Managing and planning the SRN for the future

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

A technology-enabled network

- There are large stretches of the SRN of up to 40 kilometres where there are no electric vehicle charging points
- There is a concern around communication with drivers, whereby the communication of real time information on traffic conditions, incidents and parking is lacking



M6
A69
CARLISLE
M6
MARYPORT
A66
PENRITH
WORKINGTON
A66
A595
WHITEHAVEN
M6
A595
WINDERMERE
KENDAL
M6
A590
A590
BARROW-IN-FURNESS
M6
MORECAMBE


N
A1
A69
A69
NEWCASTLE
UPON TYNE
A1
A1(M)
A19
A1(M)
A66
A66
DARLINGTON
A66
A66
A19
A1
North Pennines route
SRN
MRN
Local roads

Initial route objectives

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

		DfT's strategic objectives for our network					
Ref.	**Route objective**	**Improve safety for all**	**Network performance**	**Improved environmental outcomes**	**Growing the economy**	**Managing and planning the SRN for the future**	**A technology-enabled network**
A	**Promote a resilient and consistent network** Improve user experience of safe and reliable journeys through provision of a resilient and consistent network across the route.	✓	✓				
B	**Support reliable access to the east and west coast ports and airports** Support reliable access to the east and west coast ports and airports, serviced by the A66, A69, A590 and A595, to encourage sustainable economic growth and strategic connectivity.	✓	✓		✓		
C	**Support trans-Pennine connectivity** Support trans-Pennine connectivity for all users, particularly freight and coaches, between the Cumbrian and North East energy coasts and centres of highly skilled industries, and support, where appropriate, future growth locations, to assist levelling up the region.		✓		✓		✓
D	**Support regionally significant sustainable development** Support access to regionally significant sustainable development, in locations including Carlisle, Whitehaven, Kendal, Barrow-in-Furness, Ulverston, Cockermouth and Newcastle.		✓	✓	✓	✓	
E	**Support the visitor economy** Support the North of England visitor economy by improving gateways to the Lake District National Park such as Newby Bridge, Kendal, Keswick and Whitehaven, and other significant tourist destinations accessed by the route, such as the North Pennines Area of Outstanding Natural Beauty, the Yorkshire Dales and the Frontiers of the Roman Empire.	✓	✓		✓		
F	**Support connectivity for rural communities** Support effective local connectivity through improved integration with sustainable transport modes on the A66, A595, A590 and A69, benefitting rural communities and the environment.			✓	✓	✓	
G	**Better informed drivers** Improve communications to better inform drivers and improve their end to end journey experience, to support the regional and national economy.			✓	✓	✓	✓

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

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

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

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

For clarity, this document does not:

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

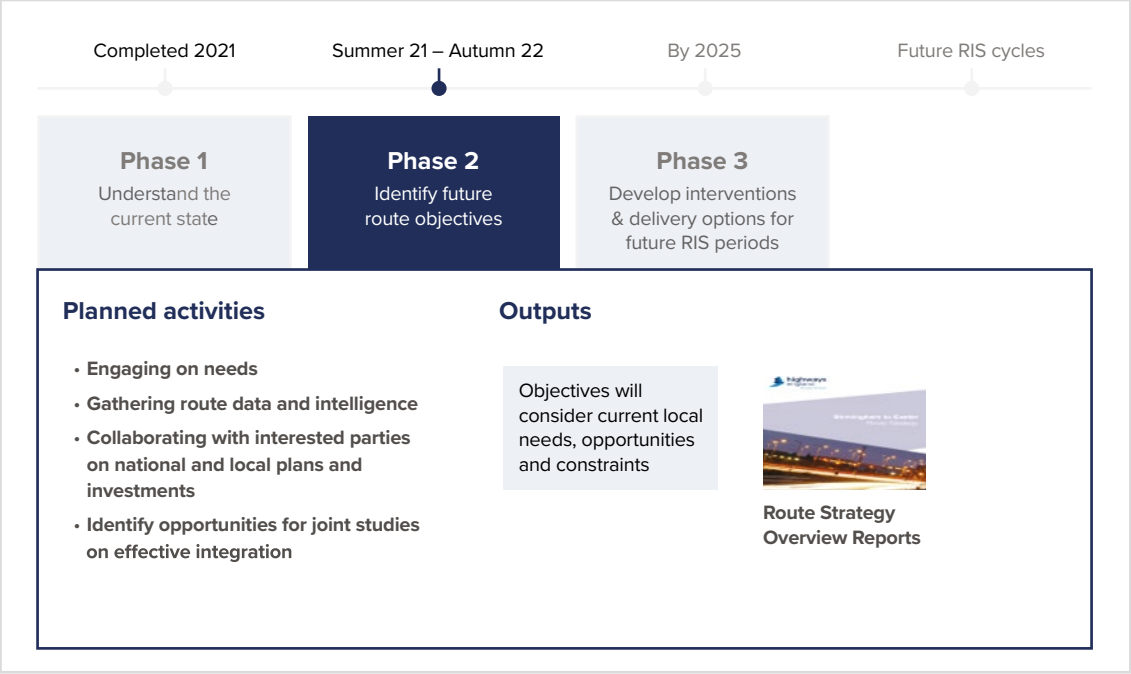


Figure 1: The route strategies delivery phases

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.

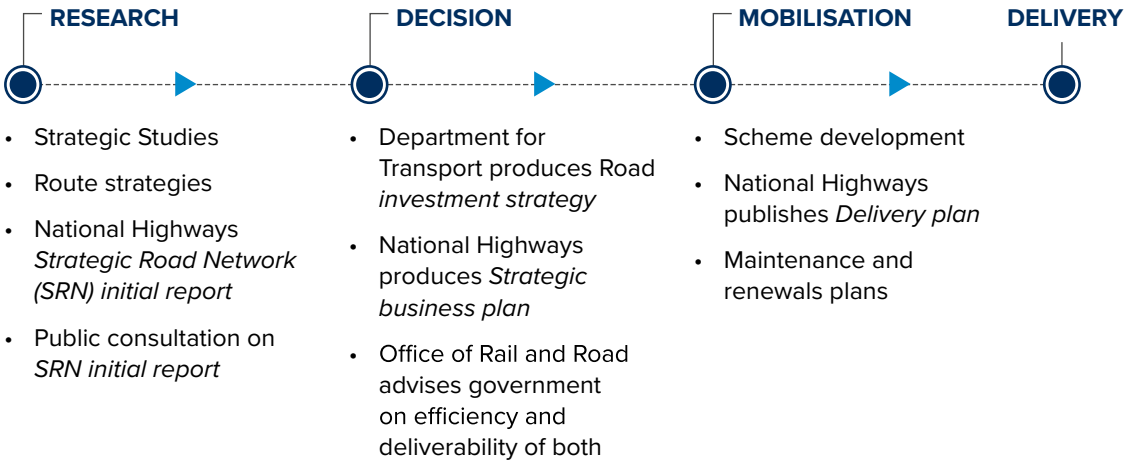


Figure 2: The RIS development cycle

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/

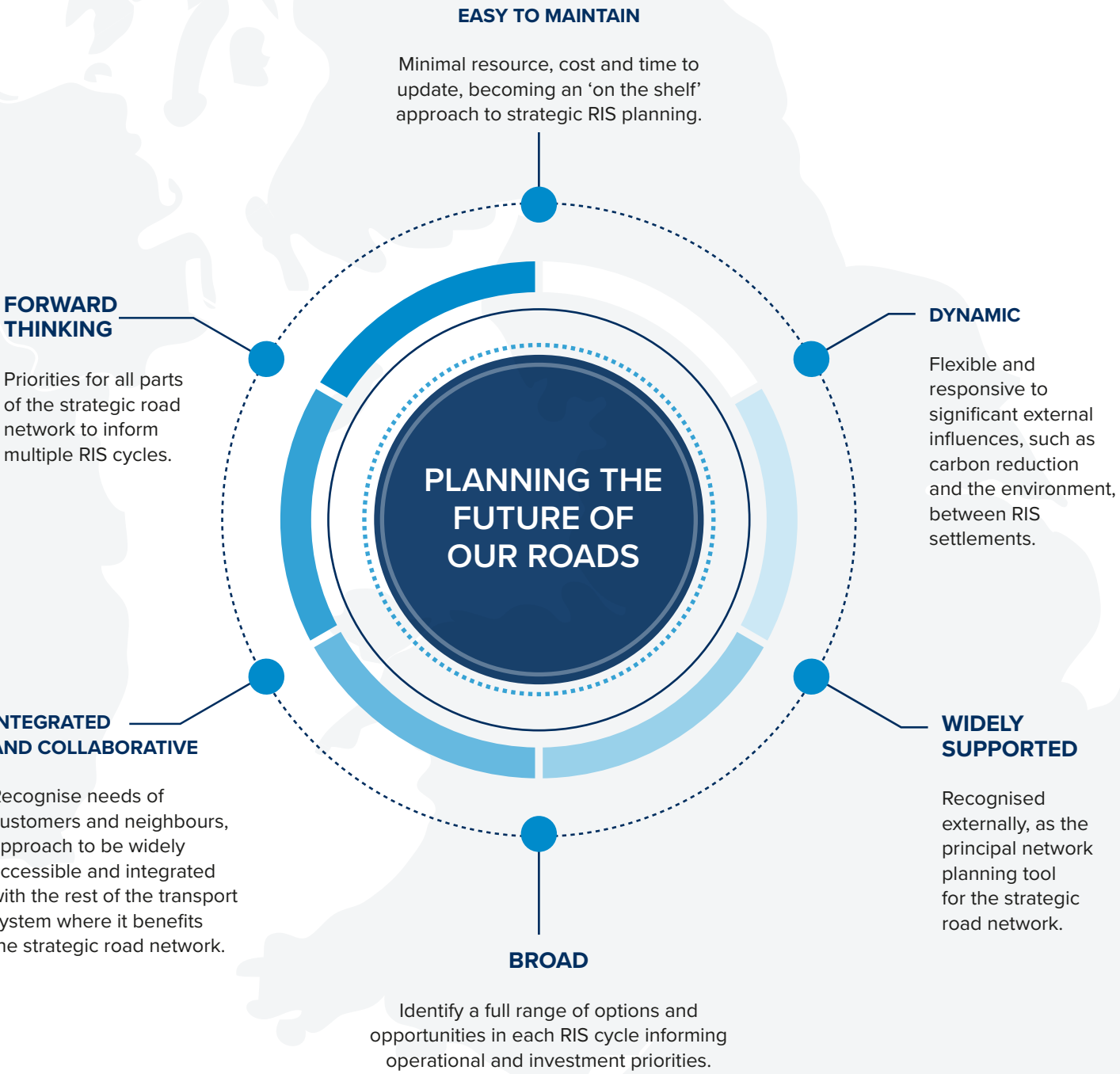


Figure 3: Our ambition for route strategies

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 1700 responses we received via the online feedback tool are shown in Figure 4 and Figure 5.

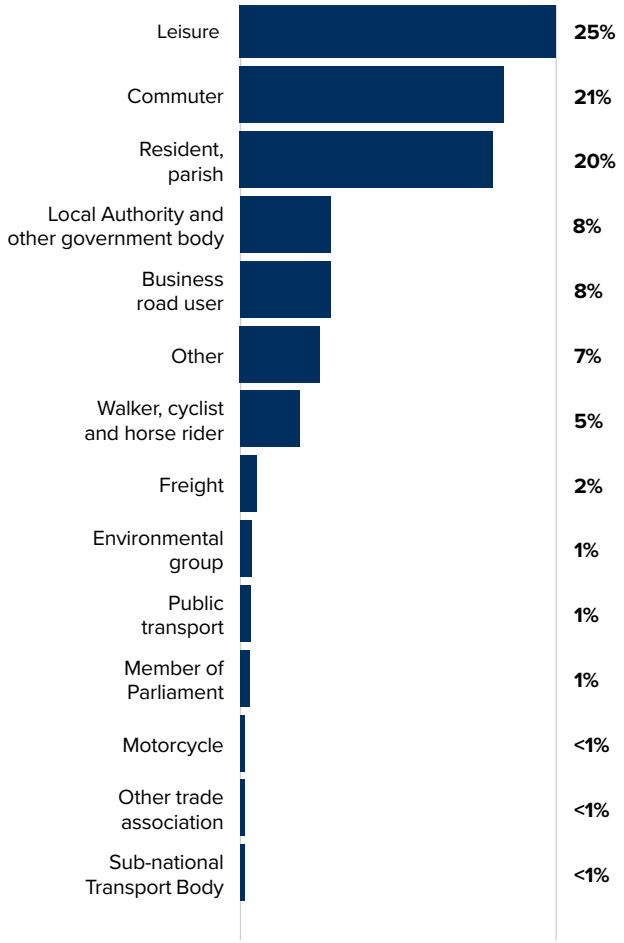


Figure 4: All responses to online tool by participant type

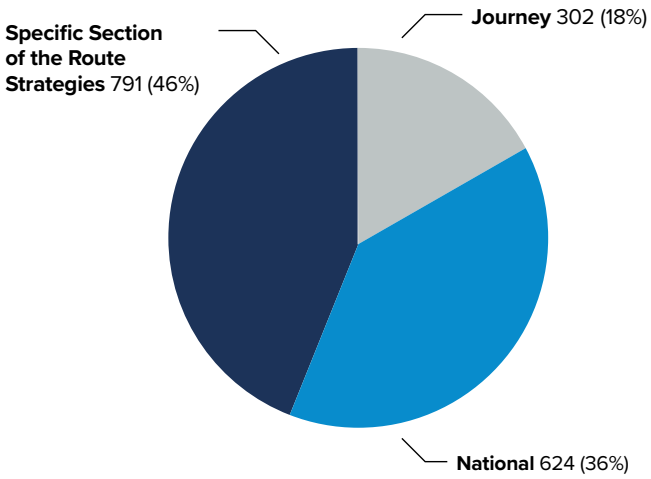


Figure 5: All response to online tool by type

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

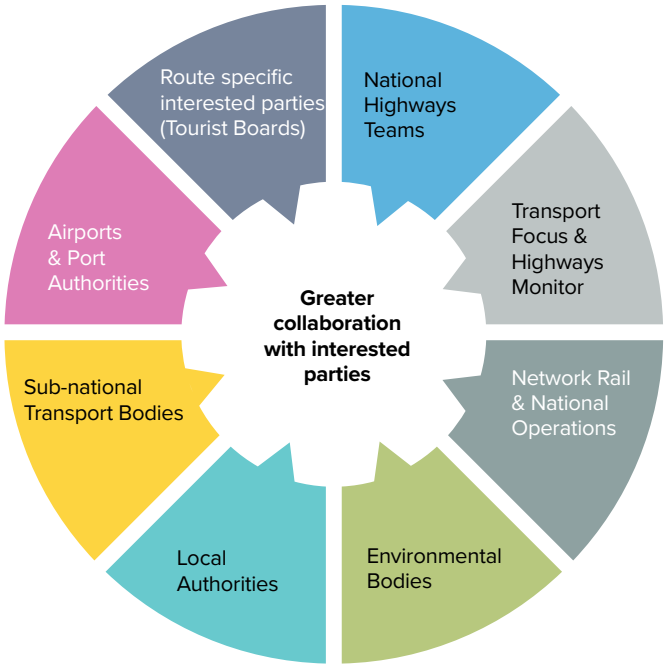


Figure 6: Interested parties involved in the route strategy engagement

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.

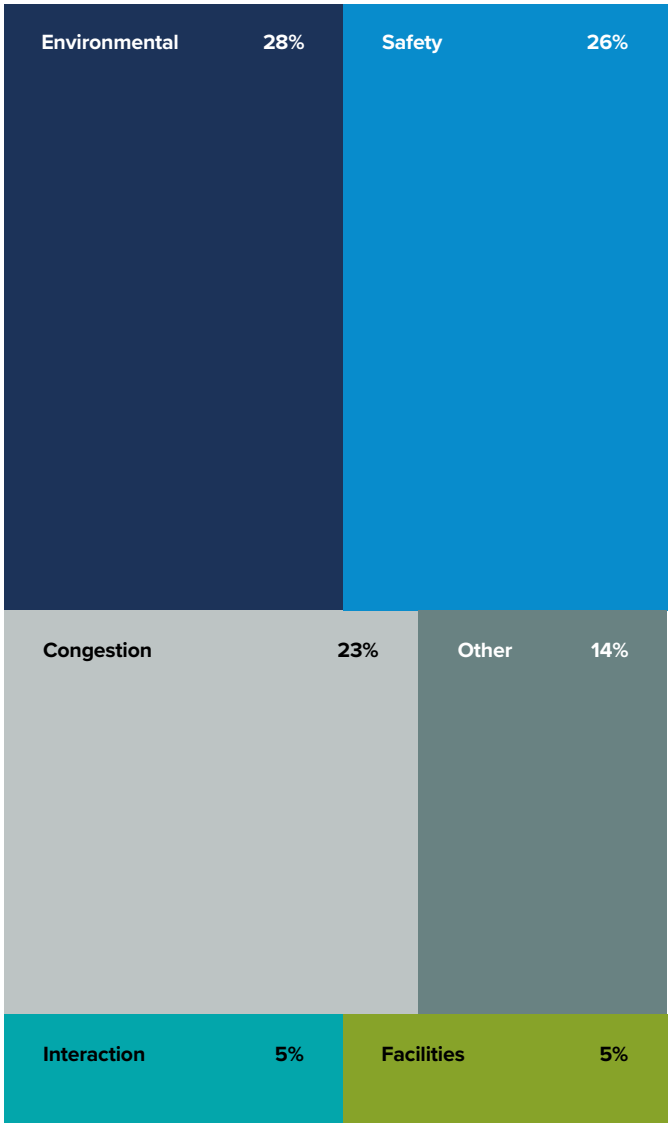


Figure 8: National themes from feedback through the online tool

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.

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 (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, 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. DfT have produced a shortlist of 18 trunking and two de-trunking candidates, identified following the draft RIS2 public consultation in 2018, for us to assess desirability and viability of asset transfer. De-trunking is the process of returning a National Highways' road to the local highway authority control and vice versa for trunking. These candidates were put forward by a range of external interested parties, including local authorities, Local Enterprise Partnerships and chambers of commerce, then shortlisted by DfT.

There is ongoing work to review the assessment evidence and recommendations, after which government ministers are expected to announce the candidates that will progress to the detailed development stage, which will be led by National Highways and incorporated in the forward study programme and wider RIS3 process.

IMPROVED ENVIRONMENTAL OUTCOMES

NET ZERO HIGHWAYS: NATIONAL HIGHWAYS' 2030/2040/2050 PLAN[12].
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, 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 differ from previous strategies by taking a more balanced view on expanding the 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 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

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

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

MANAGING AND PLANNING THE SRN FOR THE FUTURE

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

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

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

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

A TECHNOLOGY-ENABLED NETWORK

DIGITAL ROADS: Our ambition for Digital Roads is to continue to harness data, technology and connectivity of people to places and communities and networks to improve the way the SRN is designed, built, operated and used. Our recently published *Digital roads strategy* (September 2021)[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 & 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 (September 2021) *Digital roads.* https://nationalhighways.co.uk/our-work/digital-data-and-technology/digital-roads/

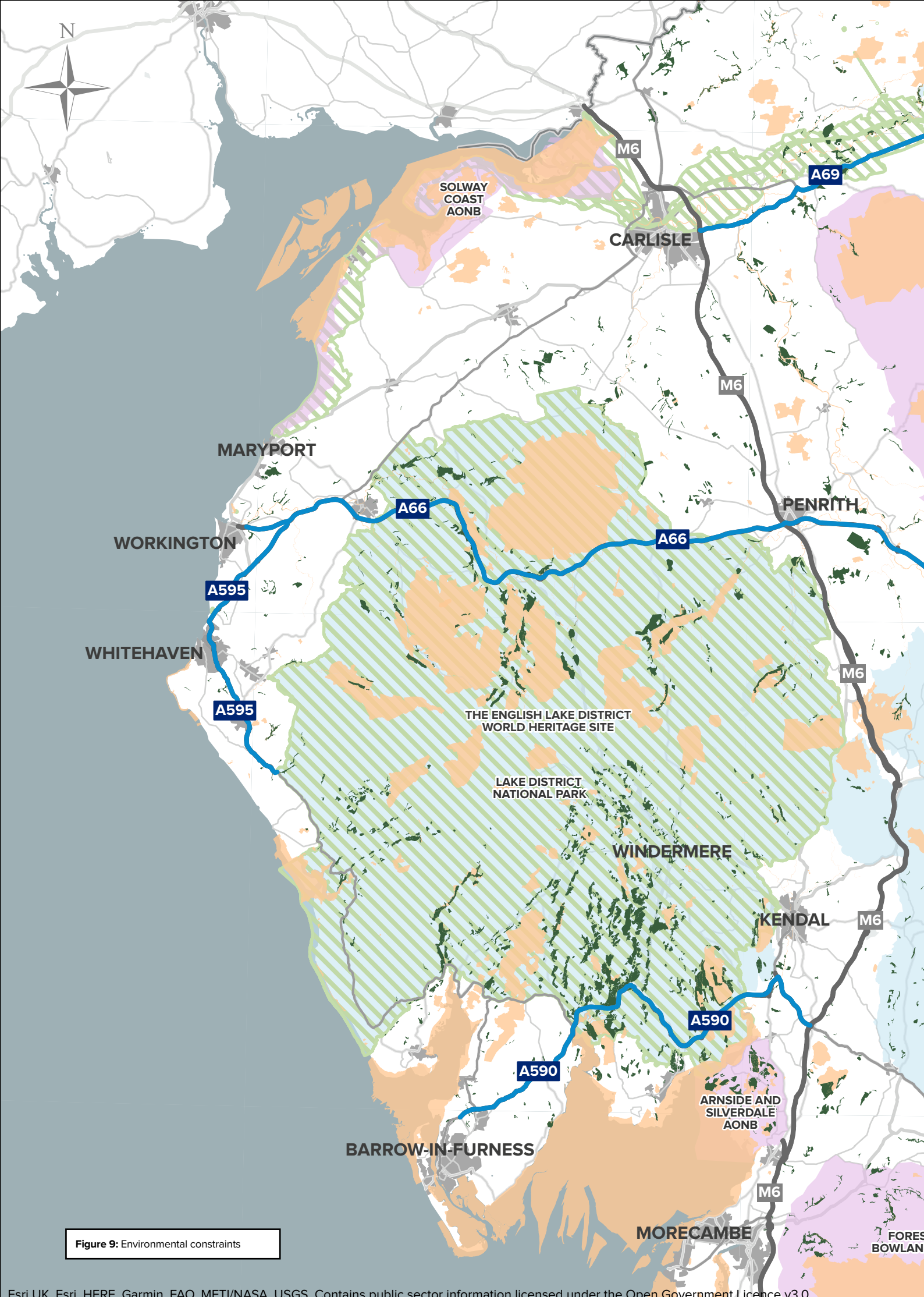
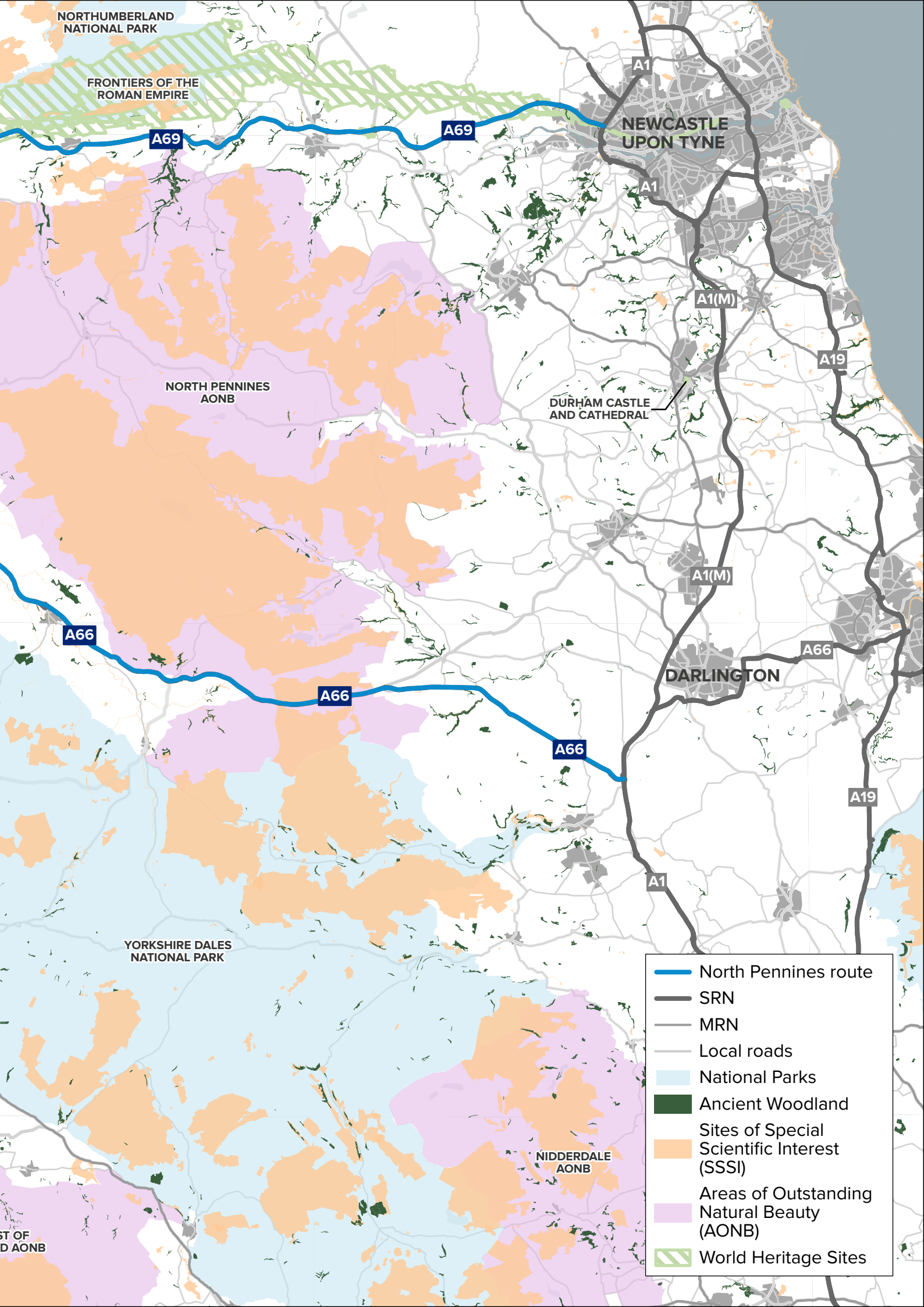


Figure 9: Environmental constraints


NORTHUMBERLAND NATIONAL PARK
FRONTIERS OF THE ROMAN EMPIRE
A69
A69
A1
NEWCASTLE UPON TYNE
A1
A1(M)
A19
NORTH PENNINES AONB
DURHAM CASTLE AND CATHEDRAL
A1(M)
A66
A66
DARLINGTON
A66
A66
A19
A1
YORKSHIRE DALES NATIONAL PARK
NIDDERDALE AONB
North Pennines 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 North Pennines route is a group of east-west connections comprising approximately 157 miles of the SRN, and has a critical function in supporting the economies of the North of England.

The North Pennines route, as shown in Figure 10, is in a large but sparsely populated area, connecting rural communities to larger villages and towns, while accommodating large numbers of visitors throughout the year. The roads on the route are a mix of single and dual carriageways, with at-grade junctions at regular intervals to connect to the local road network. The route is made of three east–west corridors: the A69, the A590, and the A595 and A66. The roads covered by the route connect with roads covered by other route strategies. These include the M6 (London to Scotland West), the A1(M) (London to Scotland East), A66 east of the A1(M) (London to Scotland East) and the A19 (London to Scotland East). While the South Pennines (West) route does not directly connect to the North Pennines route, the M62 also provides trans-Pennine connectivity and so the routes have an inter-dependant relationship in terms of resilience for trans-Pennine journeys.

The A66 and A69 are key roads providing trans-Pennine connectivity between the North East and North West of England. They connect ports, cities, and popular sites of tourism, such as the Lake District National Park and the North Pennines Area of Outstanding Natural Beauty (AONB). While both roads support a significant amount of freight, tourist traffic and commuters, their layout varies between dual carriageway and single carriageway. To the west of the M6, the A590 and A595 provide access to significant employment sites and highly skilled industries, including those at Barrow-in-Furness, the Port of Barrow, Sellafield, and the Port of Workington. The A590 connects the M6 with the Furness peninsula and serves as the main route for tourists entering the southern Lake District. The A595 is the primary route serving coastal communities in West Cumbria, connecting Sellafield to the A66. Both of these roads are a mix of dual carriageway and single carriageway but the A595 is mostly single carriageway (other than at Lillyhall).

Both roads have regular junctions, integrating with the local highway network and connecting rural communities to larger villages and towns.

Together, these roads support a diverse economy in the North East and Cumbria. Within Cumbria, 235,000 people are employed across 23,000 active businesses and enterprises[15]. The Cumbria Local Enterprise Partnership works with nine key sectors that make up over two-thirds of Cumbria's economy, in terms of both economic value and employment. These sectors include nuclear, advanced manufacturing, tourism and construction, alongside traditional industries, such as agriculture, forestry & fishing.

The North East Local Enterprise Partnership area employs over 850,000 people across 53,530 enterprises within health, manufacturing, energy, retail, education, business administration, accommodation and food services. The economy, when measured in terms of Gross Value Added (GVA) levels, is performing below the national average, at 16% per head below the output for England[16].

This route strategy is based on the road network as of the start of the second road period (2020 – 2025). During the first road period (2015 – 2020), no new major schemes were opened to traffic on the North Pennines route. It is planned that one new major scheme, the A66 Northern Trans-Pennine upgrade, will be under construction in the North Pennines route area during the second road period (2020-2025), and open for traffic during the third road period (2025-2030). The scheme is planned to dual the remaining sections of single carriageway on the A66 between the A1(M) and the M6. This is intended to improve safety, help make journeys more reliable, and support the regional and local economy. 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.

15 Cumbria Local Enterprise Partnership (2022) *Facts and Figures:* Cumbria and the people who live and work here. https://www.thecumbrialep.co.uk/facts-figures/

16 Transport North East (2021) *North East Transport Plan*. https://www.transportnortheast.gov.uk/transportplan/

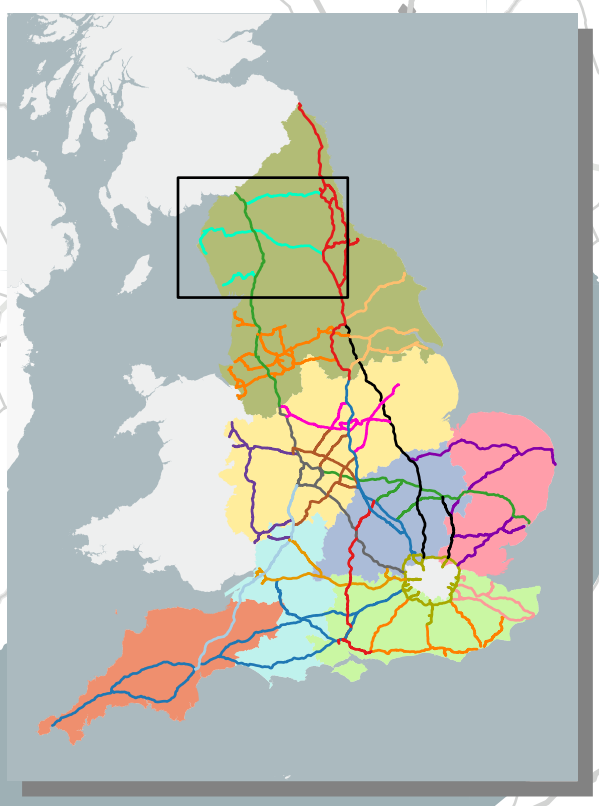
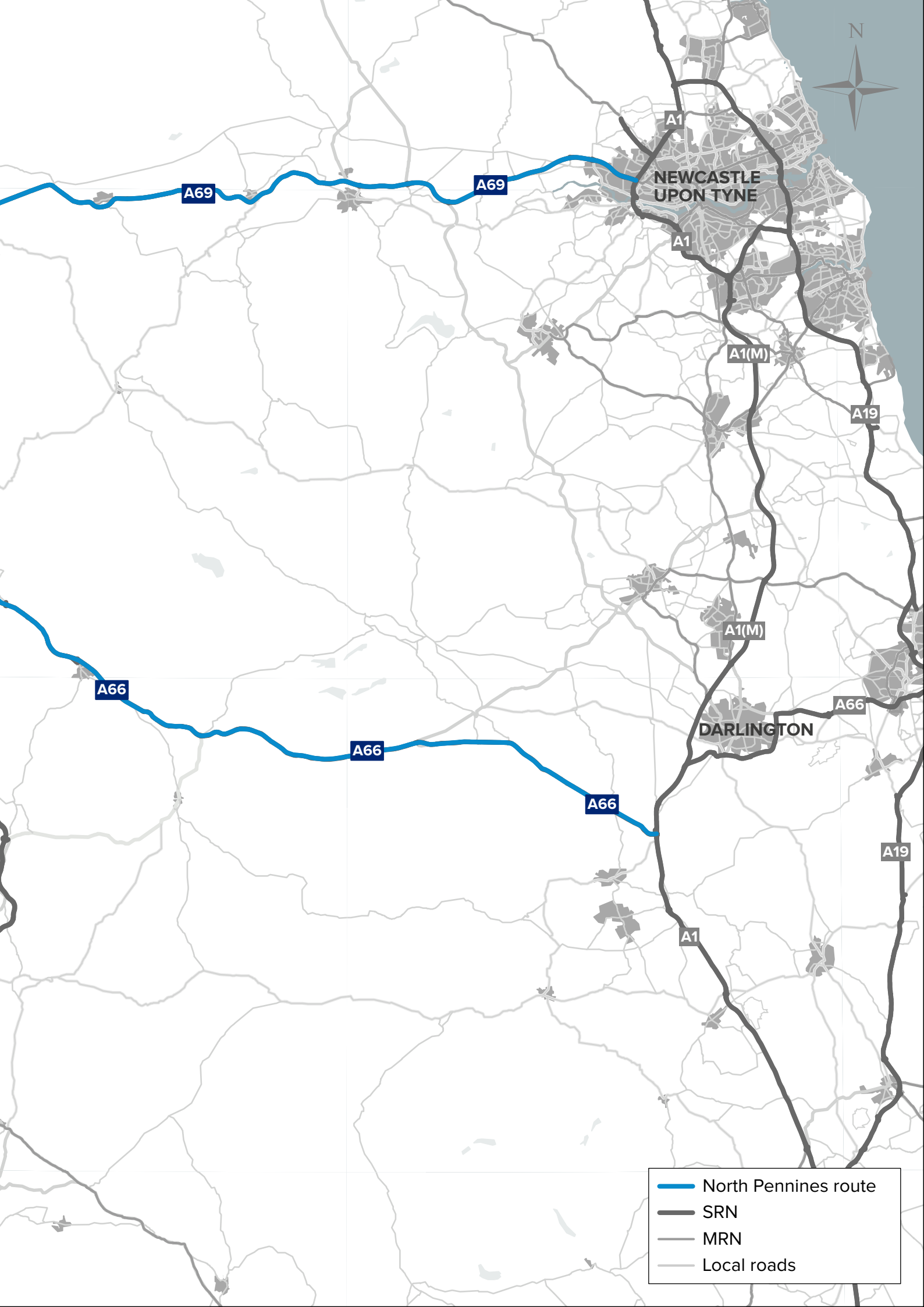


Figure 10: The route


N
A69
A69
A1
NEWCASTLE
UPON TYNE
A1
A1(M)
A19
A1(M)
A66
A66
DARLINGTON
A66
A66
A19
A1
North Pennines route
SRN
MRN
Local roads

Listening to your feedback

03 Engagement with customers and neighbours

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

Engagement with customers and neighbours in the North Pennines 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 North Pennines area. We gathered evidence from a cross-section of Members of Parliament (MPs), interested parties, road users and communities at a route level to understand their needs for the future. This built on engagement that had taken place with national interested parties, such as environmental groups, organisations representing road users, business organisations and transport campaigning groups. This engagement has informed the development of the route objectives.

Engagement took place through:

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

Regional workshops: As part of a programme of workshops with interested parties at a national and regional level, we invited interested parties to workshops on route strategies for the North Pennines 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 North Pennines route, regional interested parties were invited to workshops or to use the online form to share their views and feedback.

The information gathered was a mix of evidence, studies and personal experience. All the evidence gathered through these engagement methods was considered alongside route analysis and data to inform the development of the route objectives. The evidence was supplemented by route-based information from Transport Focus' *Strategic Road User Survey*[17] to gain an understanding of the breadth of feedback.

Key themes from engagement

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

i) Improving safety for all

- Perceived lack of safety at some locations along the route, for drivers and non-motorised users alike. The inconsistency of the route layout and poor signage provision was raised as a safety concern
- Importance of improved resilience of the network around safety, extreme weather events, and lengthy diversion routes in the event of road closures

ii) Network performance

- Limited network resilience. This was seen as likely to impact on strategic journey times
- Limited provision for integration with public transport, walking and cycling. There was concern that the network is geared towards car dependency and may inhibit the use of other modes

iii) Improved environmental outcomes

- Climate change and the manner in which the network responds to the demands for motorised traffic. Concern was expressed over the associated environmental impacts resulting from road travel

iv) Growing the economy

- Connectivity challenges for rural communities. This includes the impact of seasonal visitor economy traffic, as this is likely to constrain the economic growth of the region
- Connectivity challenges for freight. This can have an impact on the efficient transfer of goods to and from the ports, gateways and national distribution centres
- Issues of connectivity to the east and west coast ports. This is considered likely to impact the region's capacity to become a market leader in the low carbon sector
- Limited provision of heavy goods vehicle (HGV) parking and freight facilities on the A66, A590 and A69. There is concern that this impacts the efficient operation of freight over long distances
- Concern for how the route will cope with future developments and the associated increased demand on the network

v) Managing and planning the SRN for the future

- Our engagement did not highlight any particular comments in this area

vi) A technology-enabled network

- A lack of signage and communication of real time information with drivers. This led to concerns of the impact on driver experience and their ability to plan their journeys effectively
- A lack of electric vehicle charging facilities across the route. There was concern that increased electric vehicles on the network in the future would not be met by charging facilities

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

Engagement quotes from customers and neighbours

A69:

- "The A69 is a key part of the east-west SRN linking the Newcastle City region to West Cumbria and South West Scotland. But the route still suffers from reliability issues. In particular, there is a lack of overtaking opportunities along the section of the route in Cumbria, which impacts both on journey times, but also road safety as driver frustration leads to inappropriate overtaking on single carriageway sections." (Route strategies engagement)
- "Good surface condition with no noticeable potholes." (Transport Focus, SRUS)
- "Every week I avoid dangerous near misses from overtaking vehicles on the wrong side, as do many other people I know." (Route strategies engagement)
- "Comfortable drive with reasonable traffic, beautiful scenery." (Transport Focus, SRUS)

A595:

- "A595 is a key visitor route and improvements needed to deliver key policy of 'attract and disperse' to access the Lake District Coast / Western Lake District."(Route strategies engagement)
- "Dual carriageway made journey easier." (Transport Focus, SRUS)
- "County would benefit from more cycle routes." (Route strategies engagement)
- "Worst congestion ever experienced, making it unpleasant to visit during summer months." (Route strategies engagement)

A66:

- Regarding junctions at Broughton: "Too many accidents at these two junctions." (Route strategies engagement)
- "Road surface in good condition." (Transport Focus, SRUS)
- "Always a good flow of traffic even in the road works." (Transport Focus, SRUS)
- "Opportunity to improve driver information on key routes." (Route strategies engagement)
- "Light traffic, moving well." (Transport Focus, SRUS)
- "Truck stop needed on A66." (Route strategies engagement)
- "The road is regularly maintained." (Transport Focus, SRUS)

A590:

- "Incidents on the route lead to large increases in journey times, with long diversion routes." (Route strategies engagement)
- "Frequent accidents on the A590." (Route strategies engagement)
- "No roadworks or holdups." (Transport Focus, SRUS)
- "Public transport is not a viable option when accessing Cumbria." (Route strategies engagement)
- "Lack of fast, regular public transport. Need of good bus service to accommodate socio-demographic structure - ageing population, young leaving and older people entering to retire. Also, some issues regarding rural isolation." (Route strategies engagement)

Figure 11: Quotes from customers and neighbours

Route satisfaction

Satisfaction scores have been obtained from Transport Focus through their Strategic Roads User Satisfaction Survey from the last 12 months to May 2022. It covers the roads in this route but it should be noted that the satisfaction scores may not fully align with the extent of the roads across the route. Figure 12 below 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 hub[18].

The engagement themes and feedback from MPs, interested parties, road users and communities has been considered as part of the wider analysis in Section 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: A66, A69, A590, A595

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

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

Figure 12: Satisfaction scores from headline results

18 Transport Focus (2022) *Transport Focus Website*. https://transportfocusdatahub.org.uk/

Working with our partners

04 Network collaboration

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

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

An integrated transport network

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

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*[19], and within our *Strategic business plan*[20] and *Delivery plan*[21]. 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*[22], 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.

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

19 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
20 National Highways (2020) *Strategic business plan: 2020 – 2025.* https://nationalhighways.co.uk/strategic-business-plan/
21 National Highways (2020) *Delivery plan: 2020 – 2025.* https://nationalhighways.co.uk/delivery-plan/
22 National Highways (2021) *Vision for route strategies.* https://nationalhighways.co.uk/media/w0vhd3un/vision-for-route-strategies.pdf

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)[23] in 2019. It is due to be updated by 2024. The Strategic Transport Plan was informed by the 2017 initial *Major Roads Report*[24] (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 North Pennines 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.

West Coast – Sheffield City Region, strengthening rail links along the West Coast corridor between the advanced manufacturing sites in Cheshire East, Warrington, Cumbria, Lancashire, Greater Manchester and Sheffield City Region, with improved connectivity from the North into Scotland.

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.

23 Transport for the North (2019) *Strategic Transport Plan*. https://transportforthenorth.com/wp-content/uploads/TfN-final-strategic-transport-plan-2019.pdf
24 Transport for the North (December 2021) *Major Roads Report.* https://transportforthenorth.com/reports/major-roads-report-dec-2021/

There are three schemes located in the North Pennines route area: the A595 Grizebeck and A595 Bothel improvements, and the Kendal Northern Access Route. TfN considers these schemes ready to be taken forward into construction in the second road period (2020-2025).

TfN also acknowledges the wider context of the climate emergency. Evidence suggests the majority of journeys 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 for TfN. TfN's board has recently adopted its Decarbonisation strategy for the North (November 21), which sets out a decarbonisation trajectory and outlines the intermediate targets required to reach the overall net or near zero emissions year. By 2045, TfN is aiming for carbon emissions from surface transport in the North to reach near zero. The Decarbonisation strategy highlights how transport improvements could support the clean energy industry in the region.

As part of work undertaken to develop TfN's *Long term rail strategy*[25] (published January 2018), TfN has also commissioned a study of options for the future of Carlisle Station and its surrounding infrastructure. The study will consider various scenarios for long-term service levels along the West Coast Main Line, Glasgow South Western Line, Cumbrian Coast, Settle and Carlisle Railway, Newcastle and Carlisle Railway, and potentially a reopened Borders Railway. The costs and benefits of the infrastructure required to support possible future services will be assessed. This will take account of the need to split and join 400 metre-long HS2 services to and from Glasgow and Edinburgh at Carlisle, which is still part of the Integrated Rail Plan's specification for HS2.

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.

25 Transport for the North (January 2018) *Long Term Rail Strategy.* https://transportforthenorth.com/wp-content/uploads/Long-Term-Rail-Strategy_TfN.pdf

Within the North Pennines route area, the MRN forms connections to all four roads that make up the route, as shown in Figure 13. The A595 (MRN section) and A689 combine to link the A69 east of Carlisle to the A66 at Cockermouth, via Junction 44 of the M6. Along the west coast, both the A595 and A590 continue as MRN sections between Calder Bridge and Barrow-in-Furness. The A590 MRN connection at Dalton-in-Furness is noted as a location that experiences delays during peak traffic periods. The A5094 connects as a loop through Whitehaven, joining the A595 at Inkerman Terrace and Pelican Garage. Both of these locations experience peak period traffic delays. The A591 connects the A590 at Brettargh Holt to Kendal and the A65 joins the A590 (and the M6 at Junction 36) to routes to the South East towards Skipton. At the eastern end of the A69, the A186 provides a MRN connection into Newcastle-upon-Tyne.

Within this area there is one joint transport committee consisting of two Mayoral Combined Authorities (MCAs); the North of Tyne CA and the North East CA. The North East Joint Transport Committee may receive funding as part of the Government's City Region Sustainable Transport Settlements (CRSTS) £5.7 billion fund for local transport improvements. Thereby, potential future CRSTS schemes may interact with the SRN and we will work with the North East Joint Transport Committee to ensure these will interact with the SRN effectively.

Freight and logistics

The future of freight: A long-term plan (DfT June 2022)[26] 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.

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 area[27]. Prior to the impact of Covid-19 there were 7.4 million jobs in the region[28]. The North of England contributes over £364 billion GVA towards the UK economy[29].

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 North boasts a wealth of freight assets that give the region a strong freight capability across transport modes. Relevant to this route, these assets include:

26 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
27 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
28 Office for National Statistics (May 2021) *Labour Force Survey (Jan-Mar 2020).* https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/datasets/headlinelabourforcesurveyindicatorsforallregionshi00
29 Office for National Statistics (2021) *Regional Gross Value Added (balanced) by industry: all ITL regions.* https://www.ons.gov.uk/economy/grossvalueaddedgva/datasets/nominalandrealregionalgrossvalueaddedbalancedbyindustry

- eleven major ports (three with provisional freeport status) in addition to other smaller ports located on the Tyne, Tees and across Cumbria
- seven international airports including Durham Tees Valley and Newcastle
- a section of the SRN focused on the A66 and A66 east-west corridors
- a strategic rail network principally comprising of the west coast main line and east coast main line that connect the north of England to the South and the trans-Pennine routes
- a significant amount of distribution centre capacity

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. The result is weakened multimodal capabilities. Given that 80% of road freight in the North is domestic traffic[30], addressing these gaps in connectivity would benefit operation across the SRN. Furthermore, most of these trips are short haul, making it difficult to justify the use of rail on commercial or efficiency grounds.

The Department of Transport's 2017 *National survey of lorry parking*[31] showed that the North West (which covers the North Pennines route area) needed an estimated 15% more practical lorry parking spaces, equivalent to 61 spaces. The survey highlights that the North West region is at 54% lorry parking utilisation, approaching the 70% utilisation level defined as increasingly serious where drivers have to search carefully for 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.

Diversionary routes

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

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

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

31 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

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.

Network Rail's *Delivery plan for 2019-2024*[32] 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 its local customers and stakeholders, more quickly than if such decisions were to be made at a national level.

In Cumbria, important stations on the rail network include Oxenholme and Penrith, which act as leisure and tourist gateways to the South and North Lakes respectively, and are therefore important links to the SRN. In the North East, key stations include Newcastle, Darlington and Sunderland. Our route strategies understand the role of the SRN in providing access to and from these key facilities.

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 (2022) *Our delivery plan for 2019 – 2024.* https://www.networkrail.co.uk/who-we-are/publications-and-resources/our-delivery-plan-for-2019-2024/

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*[33] 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.

In Cumbria, an important example is the M6, which enables journeys to Glasgow and Edinburgh via the A74(M) and M74, to Cairnryan via the A75, and to Larne in Northern Ireland via ferry. These are important routes for both passengers and freight. The SRN is considered 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.

In Cumbria, this means that the A66 and A595 need to be considered not only within the context of the local access they provide, but also the connectivity they offer to the ports of Workington, Whitehaven and Barrow-in-Furness on the Cumbrian Coast, as well as to Carlisle Airport, close to the M6 and the MRN. Further afield, the M6 provides onward connectivity to the main ports and airports of England and Scotland.

In the North East, Teesport is the third largest port in the UK. It is strategically significant, with freight connections to Scandinavia, the Baltics and the Netherlands. Further up the coast, the Port of Tyne features an international passenger terminal, and Newcastle International Airport flies to over 80 destinations.

33 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

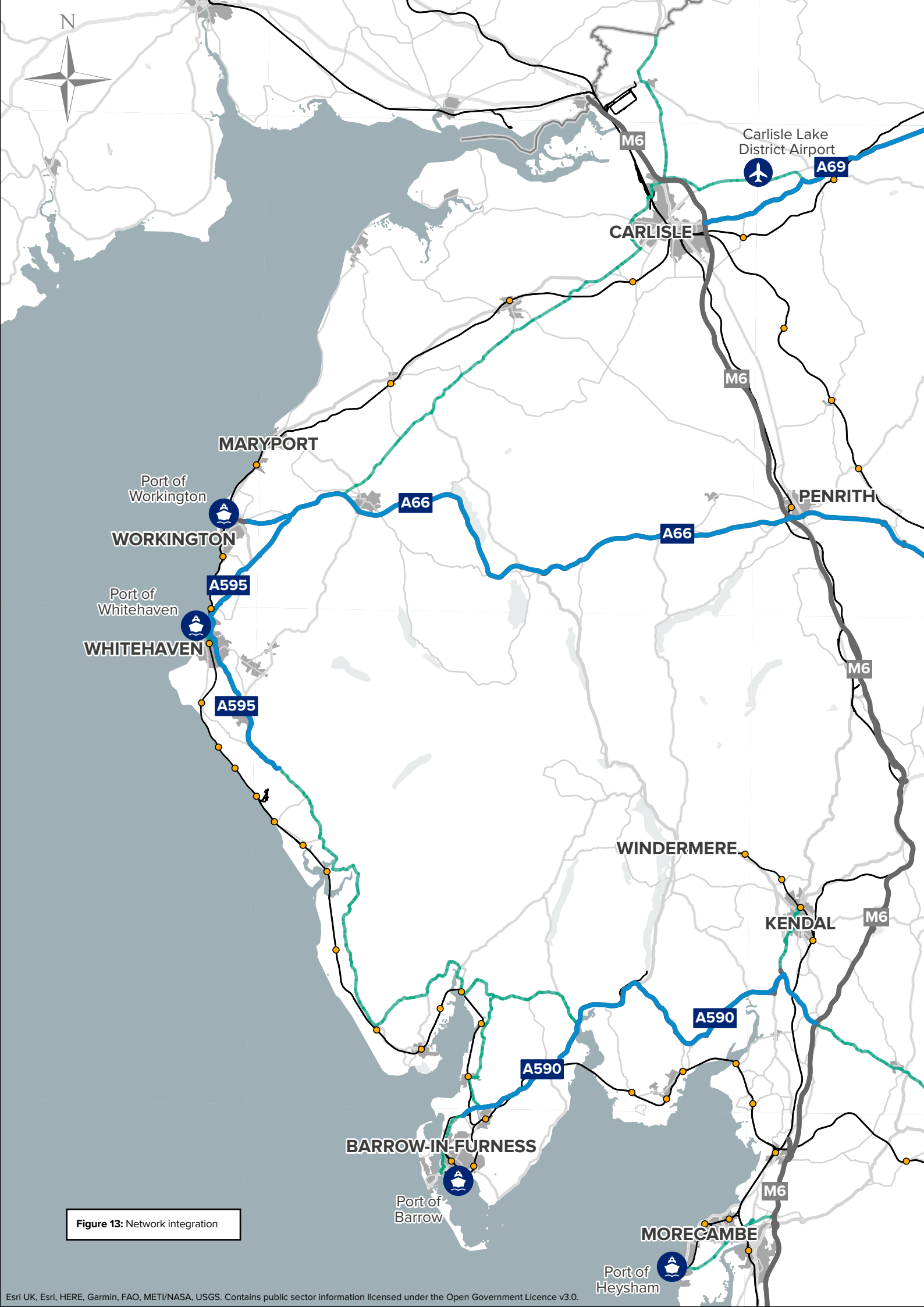
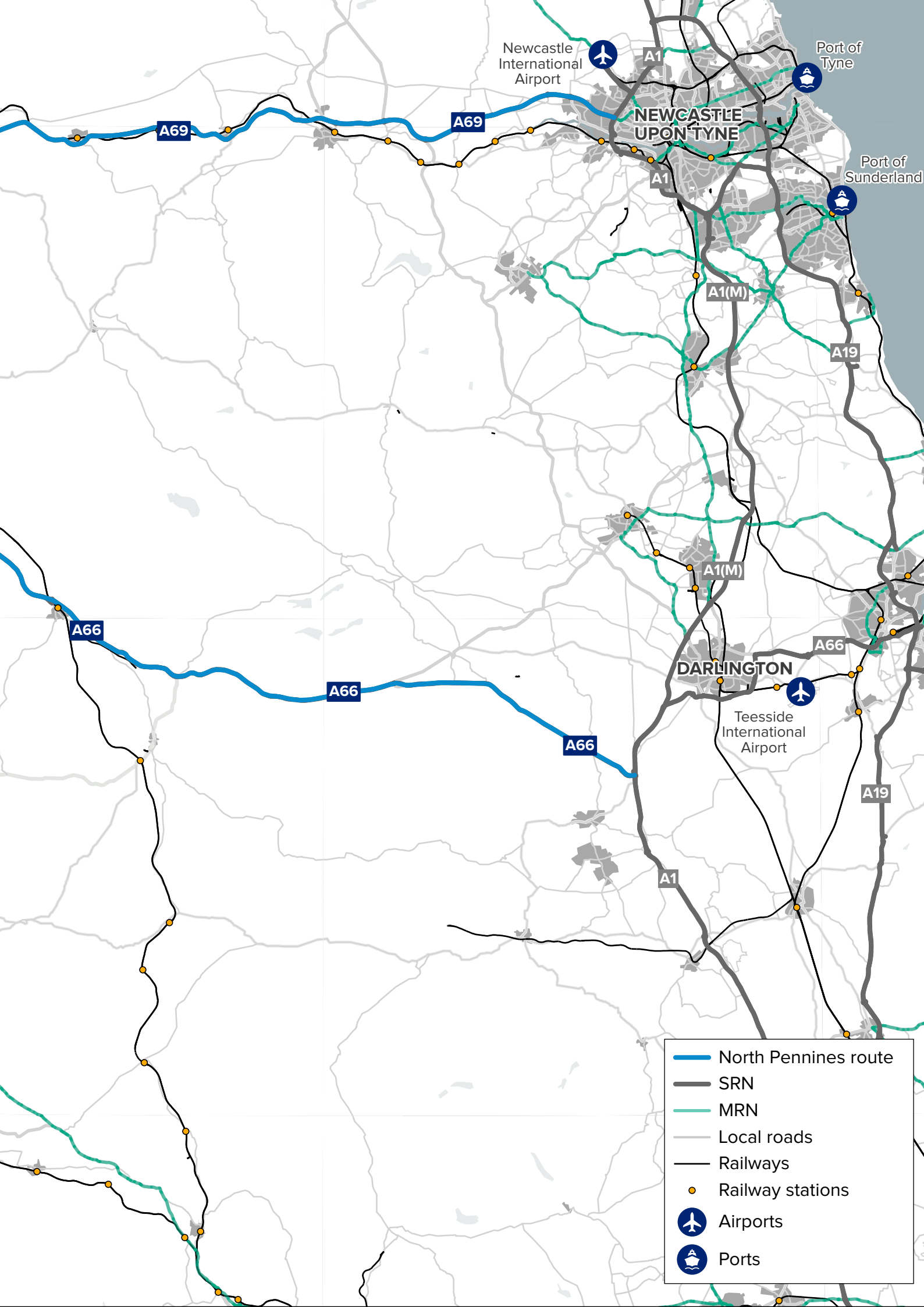


Figure 13: Network integration


Newcastle International Airport
A1
Port of Tyne
A69
A69
NEWCASTLE UPON TYNE
A1
Port of Sunderland
A1(M)
A19
A1(M)
A66
A66
DARLINGTON
A66
Teesside International Airport
A66
A19
A1
North Pennines route
SRN
MRN
Local roads
Railways
Railway stations
Airports
Ports

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.

The variability of network layout, particularly along the A66, A69 and A590, was raised in the recent public engagement as being unsafe and contributing to driver frustration. Visitors travelling within the area may be unfamiliar with these changing lane layouts. Those we engaged with raised that this may contribute to these issues.

As shown in Figure 14, the latest available data shows the route is predominantly rated 1-star or 2-star, with only short sections achieving a 3-star or 4-star rating. Some areas rated as 1-star include the A590 around Ulverston (Greenodd), the A66 at Workington, and the A69 east of Carlisle.

As shown in Figure 15, there are collisions and sections of the route where people were killed or seriously injured, including:

- A590 north of Ulverston
- A595 north and south of Whitehaven
- A66 between Cockermouth and Penrith
- A66 between Penrith and Brough, and west of Scotch Corner, which are sections covered in part by the A66 Northern Trans-Pennine scheme which is committed for the second road period
- Intermittent sections of the A69 between Brampton and Newcastle

Using the latest RSF Crash Risk Map data, we found the route experiences collisions involving walkers, cyclists and horse riders (WCH). The A595 has the highest number of collisions involving WCHs, followed jointly by the A66 and A590. Collisions that involved WCH fatalities occurred more frequently at locations where there is existing activity from these users, in urban areas or areas where there are services and accommodation.

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

These include:

- Kemplay Bank roundabout along the A66 in Penrith
- Gilpin Bridge junction along the A590 in Greenodd
- Newby Bridge Garage along the A590 in Newby Bridge
- New Road (Pelican garage) along the A595 north of Whitehaven
- Between Scalegill Road and Westlakes Science Park, along the A595 south of Whitehaven

Such collisions also occurred in rural locations near to tourist destinations, including the A66, north-west of Keswick.

Key challenges

- Network layout variability is a significant concern among interested parties, particularly in relation to visiting traffic where drivers lack familiarity with the road layout
- The route is predominantly rated 1 or 2 stars in terms of its iRAP rating
- STATS19 data shows that there are sections of the route where people have been killed or seriously injured. These include walkers, cyclists and horse riders

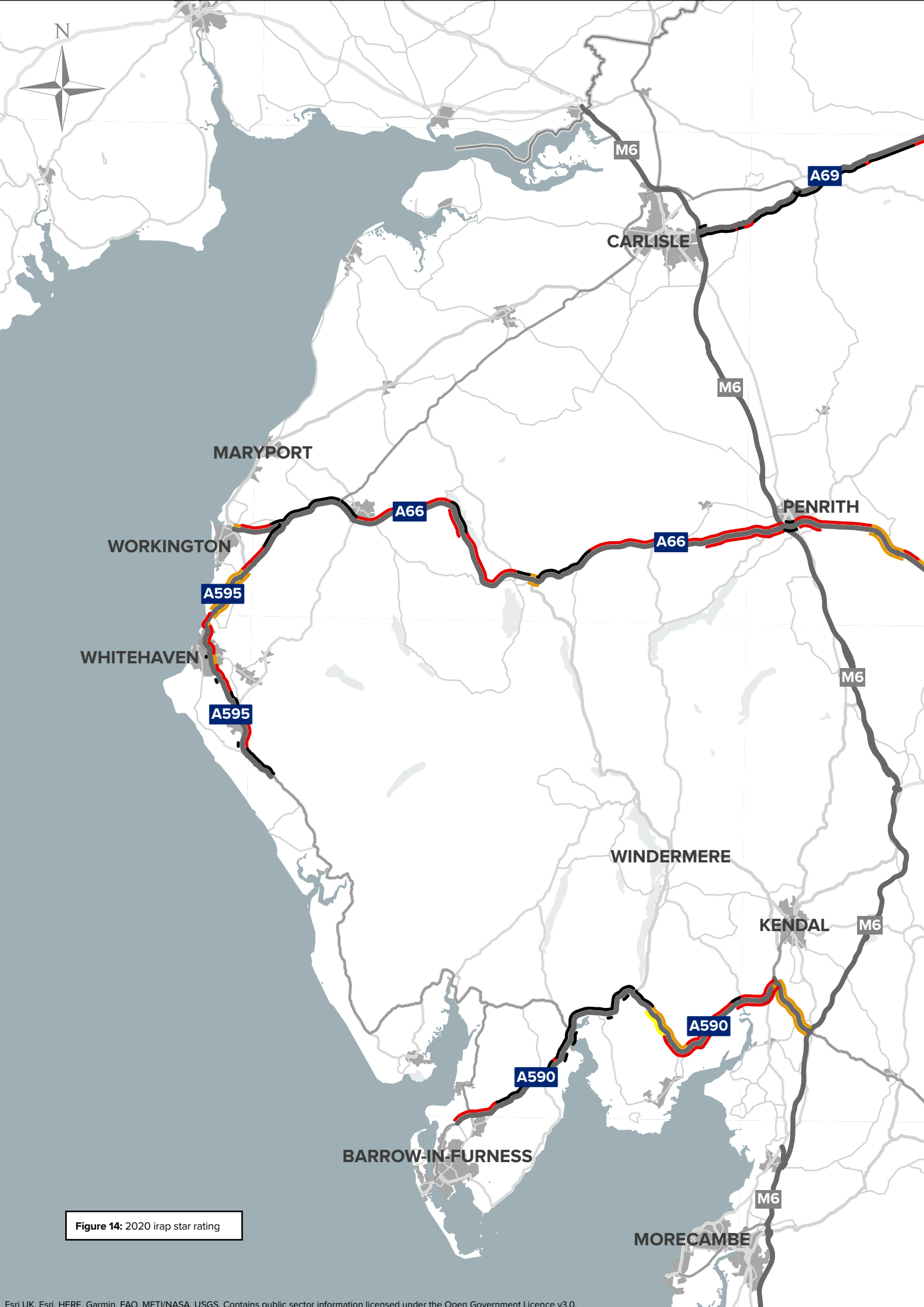


Figure 14: 2020 irap star rating

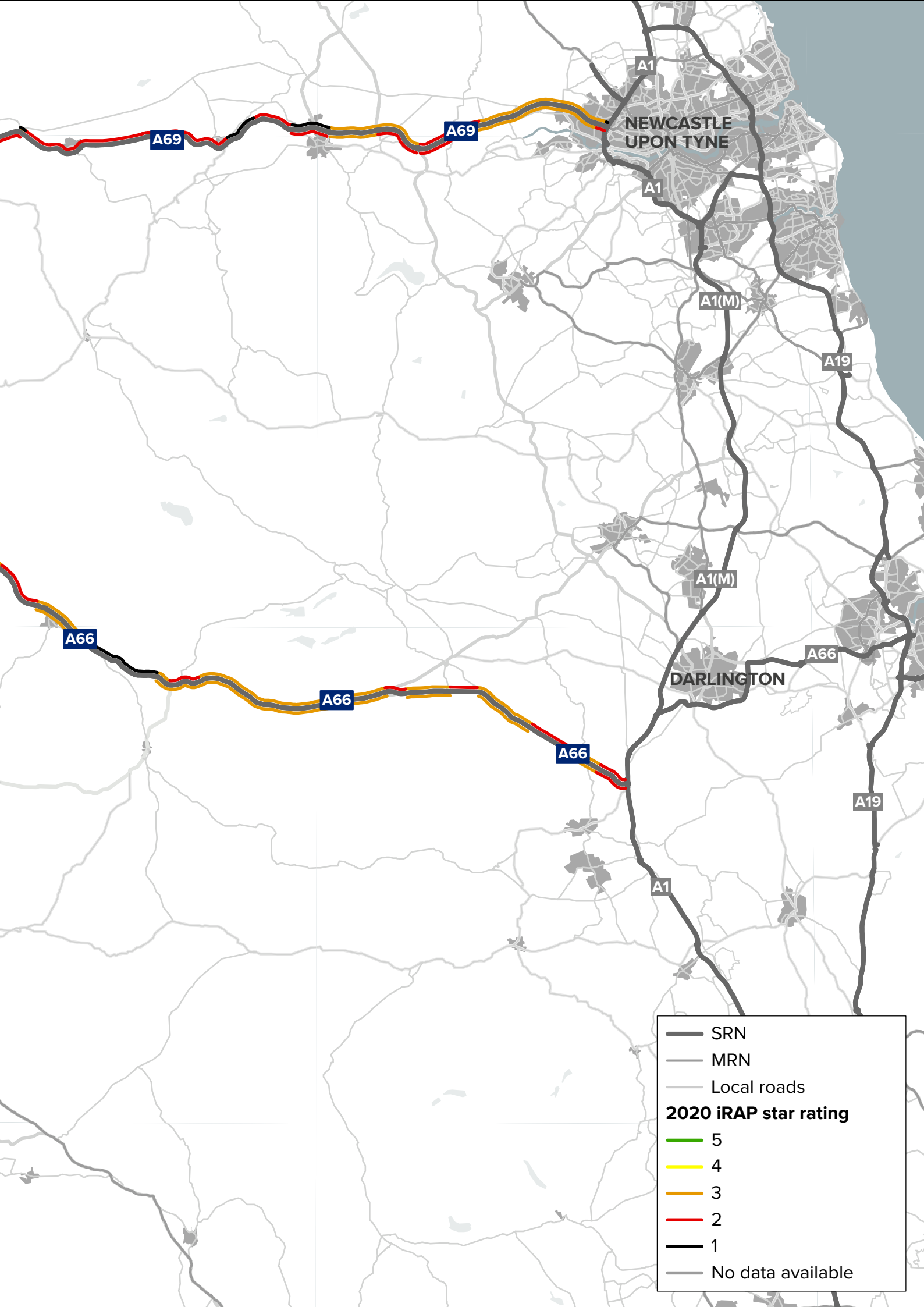
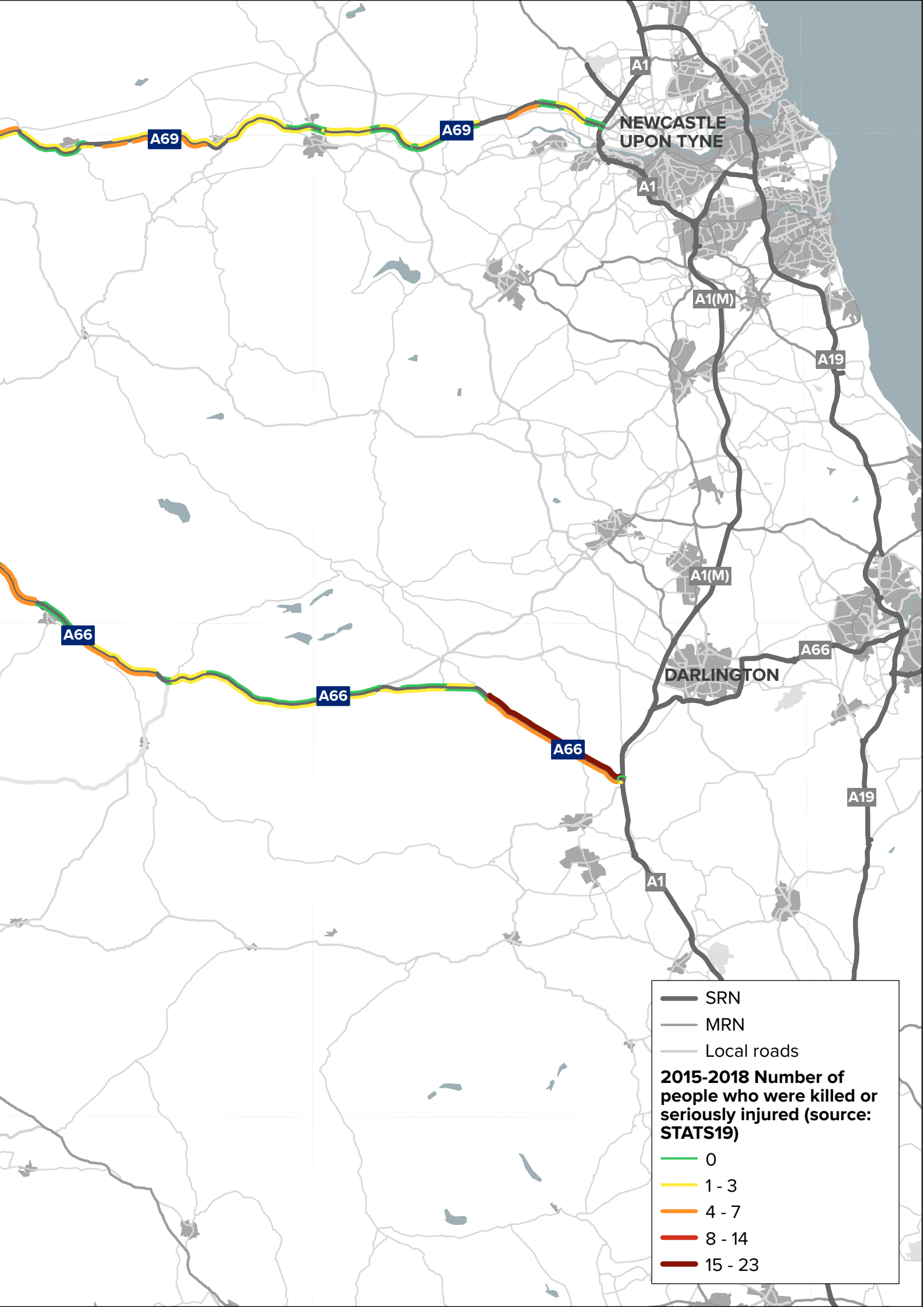

A69
A69
A1
NEWCASTLE
UPON TYNE
A1
A1(M)
A19
A1(M)
A66
A66
DARLINGTON
A66
A66
A19
A1
SRN
MRN
Local roads
2020 iRAP star rating
5
4
3
2
1
No data available

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


A1
NEWCASTLE UPON TYNE
A69
A69
A1
A1(M)
A19
A1(M)
A66
A66
DARLINGTON
A66
A66
A19
A1
SRN
MRN
Local roads
2015-2018 Number of people who were killed or seriously injured (source: STATS19)
0
1 - 3
4 - 7
8 - 14
15 - 23

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 North Pennines 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.

The North Pennines route experiences variation in journey time reliability, which can be attributed to recurring congestion at the same times each day. There are delays from congestion at certain locations along the route during the morning peak period. Shown in Figure 16, the locations which experience delays in the morning peak period include:

- A590: Ulverston (up to 65 seconds per vehicle per mile)
- A590: Greenodd (up to 12 seconds per vehicle per mile)
- A595: Whitehaven to Bigrigg (up to 21 seconds per vehicle per mile)
- A595: Egremont (up to 31 seconds per vehicle per mile)
- A69: Warwick Bridge (up to 11 seconds per vehicle per mile)

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

Areas on the SRN that experience delay in the afternoon peak period include:

- A590: Ulverston (up to 64 seconds per vehicle per mile)
- A590: Greenodd (up to 14 seconds per vehicle per mile)
- A590: Newland (up to 12 seconds per vehicle per mile)
- A595: Whitehaven to Bigrigg (up to 94 seconds per vehicle per mile
- A595: Egremont (up to 53 seconds per vehicle per mile)
- A66: Penrith (up to 65 seconds per vehicle per mile)
- A66: Bridgefoot (up to 11 seconds per vehicle per mile)

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

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

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

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

Based on our data we have also noted areas on the SRN that provide access to the Lake District National Park, which experience seasonal delay, with notable delays during Friday afternoon peak periods in the summer months at Whitehaven, Penrith, Ulverston, and Greenodd.

There is notable delay on the A595 in the vicinity of Sellafield, south of Whitehaven, a major employer at the western end of the route. Contractors at Sellafield returning home for the weekend may experience delay in the Friday afternoon peak period. Similarly, there is delay on the A590 in the vicinity of BAE systems, another major employer. These significant employment sites have large catchment areas, attracting journeys by the SRN.

The route experiences seasonal variations in demand due to leisure and tourism, leading to a variation in congestion levels and journey times at different times of year. Covid-19 has helped grow the domestic leisure market, with more people going on holiday domestically rather than abroad, leading to increasing reliance on the private car. This has been found to have resulted in an increase journeys by private car using the route to access the Lake District since lockdown restrictions eased, compared to pre-Covid levels[34].

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 RTMs 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.

Figure 17 shows the predicted delays by 2031 in the weekday morning peak period. Route performance is expected, on the whole, to decline slightly, with a small number of sections of the route expected to have more pronounced changes in delay. The higher increases in delay are expected to occur on parts of the A590 east of Ulverston, which provides access to key employment sites in Ulverston, while also providing a key link for freight traffic between the Port of Barrow and the M6. A small section near the centre of Ulverston is expected to experience delays of up to 154 seconds per vehicle per mile.

The A66 between the M6 and the A1(M) is predicted to operate with lower levels of delay in 2031. This is associated with the A66 Northern Trans-Pennine upgrade, if consented.

The sections of the A595 and A66 where delays are forecast to increase in the future (for example, up to 70 seconds per vehicle per mile on the A66) would impact on access to the Port of Workington, and the highly skilled industries located in Workington and Whitehaven. Congestion on the A590 and A66 is expected to impact the accessibility of the economically important centre of Barrow, as well as the Lake District National Park, which would inhibit the local rural and visitor economy.

34 Lake District National Park (2020) *Outcome 5: Sustainable travel and transport.* https://www.lakedistrict.gov.uk/caringfor/lake-district-national-park-partnership/management-plan/sustainable-travel-and-transport

We expect congestion on sections of the A590, A595, A66 and A69 to worsen due to increased traffic across the route area as shown in Figure 17. Traffic growth from developments has the potential to worsen existing issues of congestion, road safety, and local air pollution. The percentage of freight traffic on the route in existing conditions is generally relatively similar to the rest of the SRN, at around 10%. The A66, east of Penrith, is where percentage freight traffic in the route area is at its highest, with between 20 and 30% freight traffic. This is some of the highest proportions of heavy goods vehicles (HGVs) travelling on the SRN. This section is subject to the A66 Northern Trans-Pennine upgrade.

Another key issue faced across the route is the limited provision of technology, which makes it more difficult to manage disruptive incidents and communicate information to road users. This can be particularly difficult during times of increased tourism, such as bank holidays and school holidays. The lack of suitable alternative routes or Diversion Routes for Unplanned Events (DRUE) means that incidents or planned roadworks can create severe disruption. Some diversion routes are less suitable for HGVs, which can potentially result in environmental impacts relating to congestion, noted on the A685 around Kirkby Stephen. There are also a number of Control for Major Accidents and Hazard sites that interact with the route, including those on the A595 at Sellafield and Port of Workington.

Key challenges

- Variation in journey time reliability is experienced across the route
- Notable delay occurs during Friday evenings during the summer peak periods, associated with domestic tourism to the Lake District National Park
- Major employers such as BAE and Sellafield have a heavy reliance on the SRN, particularly due to their large catchment areas
- Limited technology on the route creates challenges related to managing disruptive incidents and communicating diversion routes

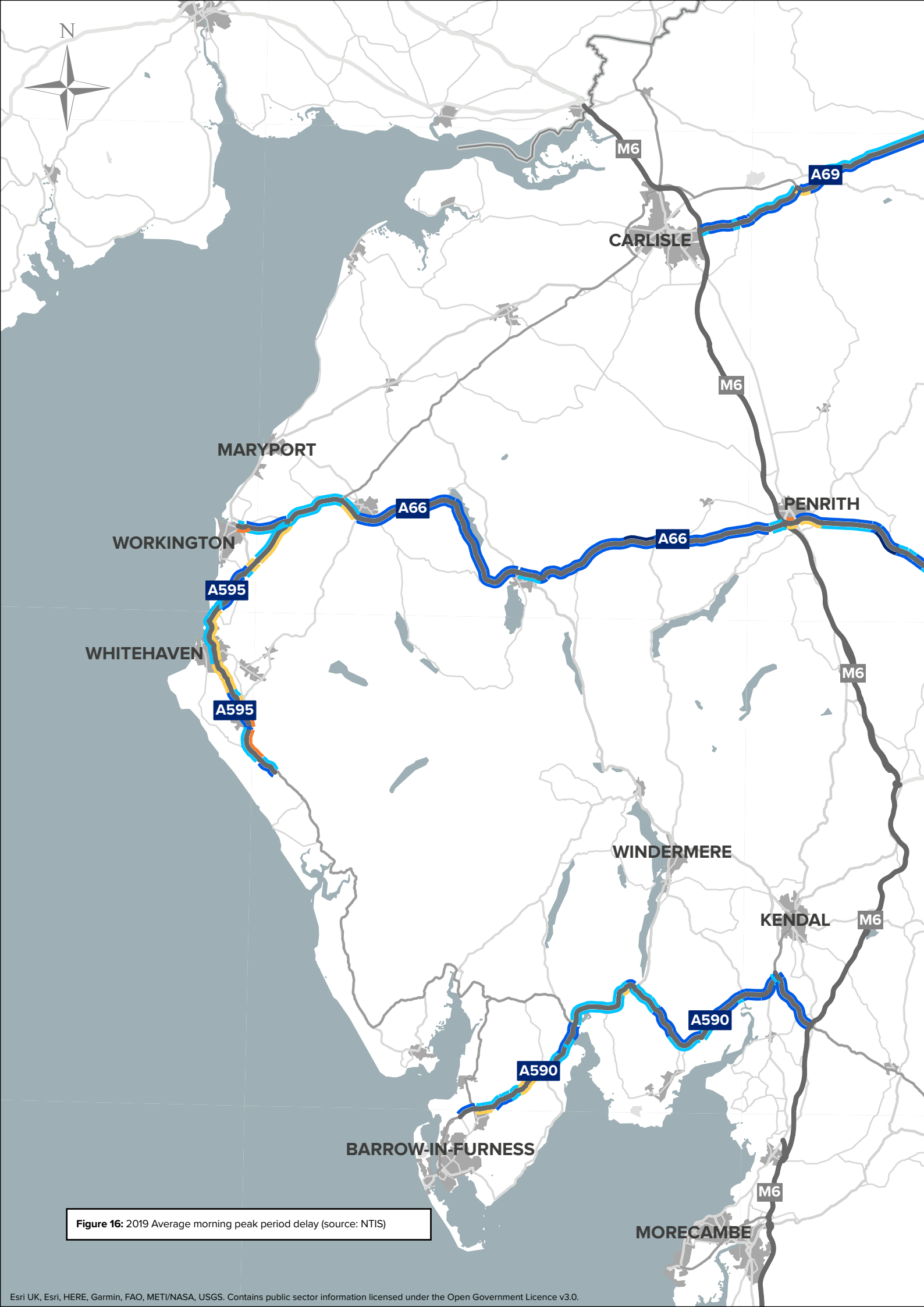
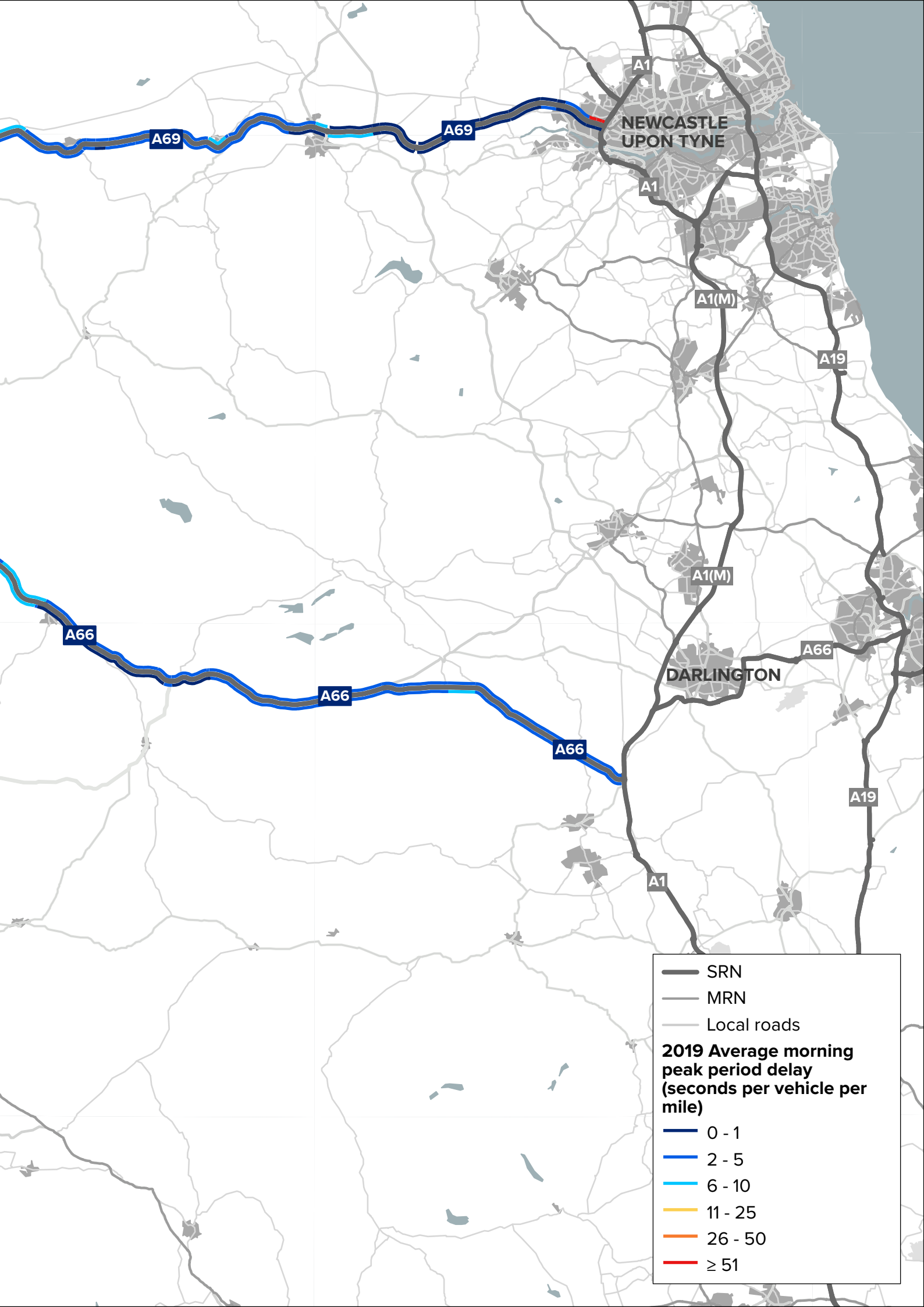


Figure 16: 2019 Average morning peak period delay (source: NTIS)


A69
A69
A1
NEWCASTLE UPON TYNE
A1
A1(M)
A19
A1(M)
A66
A66
DARLINGTON
A66
A19
A1
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

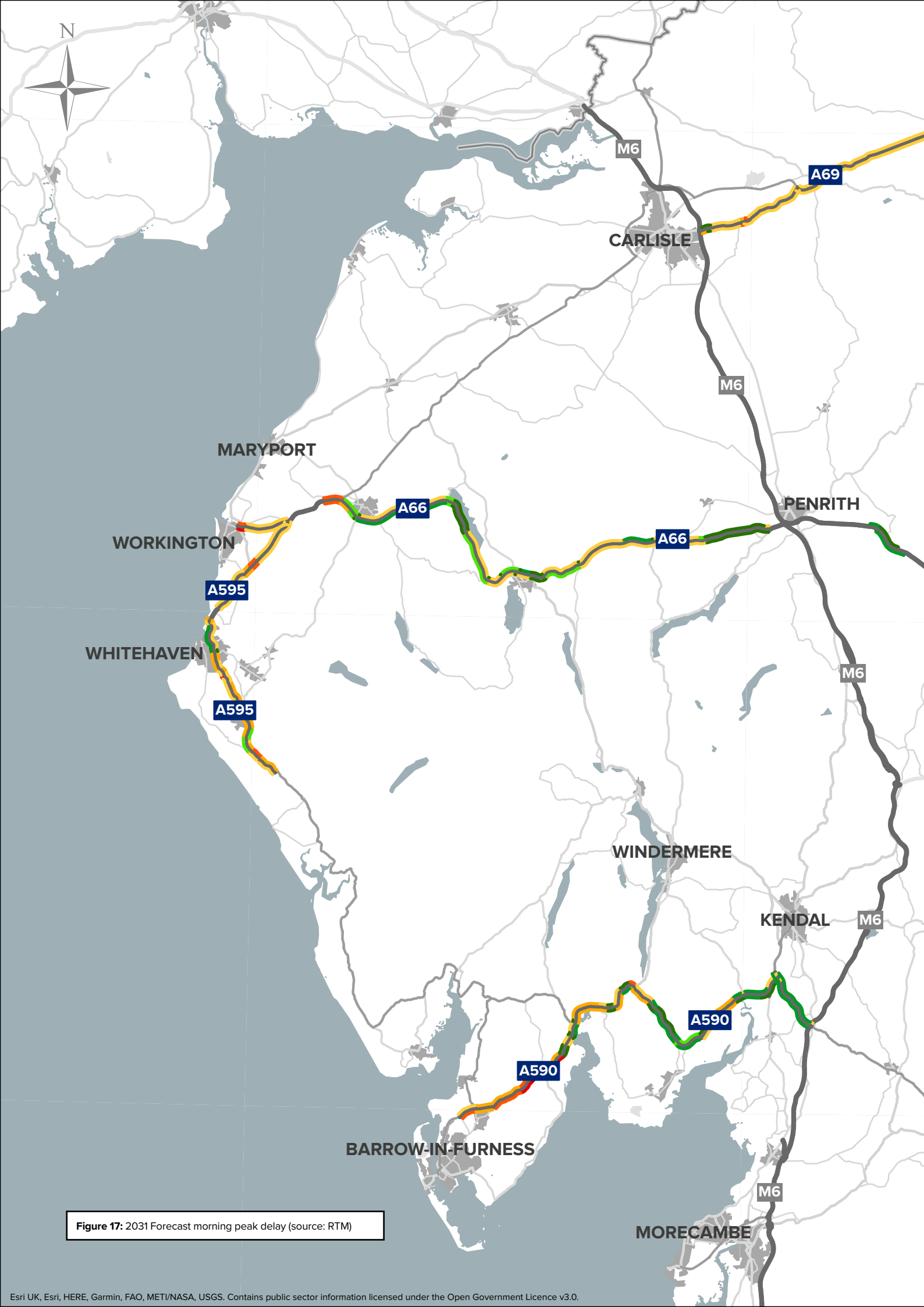
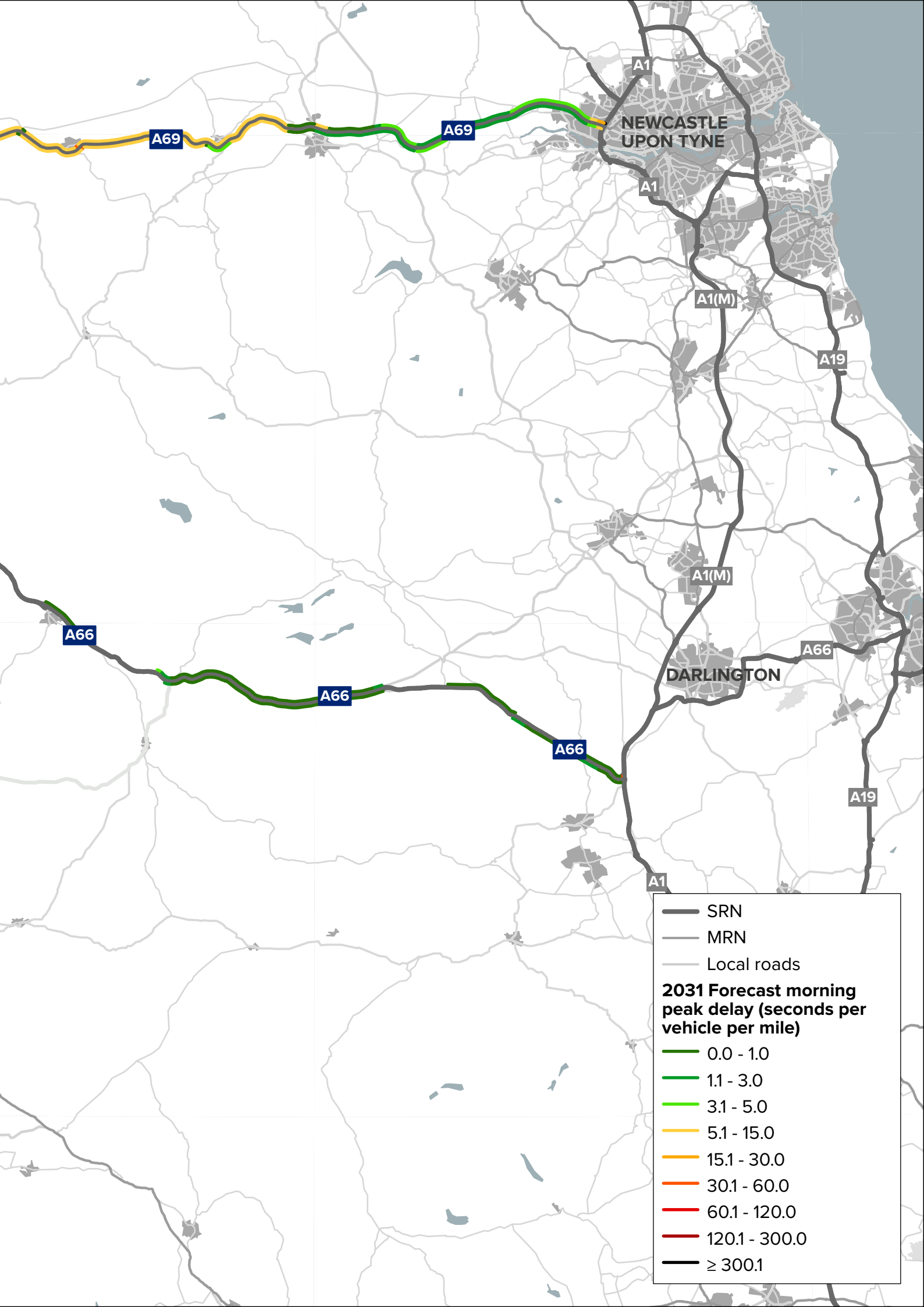


Figure 17: 2031 Forecast morning peak delay (source: RTM)


A1
NEWCASTLE UPON TYNE
A69
A69
A1
A1(M)
A19
A1(M)
A66
A66
DARLINGTON
A66
A66
A19
A1
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

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*[35] 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 risk[36], 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.

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

We are committed to net zero carbon construction by 2040 and net zero carbon travel by 2050. This will involve significant changes to the way we build and manage our network, including in the North Pennines area. We have already used carbon neutral construction on a project on the A590. We will need to consider better integration with other transport modes and how to support the transition to electric cars and zero carbon heavy goods vehicles (HGVs).

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

While noise is often an inevitable consequence of societal activities, it can have serious implications for human health, quality of life, economic prosperity and the natural environment. 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.

35 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
36 Climate Change Committee (2021) *Independent Assessment of UK Climate Risk.* https://www.theccc.org.uk/publication/independent-assessment-of-uk-climate-risk/

There are significant ecological and environmental sensitivities along the route. This includes water environment and habitat sites found along large sections of the A69 and A66, and those within the North Pennines Area of Outstanding Natural Beauty (AONB). The route also passes next to a number of Sites of Special Scientific Interest (SSSI).

The route also has cultural heritage sensitivities, passing close to multiple listed buildings and other cultural designations such as scheduled monuments and World Heritage Sites. There are two UNESCO World Heritage Sites that the route interacts with; The English Lake District (accessed via the A595, A590 and A66) and the Frontiers of the Roman Empire (accessed via the A595 and A69).

The A66 also provides access to the Yorkshire Dales National Park, which is a protected nationally important landscape.

Sections of the A590 are at a higher risk of flooding from surface water, including between Sizergh and Lindale, and Newby Bridge to Ulverston. Flooding from surface water has the potential to cause disruption and sever the main transport links for rural communities in the area, particularly at Greenodd and Gilpin Bridge. Sections of the A66 near to Bassenthwaite Lake are also at risk of flooding from surface water, potentially causing widespread disruption and long diversions for road users, although a recent scheme has been implemented to improve the drainage network and raise the road at two points. Sections of the A66 are often forced to be closed due to snow and heavy winds.

Given that air pollution is the top environmental risk to health in the UK and the fourth greatest threat to health overall[37], poor air quality can negatively impact the health and well-being of road users and residents in areas across the North Pennines. 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 Ulverston and Swarthmoor on the A590; Whitehaven on the A595; Workington and Cockermouth on the A66; and Warwick Bridge, Thorngrafton and Denton on the A69.

Noise exposure has an adverse effect on human health and quality of life, as well as having implications on economic prosperity and the natural environment. This demonstrates the importance of addressing the management of noise issues and effects on road users and residents from the road network. There are receptors within 300 metres of the SRN which may be more sensitive to high noise levels, particularly in Ulverston on the A590, Whitehaven on the A595, Cockermouth on the A66, and Warwick Bridge and Denton on the A69.

The route is mostly rural, but it frequently interacts with local communities and non-motorised users. While severance may occur due to physical barriers (such as physical infrastructure and high traffic flows) and omission barriers (lack of pedestrian infrastructure or crossing facilities), it can also occur in places susceptible to flooding from surface water and other extreme weather events that lead to road closures. The impact of severance on local communities, including Cockermouth, Keswick, Ulverston, Barrow-in-Furness, Whitehaven and Egremont, can limit access to facilities such as schools, hospitals, or places of work.

Key challenges

- Minimising adverse impacts of noise on road user and resident health and quality of life
- Minimising the number of closures on the sections of the A590 and A66 at risk of flooding
- 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

37 DEFRA (2019) *Clean Air Strategy.* https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/770715/clean-air-strategy-2019.pdf

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 supports east–west travel across the North of England. It therefore has a critical function in supporting economic growth in the region. Within the North Pennines route area, Barrow-in-Furness, Northumberland, Newcastle, Richmondshire, Allerdale and County Durham have all been recognised as levelling up category 1 areas. The index of priority places for the Levelling Up Fund organises local authorities into three categories 1, 2 or 3 depending on their identified level of need, with category 1 representing places deemed in most need of investment. According to the Index for Multiple Deprivation 2019, Barrow-in-Furness and Newcastle also fall within the top 10% most deprived areas nationally. Other areas across the route, including Whitehaven, Workington and Carlisle, fall into this bracket too.

To the west of the M6, the route provides access to the visitor attractions surrounding the Lake District National Park, and the significant growth locations and areas of industry on the west coast. To the east of the M6, the route provides a vital strategic link to the rest of the UK, including other visitor attractions across Eden. The variability in the network layout of roads across the route was highlighted as a constraint by interested parties, putting the route at risk of being unable to support potential additional travel demand.

The route is key to opening up opportunities for businesses and highly skilled industries in Cumbria, including the Carlisle Kingmoor Park Enterprise Zone, the Tees Valley Enterprise Zone, and North East Enterprise Zones 1 and 2. In addition to these sites, the region has local plan employment allocations across the route.

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

On the West Cumbria coast, the proposed Moorside Clean Energy Hub and a potential new coal mine in Whitehaven[38] are expected to increase the region's economic activity if they go ahead. This would add to the existing economic hubs of Whitehaven, Sellafield and the Port of Workington. Connecting the energy coasts of Northern England is a key objective of TfN. Road-based transport relies on the A66 and A595 corridor to provide this connectivity. In addition, the Derwent Forest site in Cockermouth (adjacent to the A66) is one of the largest brownfield sites in the UK and has been identified for a mixed-use development in the future. In South Cumbria, significant economic growth is expected around the Furness peninsula, including BAE Systems in Barrow-in-Furness[39]. The success of this and other inward investment will depend on the continuing performance of the A590 corridor. Across the route there are approximately 445 hectares of employment land allocated for employment growth in the local authorities' local plans. The road also serves as a gateway to the Lake District National Park and is relied upon by visitors, particularly due to the limited public transport options available.

The North Pennines route plays an important role connecting international gateways on the east coast, including Teesport Freeport and the Port of Tyne, two of the UK's largest ports. Cairnryan, the busiest port in Scotland, provides access to Northern Ireland via the Cairnryan-Belfast ferry route.

38 Cumbria County Council (2017) *West Cumbria Mining Planning Application, 2017 4/17/9007.* https://councilportal.cumbria.gov.uk/mgAi.aspx?ID=50574
39 Borough of Barrow in Furness (2019) *Local Plan 2016-2031.* https://www.barrowbc.gov.uk/residents/planning/planning-policy/local-plan/

Access to Cairnryan is enabled by the M6, and then via the A75. The A66 is a key access route facilitating these movements, where between 2.5 and 3.5 million heavy goods vehicle (HGV) equivalents flow between Carlisle and the east coast (to Teesport and the Port of Tyne) per year[40]. Furthermore, the Borderlands Inclusive Growth Deal highlights the east and west coast ports as key to increasing the attractiveness of the Scotland–England border to investors, promoting economic competitiveness[41].

Despite the large proportion of HGVs travelling on these roads, there are limited facilities for lorries and other larger vehicles, including coaches, across the North Pennines route. In addition to the main freight generators and attractors on the route noted above, there are also nationally significant distribution centres in areas such as Carlisle and Newcastle. The lack of appropriate facilities for these larger vehicles mean they often have to use unsecure laybys or drive long distances to other service areas.

Interested parties raised that the inconsistency in network layout, a lack of overtaking opportunities and limited parking capacity for lorries across the North Pennines route are barriers to economic growth.

Economic growth is also affected by inequalities in the provision of transport services. Approximately 23% of households in the North Pennines route area do not own a car, many of which are located in rural communities. These people rely on other modes of transport and therefore may not be able to easily access employment, healthcare, education, and other amenities as a result of social exclusion, further exacerbated by limited out-of-town cycling networks and bus services.

Key challenges

- Inward investment into the North Pennines will depend on the continuing performance of the SRN, which may be constrained by an inconsistent network layout and associated delays
- Limited facilities for HGVs may also constrain future growth, as at present, drivers often utilise unsecure laybys or drive long distances to reach appropriate service stations
- Car ownership levels, alongside limited out-of-town cycling network and bus services, contributes to social exclusion and restricts access to educational and employment opportunities, which has a knock-on effect to local economic growth

40 UK Major Ports Group (2022) *UK Major Ports Group.* https://ukmajorports.org.uk/

41 Cumbria County Council (March 2021) *Borderlands Inclusive Growth Deal.* https://www.cumbria.gov.uk/business/ecodev/borderlandsgrowth.asp#:~:text=The%20signing%20of%20the%20Deal,102.56%20million%20from%20local%20partners

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

Bridges and structures

There are 387 structures across the route, including bridges and large culverts. According to an analysis of current data, 84% 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 one significant structure renewal on the route in RIS3.

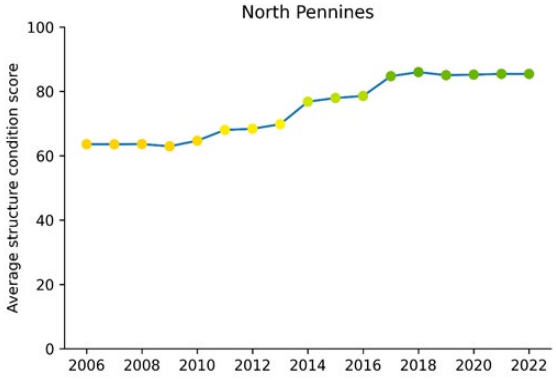


Figure 18: Average condition scores of structures, since 2006

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

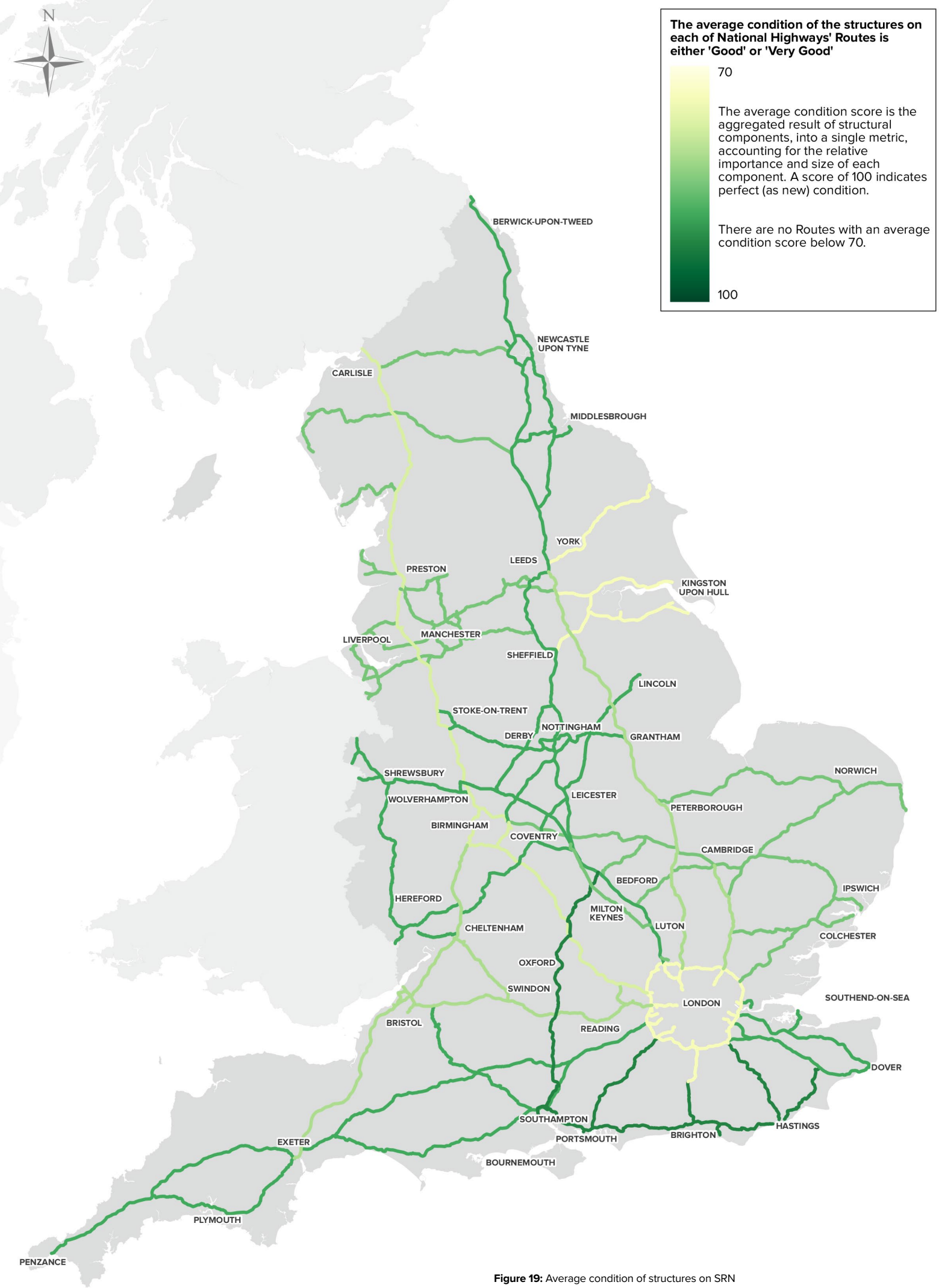


Figure 19: Average condition of structures on SRN

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.

At present, the route is not technologically enabled in its entirety, and there are some gaps in infrastructure for electric vehicles, surveillance, and communication with road users. The route has some provision of electric vehicle charging points, particularly around Carlisle and Penrith. Where the route is more rural, there are larger gaps between charging infrastructure provision. The A69 is the most technology-enabled road across the North Pennines route. But there are still gaps in infrastructure, including a 26 kilometre stretch between Haltwhistle and Oakwood where there are no charging points. The A590 and A66 have larger gaps (up to 40 kilometres) between charging points. The A69 has some provision of CCTV, AMI (Advanced Motorway Indicator Signs), VMS (Variable Message Signs), and NRTS (National Road Telecommunications Services). The A66, A595, and A590 have none.

We will support improved communications and facilities for all

Interested parties highlighted a general concern for inadequate driver communication across the entire North Pennines route. They felt that real time information on traffic conditions, incidents, and parking availability would enable drivers to make better informed choices, resulting in overall increased road user satisfaction. This real-time data could be linked to other modes of transport, including buses, trains, taxis and ferries, potentially creating opportunities for better route choice and simplifying interchange between modes.

The Government's March 2022 *Electric Vehicle Infrastructure Strategy*[42] sets out a vision for 2030 where charging infrastructure will be removed as both a perceived and real barrier to the adoption of electric vehicles. The Strategy outlines the intention to accelerate the rollout of high-powered chargers on the SRN through the £950m Rapid Charging Fund[43].

Key challenges

- Long sections of the SRN of up to 40 kilometres where there are no electric vehicle charging points
- There is a concern for communication with drivers, whereby the communication of real time information on traffic conditions, incidents and parking is lacking

42 UK Government (March 2022) *UK electric vehicle infrastructure strategy.* https://www.gov.uk/government/publications/uk-electric-vehicle-infrastructure-strategy
43 UK Government (March 2022) *Rapid Charging Fund.* https://www.gov.uk/guidance/rapid-charging-fund

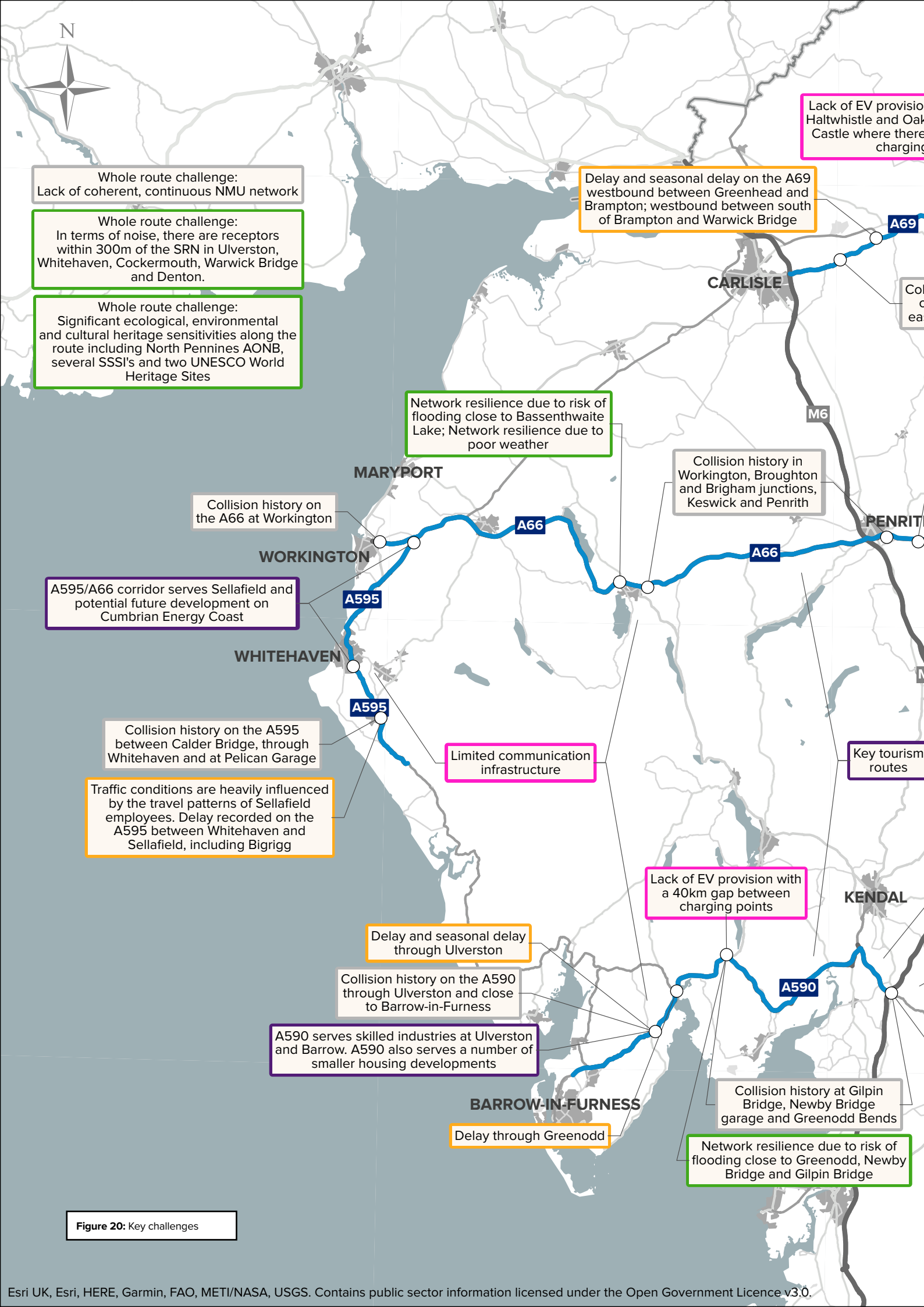
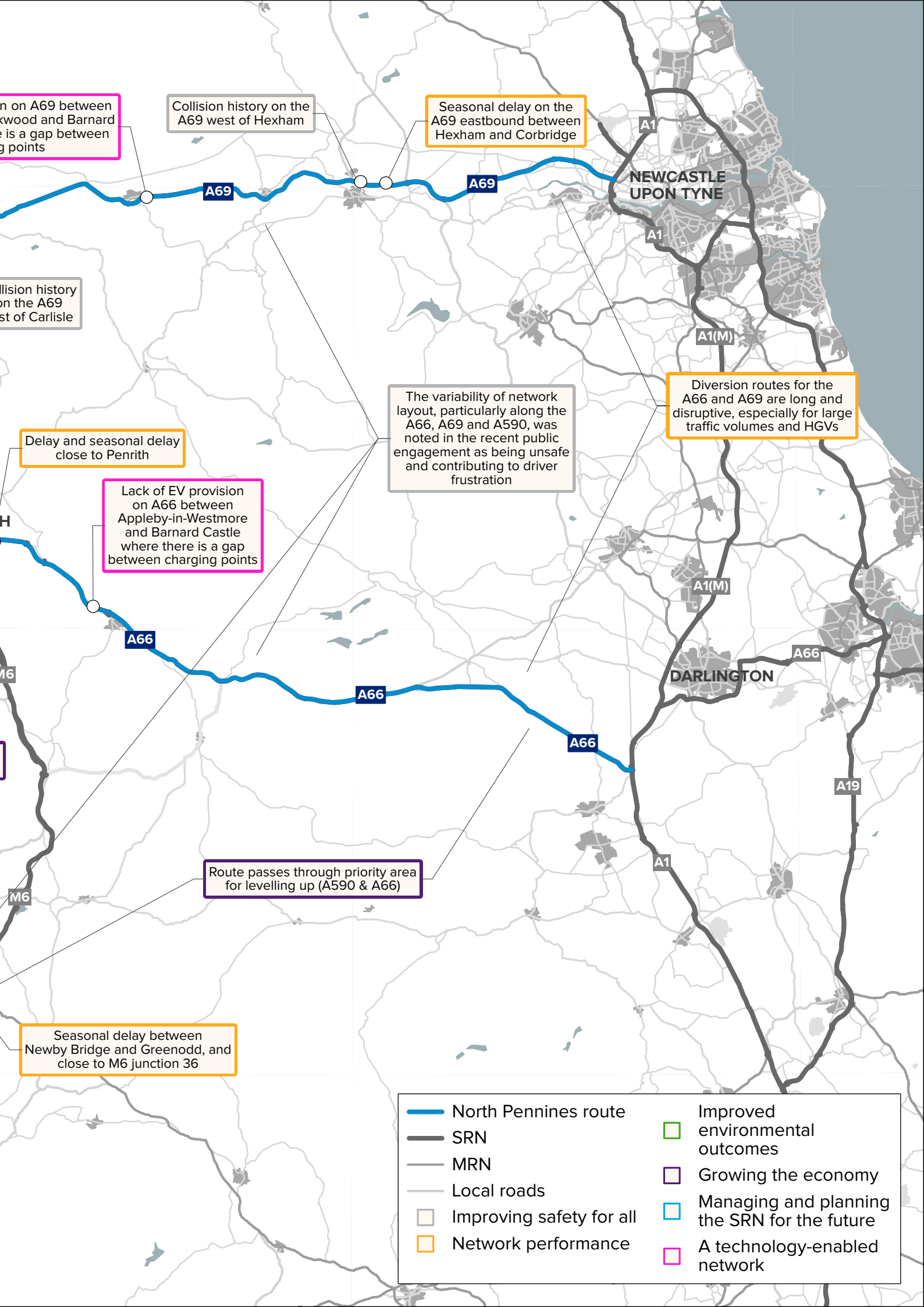


Figure 20: Key challenges


n on A69 between
kwood and Barnard
e is a gap between
g points
Collision history on the A69 west of Hexham
Seasonal delay on the A69 eastbound between Hexham and Corbridge
A69
A69
A1
NEWCASTLE UPON TYNE
A1
llision history
on the A69
st of Carlisle
A1(M)
Diversion routes for the A66 and A69 are long and disruptive, especially for large traffic volumes and HGVs
The variability of network layout, particularly along the A66, A69 and A590, was noted in the recent public engagement as being unsafe and contributing to driver frustration
Delay and seasonal delay close to Penrith
Lack of EV provision on A66 between Appleby-in-Westmore and Barnard Castle where there is a gap between charging points
H
A66
A66
A66
A66
A1(M)
DARLINGTON
A66
M6
M6
A19
A1
Route passes through priority area for levelling up (A590 & A66)
Seasonal delay between Newby Bridge and Greenodd, and close to M6 junction 36
North Pennines route
SRN
MRN
Local roads
Improving safety for all
Network performance
Improved environmental outcomes
Growing the economy
Managing and planning the SRN for the future
A technology-enabled network

Our ambition for the route

06 Initial route objectives

We want to provide safer and more reliable journeys for all those who use or live alongside our network on the North Pennines 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 for the route

	Ref	Route objective
	**A**	**Promote a resilient and consistent network** Improve user experience of safe and reliable journeys through provision of a resilient and consistent network across the route.
	**B**	**Support reliable access to the east and west coast ports and airports** Support reliable access to the east and west coast ports and airports, serviced by the A66, A69, A590 and A595, to encourage sustainable economic growth and strategic connectivity.
	**C**	**Support trans-Pennine connectivity** Support trans-Pennine connectivity for all users, particularly freight and coaches, between the Cumbrian and North East energy coasts and centres of highly skilled industries, and support, where appropriate, future growth locations, to assist levelling up the region.
	**D**	**Support regionally significant sustainable development** Support access to regionally significant sustainable development, in locations including Carlisle, Whitehaven, Kendal, Barrow-in-Furness, Ulverston, Cockermouth and Newcastle.
	**E**	**Support the visitor economy** Support the North of England visitor economy by improving gateways to the Lake District National Park such as Newby Bridge, Kendal, Keswick and Whitehaven, and other significant tourist destinations accessed by the route, such as the North Pennines Area of Outstanding Natural Beauty, the Yorkshire Dales and the Frontiers of the Roman Empire.
	**F**	**Support connectivity for rural communities** Support effective local connectivity through improved integration with sustainable transport modes on the A66, A595, A590 and A69, benefitting rural communities and the environment.
	**G**	**Support connectivity for rural communities** Support effective local connectivity through improved integration with sustainable transport modes on the A66, A595, A590 and A69, benefitting rural communities and the environment.

DfT's strategic objectives for our route

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

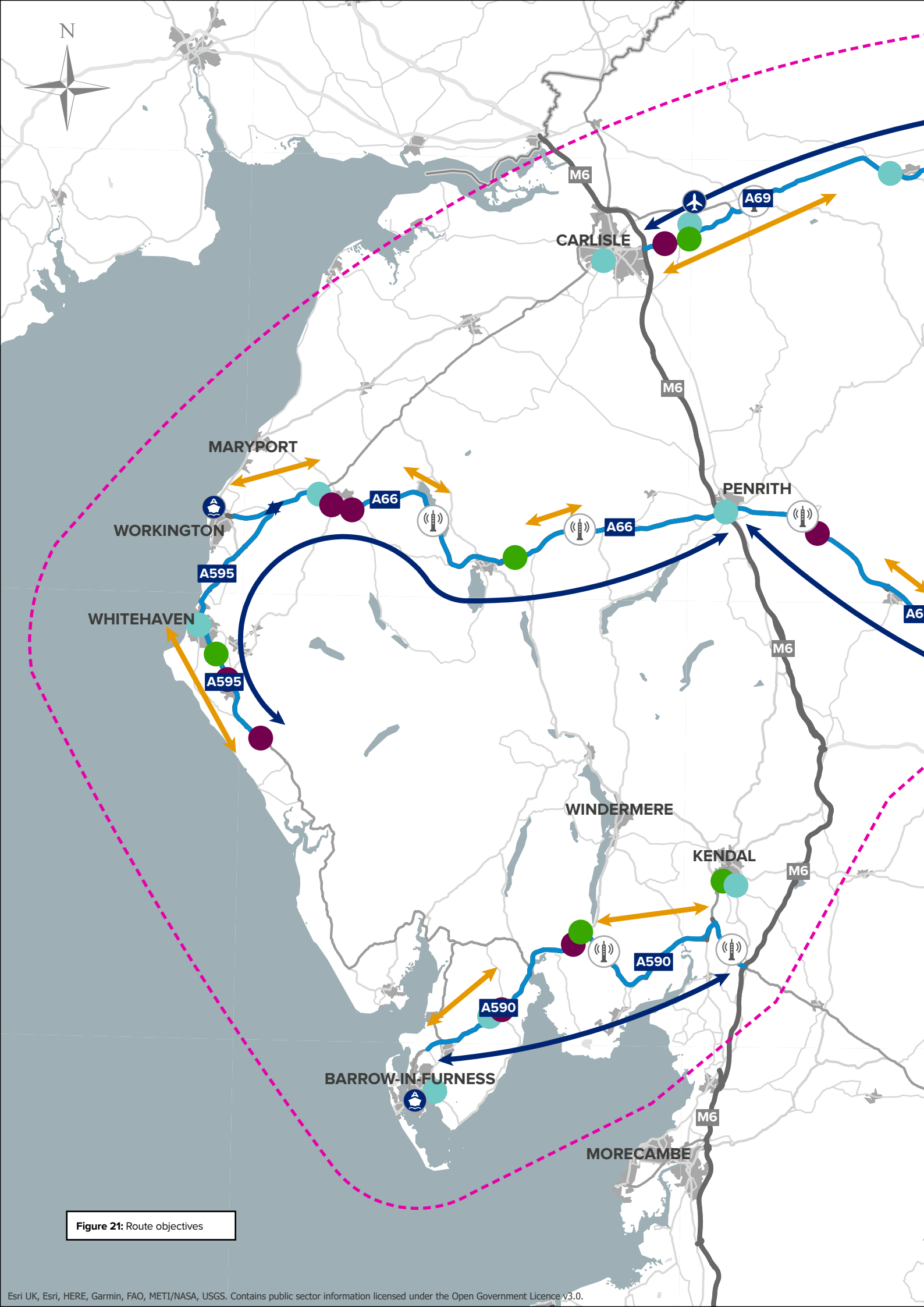
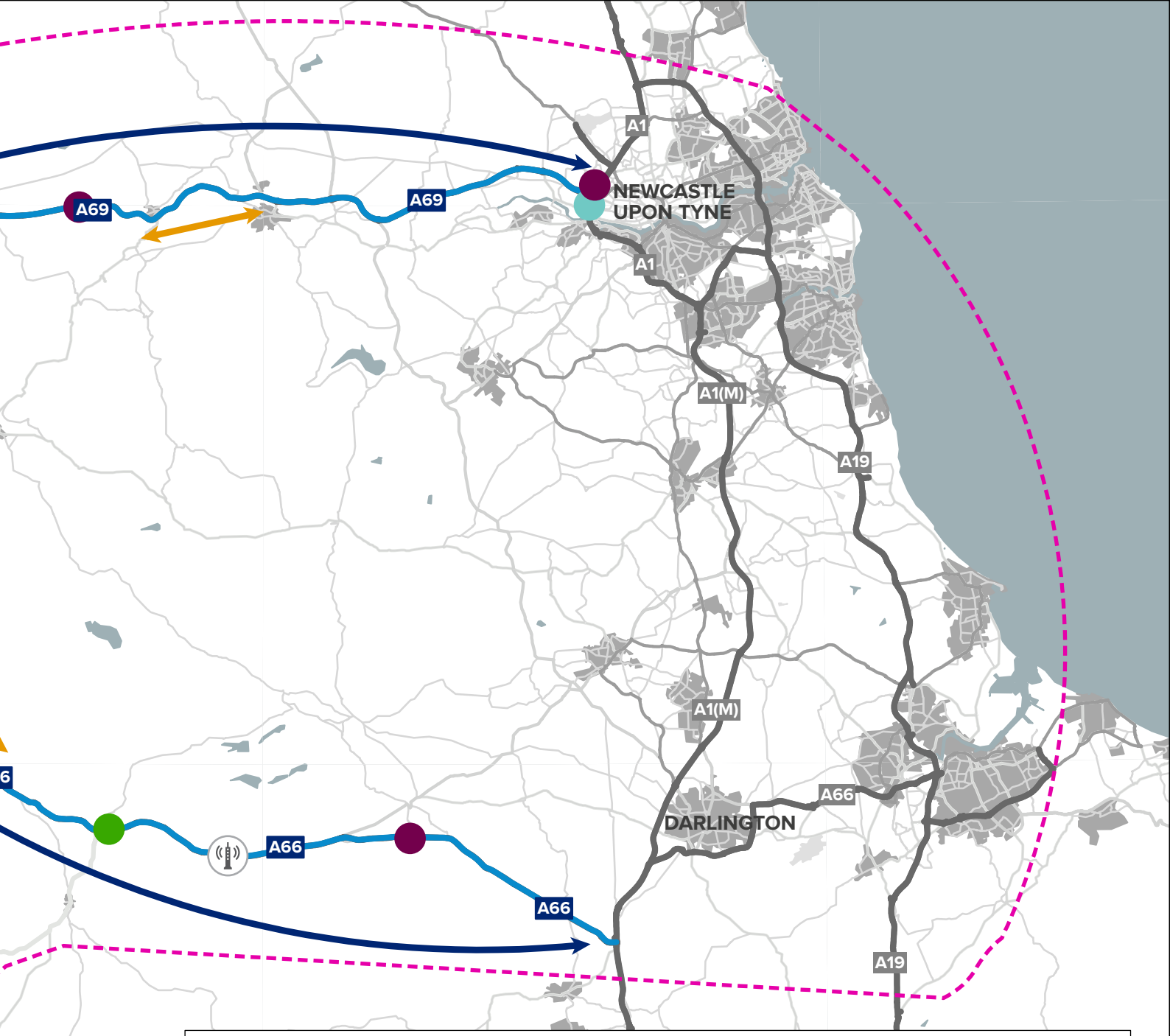


Figure 21: Route objectives



North Pennines route

SRN

MRN

Local roads

Route objectives

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

B. Support reliable access to the east and west coast ports and airports: Support reliable access to the East and West coast ports and airports, serviced by the A66, A69, A590 and A595, to encourage sustainable economic growth and strategic connectivity

C. Support trans-Pennine connectivity: Support trans-Pennine connectivity for all users, particularly freight and coaches, between the Cumbrian and North East energy coasts and centres of highly skilled industries, and support, where appropriate, future growth locations, to assist levelling up the region

D. Support regionally significant sustainable development: Support access to regionally-significant sustainable development, in locations including Carlisle, Whitehaven, Kendal, Barrow-in-Furness, Ulverston, Cockermouth and Newcastle

E. Support the visitor economy: Support the North of England visitor economy by improving gateways to the Lake District National Park such as Newby Bridge, Kendal, Keswick and Whitehaven, and other significant tourist destinations accessed by the route, such as the North Pennines Area of Outstanding Natural Beauty (AONB), the Yorkshire Dales and Hadrian's Wall

F. Support connectivity for rural communities: Support effective local connectivity through improved integration with sustainable transport modes on the A66, A595, A590 and A69, benefitting local communities and the environment

G. Better informed drivers: Improve communications to better inform drivers and improve their end to end journey experience, to support the regional and national economy

A. Promote a resilient and consistent network

Objective

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

Context

The North Pennines route is a mix of single and dual carriageways. This inconsistency in network layout has been raised by interested parties as a factor contributing to poor driving behaviour, including unsafe overtaking, resulting from drivers becoming frustrated behind slower moving vehicles. 39% of responses from interested parties, road users and communities were related to concerns over the lack of network consistency, the frequent changes from single to dual carriageway, and how they felt this contributed to significant congestion and collisions.

The route is predominantly rated 1 or 2 stars in terms of its iRAP rating. Collisions contribute to traffic congestion and delay related to lane closures and full closures in some circumstances. More than two-thirds of responses from interested parties, road users and communities using the online engagement tool cited safety concerns across the North Pennies route. Likewise, engagement with interested parties identified safety as a key concern along the route.

When these collisions occur and road closures are put in place, alternative routes may be less suitable for the type and volume of traffic, meaning the road network has limited resilience.

Our network considerations

We found during engagement there is consensus among interested parties that the entirety of the A69 should be dualled, due to the frequent and unsafe overtaking on single lane sections of the carriageway. Notably, there are eight changes between single and dual carriageway along the A69 between Carlisle and Newcastle.

Other areas of interest with regards to safety along the A590 include the junction at Gilpin Bridge, Greenodd and in the vicinity of A590 Newby Bridge Garage. At the latter location, 11-25% of fatal and serious collisions involve walkers, cyclists and horse riders. There are also areas along the A595, including north of Whitehaven at the Pelican garage and south of Whitehaven near Scalegill Road, where 26-50% of fatal and serious collisions involve walkers, cyclists and horse riders, and 11-25% involve motorcyclists.

Areas of concern raised by interested parties, road users and communities along the A66 include the staggered junctions to the east of Workington at Great Broughton, where collisions of varying severity have occurred in recent years. As raised in the engagement process, the A66 between Barnard Castle and A1(M) also experiences a higher number of collisions. This section is included as part of the A66 Northern Trans-Pennine upgrade.

On the A69, Styford roundabout and the area around the Bridge End roundabout in Hexham are both sites of numerous recorded collisions. These were areas highlighted through engagement with interested parties, road users and communities.

Outcomes

- More resilient road network (A595, A590, A66, A69) in the event of a planned or non-planned closure
- Number of collisions reduced, contributing to a safer network for all users
- Congestion reduced across the North Pennines route, leading to greater user satisfaction

DfT's Strategic objectives

Improving safety for all

Network performance

Timeframe based on the issues and constraints identified

B. Support reliable access to the east and west coast ports and airports

Objective

Support reliable access to the east and west coast ports and airports, serviced by the A66, A69, A590 and A595, to encourage sustainable economic growth and strategic connectivity

Context

The Department for Transport's *Union Connectivity Review*[44] identified the A66 and A69 to be part of the potential UKNET (a strategic transport network spanning the entire United Kingdom), and as forming part of the North Channel corridor to improve connectivity between Northern Ireland (via Cairnryan), Scotland and England. The route links significant international gateways on the east coast, principally Teesport, which now has Freeport status, and the Port of Tyne. The route connects these east coast ports with Cairnryan, the busiest port in Scotland, located on Scotland's west coast. Cairnryan offers access to Northern Ireland and the Republic of Ireland via ferry.

Other ports that interact with the North Pennines route include the Port of Workington and the Port of Barrow, both of which contribute to the region's energy production. Efficient access to these Cumbrian coastal ports can help support economic growth in the region, helping the region potentially become a market leader in the low carbon sector. Ports on the east and west coasts are included within the focus area of the Borderlands Inclusive Growth Deal.

This Deal aims to promote economic growth and competitiveness by focussing on making the region attractive to investors. The Transport for the North (TfN) Strategic Transport Plan recognises that east–west connectivity is a significant barrier to future growth in the North, and a key constraint to business agglomeration (colocation of industry), which could transform the North's economy. The Plan highlights the need for resilient alternative road routes to the major arterial corridors including key east-west routes, such as the A66.

Our network considerations

The North Pennines route plays a role in ensuring effective transportation of goods and people to and from the ports, enabling regional and international connectivity and supporting economic growth. The route relies on the A595, A66 and A590, which provide important connections to the wider regional networks, including the MRN. This includes access to roads such as the A591, a key arterial road through the Lake District National Park, and the A65, which provides connectivity to West Yorkshire. Access to the ports via the A595, A66 and A590 may be constrained by inconsistent network layout. Interested parties raised the connectivity challenges for freight and the impact this has on the efficient transfer of goods to and from the ports, gateways and national distribution centres. They also reported congestion, delay and collisions on the route, which may increase as demand on the network increases.

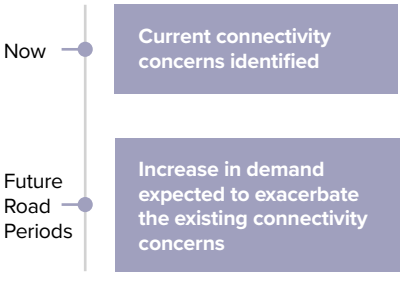
Outcomes

- More support for the regional economy through enabling safe and reliable access to east and west coast ports and airports
- Improved access to national distribution centres for heavy goods vehicles (HGVs) along the A66 and A590, particularly at junctions, recognising the importance of domestic road freight
- Reduced instances of congestion and delay on the A595, A66 and A590, improving the reliability of the route in terms of journey times, benefitting the road user

DfT's Strategic objectives

- Improving safety for all
- Network performance
- Growing the economy

Timeframe based on the issues and constraints identified



44 DfT (2021) *Union Connectivity Review*. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1036027/union-connectivity-review-final-report.pdf

C. Support trans-Pennine connectivity

Objective

Support trans-Pennine connectivity for all users, particularly freight and coaches, between the Cumbrian and North East energy coasts and centres of highly skilled industries, and support, where appropriate, future growth locations to assist levelling up the region

Context

There is a cluster of nuclear industries on the Cumbrian Coast around the Sellafield site served by the A595 and A66 corridors. As well as serving industries and communities along the coast, the A595 provides a vital, direct link to the North East and Scotland, via Carlisle. For most of its length, the A595 forms part of the MRN. The exception is an 18 mile stretch between the A66 Junction east of Workington and Sellafield, which is part of the SRN.

The A66 is a key route connecting the North East, Scotland and Northern Ireland, facilitating freight traffic and providing access to the Cumbrian Energy Coast. The major upgrade of the remaining single carriageway sections of the A66 between the M6 and the A1(M), currently in development, is expected to provide additional capacity and ensure that this key road has a consistent network layout throughout, enabling safer journeys.

These routes, along with the A590, also provide connectivity to highly skilled industries further south in Barrow-in-Furness and Ulverston, including BAE Systems, Siemens and GlaxoSmithKline (due to close in 2025). BAE Systems is of particular importance given it is the site of the Dreadnought Submarine construction programme. Notably, Barrow-in-Furness is the only local authority in Cumbria that earned category 1 status (highest priority) from the Government Levelling Up Fund, and is set to receive £16 million toward projects that improve connectivity, enhance the appearance of the town and regenerate historic buildings. Although the A590 beyond Barrow-in-Furness passes through areas in South Lakeland that are classified as category 3, there is an opportunity for the A590 to play a role in the levelling up of Barrow-in-Furness.

The North Pennines route is particularly important for trans-Pennine connectivity, providing access to both the Cumbrian Energy Coast and the North East coast, including Teesport. The route is key to opening up opportunities for businesses and highly skilled industries in Cumbria, including the Carlisle Kingmoor Park Enterprise Zone, the Tees Valley Enterprise Zone, and North East Enterprise Zones 1 and 2. In addition to these sites, the region has local plan employment allocations across the route, as shown in Figure 22. These sites are expected to help level up the region by attracting global investment. Better integration with the MRN is likely to assist levelling up the region by encouraging strategic connectivity and supporting access to these centres of high-skilled industry from the wider region. This is consistent with the vision set out in TfN's *Strategic Transport Plan*, to transform economic performance of the North.

Our network considerations

The North Pennines route helps the highly skilled industries on the Energy Coast move goods and receive supplies efficiently. These industries rely heavily on the roads that comprise the North Pennines route, so may be impacted if demand on these roads is not managed, or if the SRN does not play a part in wider planning, especially given the development along the Energy Coast, including the proposed Moorside Clean Energy Hub.

The A595 near to Whitehaven, where access to the proposed Moorside Clean Energy Hub site will be formed, has existing challenges with reliability and delay. Diversion routes used in the event of a closure along the A595 at this location are significantly longer than the direct route.

There are challenges associated with the HGV linkages to the highly skilled industries in Barrow-in-Furness along the A590, and there is a lack of regular truck rest areas on the A69 and A66.

Connectivity can also be interrupted by adverse weather conditions due to weak network resilience. A lack of technology across the route exacerbates these issues, having an impact on the efficiency of the movement of people and goods that is important to the aforementioned growth locations.

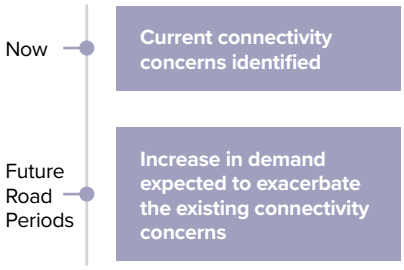
Outcomes

- More support for the regional economy by improving connectivity for freight and other users across the Pennines, linking the east and west of the country
- Access to future growth locations supported, including in the priority areas of Barrow-in-Furness and Allerdale, advancing the levelling up agenda
- Effectively managed demand on the A595, A66, A69 and A590, as well as playing an active role in the planning system to support future demand stemming from further sustainable growth locations

DfT's Strategic objectives

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

Timeframe based on the issues and constraints identified



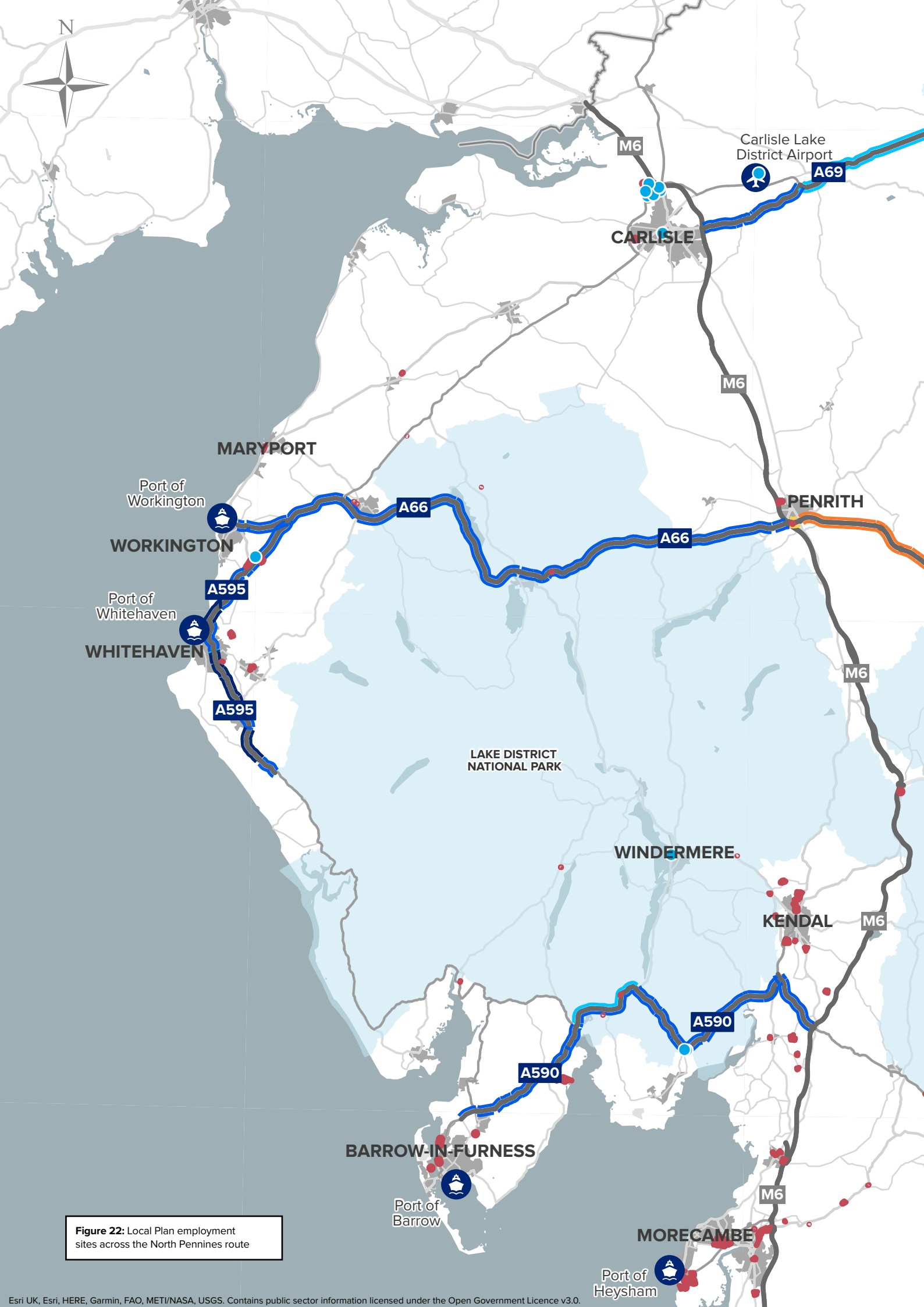
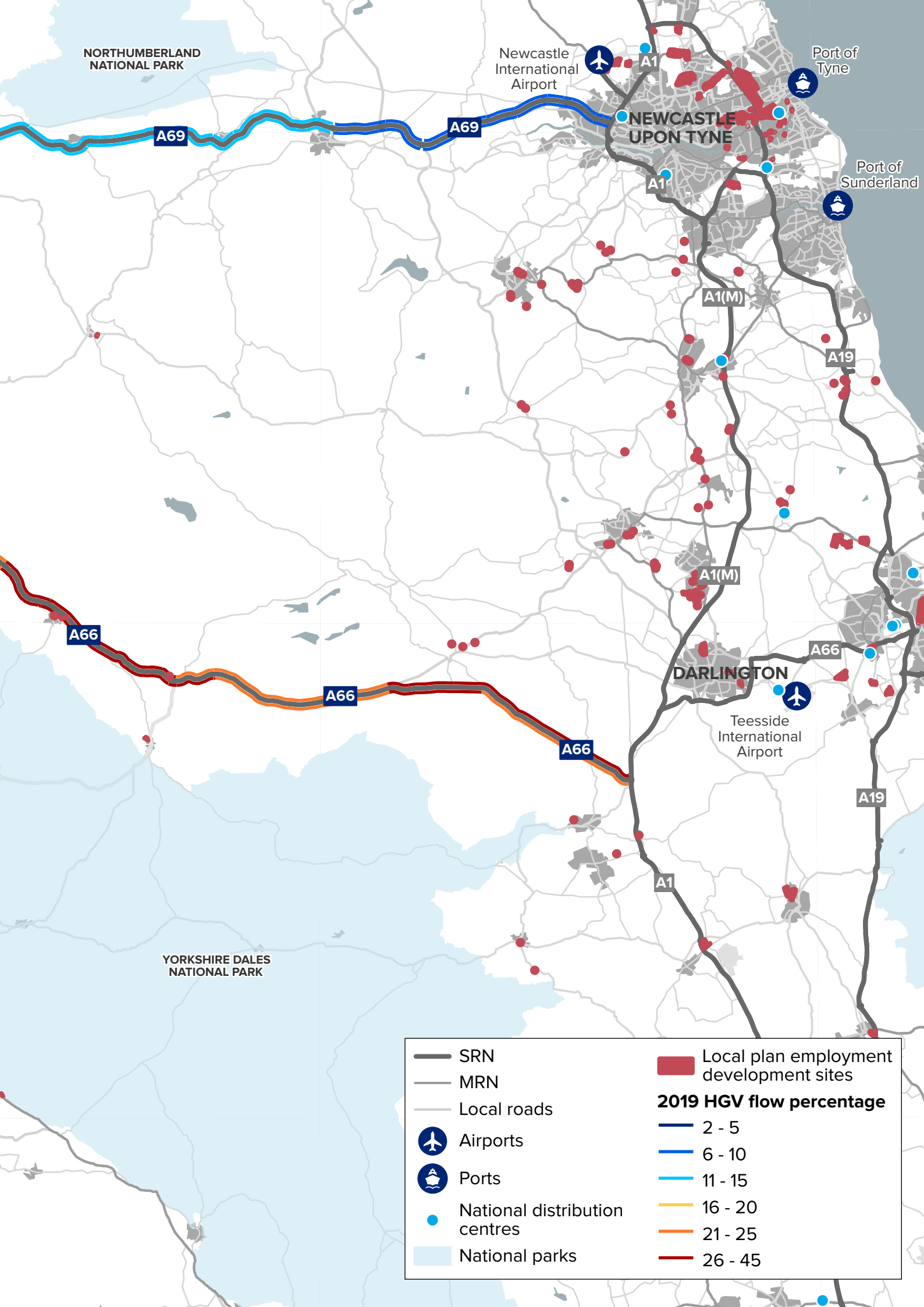


Figure 22: Local Plan employment sites across the North Pennines route


NORTHUMBERLAND NATIONAL PARK
Newcastle International Airport
A1
Port of Tyne
NEWCASTLE UPON TYNE
A69
A69
A1
Port of Sunderland
A1(M)
A19
A1(M)
A66
A66
A66
DARLINGTON
Teesside International Airport
A19
A1
YORKSHIRE DALES NATIONAL PARK
SRN
MRN
Local roads
Airports
Ports
National distribution centres
National parks
Local plan employment development sites
2019 HGV flow percentage
2 - 5
6 - 10
11 - 15
16 - 20
21 - 25
26 - 45

D. Support regionally significant sustainable development

Objective

Support access to regionally significant sustainable development, in locations including Carlisle, Whitehaven, Kendal, Barrow-in-Furness, Ulverston, Cockermouth and Newcastle

Context

Figure 23 shows sites allocated for residential development in adopted local plans around the North Pennines route area.

Key sites contained in adopted or emerging local plans which are in the vicinity of the North Pennines route include:

- approximately 170 hectares of land allocated for new housing across the Carlisle district (including 10,000 new homes at St Cuthbert's Garden Village)
- approximately 2,100 new homes in Penrith
- 160 hectares of land allocated for housing in Copeland with notable allocations in Whitehaven
- 60 hectares of land allocated for housing in Allerdale (the majority of which is in Workington)
- approximately 200 hectares of new housing in South Lakeland (with significant allocations in Ulverston and Kendal)
- approximately 350 hectares for housing developments in Durham.

There are also strategic housing sites within the Tees Valley off the A66. These include the West Park development to the west of Darlington (1,200 new homes), and the West Stockton Strategic Urban Expansion site to the north-west of Stockton-on-Tees (2,150 new homes). Together, these developments suggest the population will increase across the region.

Our network considerations

We anticipate that large planned developments such as St Cuthbert's Garden Village in Carlisle, Nook Farm, other housing sites in Ulverston, and Carleton in Penrith, will increase demand on the roads that make up the North Pennines route. Other areas such as Whitehaven in Copeland and Workington in Allerdale have a large volume of smaller local plan sites that are forecast to have a cumulative impact on the surrounding network, particularly the A595, which runs north–south through both towns and already experiences congestion and delay.

The mixed-use development at Derwent Forest in Cockermouth (adjacent to the A66) is one of the largest brownfield sites in the UK, with its masterplan suggesting the site could deliver a community-based eco hamlet, a hotel and a green energy manufacturing facility, among other services.

During engagement, interested parties highlighted housing and employment growth in Ulverston and Barrow-in-Furness as areas of concern. These are areas that are a priority for levelling up support, so growth in employment and housing is expected. It is important that the transport infrastructure in these locations can support planned sustainable development. The Cross-A-Moor roundabout on the A590 opened to traffic in July 2022, and was funded by National Highways' Growth and Housing Fund to support the sustainable delivery of new homes across south Ulverston. Further east, we expect strategic housing sites in the Tees Valley to add strain to the surrounding road network, including the A66. This would likely contribute to delays and slower journey times (particularly on the single carriageway sections) as demand increases.

This objective aims to support sustainable development, notwithstanding the outcome from the statutory planning process for local plans and individual planning applications.

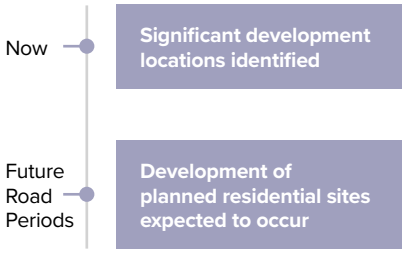
Outcomes

- Support for the delivery of sustainable planned housing and employment development across the North Pennines with full engagement in the planning process
- Increased sustainable travel to access new developments to reduce transport-related emissions
- Support for the levelling up of the region

DfT's Strategic objectives

- Network performance
- Improved environmental outcomes
- Growing the economy
- Managing and planning the SRN for the future

Timeframe based on the issues and constraints identified



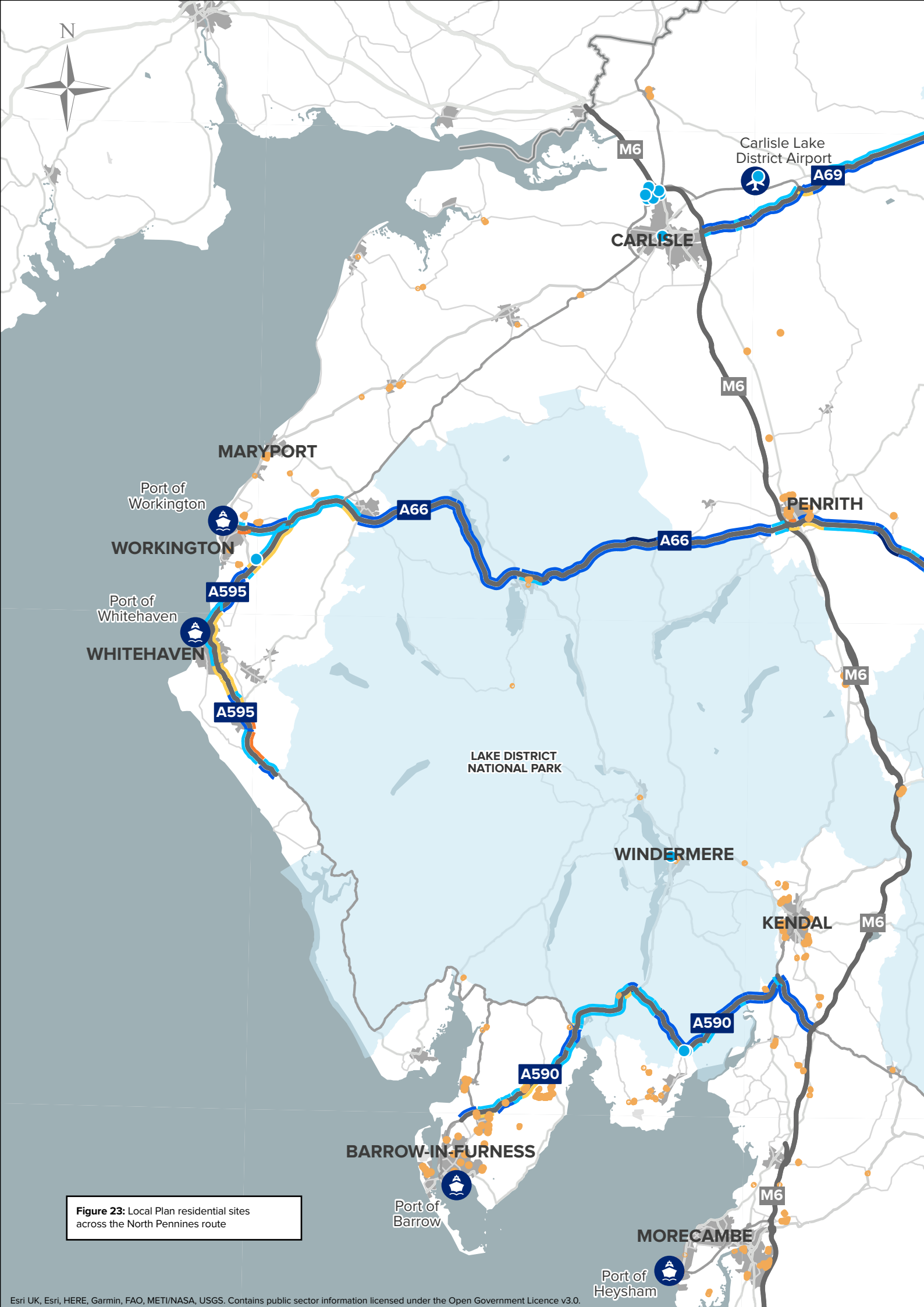
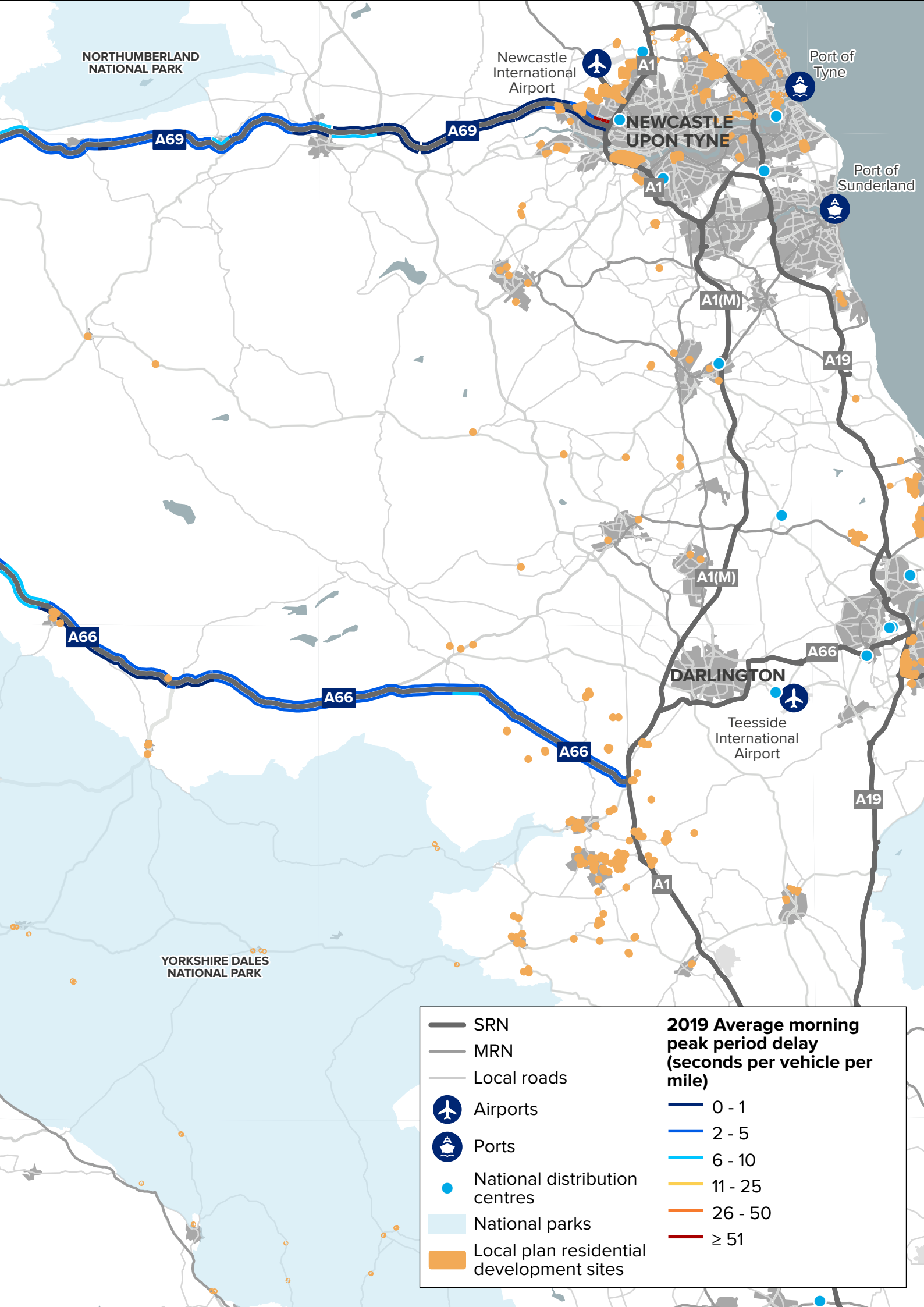
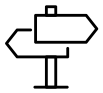


Figure 23: Local Plan residential sites across the North Pennines route


NORTHUMBERLAND NATIONAL PARK
Newcastle International Airport
A1
Port of Tyne
A69
A69
NEWCASTLE UPON TYNE
A1
Port of Sunderland
A1(M)
A19
A1(M)
A66
A66
DARLINGTON
Teesside International Airport
A66
A66
A19
A1
YORKSHIRE DALES NATIONAL PARK
SRN
MRN
Local roads
Airports
Ports
National distribution centres
National parks
Local plan residential development sites
2019 Average morning peak period delay (seconds per vehicle per mile)
0 - 1
2 - 5
6 - 10
11 - 25
26 - 50
≥ 51



E. Support the visitor economy

Objective

Support the North of England visitor economy by improving gateways to the Lake District National Park such as Newby Bridge, Kendal, Keswick and Whitehaven, and other significant tourist destinations accessed by the route, such as the North Pennines Area of Outstanding Natural Beauty, the Yorkshire Dales and the Frontiers of the Roman Empire

Context

The route supports a visitor economy of 369 million visitors to the North of England per year, with the Lake District forming the most significant tourist attraction across the route area. The Lake District is the largest National Park in England. Visitor numbers have been increasing over the last decade, rising by 27% between 2009 and 2019, and now totalling 16 million visitors per annum. Over the same period, visitor spend increased by 62%[45].

There are two UNESCO World Heritage Sites that the route interacts with. The A595, A590 and A66 provide access for visitors to The English Lake District whilst the A69 provides the main strategic access route to the Frontiers of the Roman Empire. With growing visitor numbers, the need for the region to have a reliable and resilient road network may increase during peak tourist times.

Other key tourism sites that the route supports include the Yorkshire Dales and the North Pennines AONB. The districts that the route passes through rely on tourism related industries to different extents, with these industries comprising 21.5% and 19% of employment in South Lakeland and Eden, respectively[46].

Visitors to the area often have a high reliance on route guidance, such as through VMS. In the recent engagement, interested parties said they expected to see an increasing reliance on electric vehicle charging points, and other alternative fuels, as the UK moves away from conventional petrol and diesel vehicles.

Our network considerations

The route experiences seasonal variations in demand due to leisure and tourism, with some consequential congestion and journey time uncertainty during the summer peak period. The 2019 summer peak delays, shown in Figure 24, illustrate the locations of summer Friday delays across the route with higher delays shown close to Warwick Bridge, Whitehaven, Penrith, Ulverston, and Greenodd. Notably, there are also a significant number of collisions involving walkers, cyclists and horse riders who use roads in these areas for leisure purposes.

Recent growth in the domestic leisure market due to the increased popularity of 'staycations' since the outbreak of Covid-19 has reinforced journey time uncertainty, with sections of the route experiencing increased seasonal delays in 2021. While tourism boosts the economy, it can lead to delays on key routes serving the Lake District National Park and other popular tourist destinations in the area. As part of the recent engagement, interested parties highlighted the need for improvements on the A595 and the A66 (West of the M6). This aligns with the 'attract and disperse' policy of the Lake District National Park, which lures visitors to the major attractions of the Central and North Lakes, before encouraging them to explore quieter, lesser-known areas of the National Park. This policy aims to ensure that areas are not left behind or excluded from the growing popularity of the Lake District.

85% of visitors currently use private cars to access the National Park. The Lake District National Park authority has committed to accelerating transport decarbonisation and increasing opportunities for sustainable and active travel, highlighting the potential for better integration with other modes[47]. It is a priority of the A66 upgrade scheme to ensure coherent provision of active travel infrastructure.

45 TfN (2021) *Visitor Economy and Transport in the North of England.* https://transportforthenorth.com/wp-content/uploads/Visitor-Economy-and-Transport-in-the-North-of-England_Full.pdf
46 ONS (2019) *Business Register and Employment Survey.* https://www.ons.gov.uk/surveys/informationforbusinesses/businesssurveys/businessregisterandemploymentsurvey
47 Lake District National Park (2020) *Outcome 5: Sustainable travel and transport.* https://www.lakedistrict.gov.uk/caringfor/lake-district-national-park-partnership/management-plan/sustainable-travel-and-transport

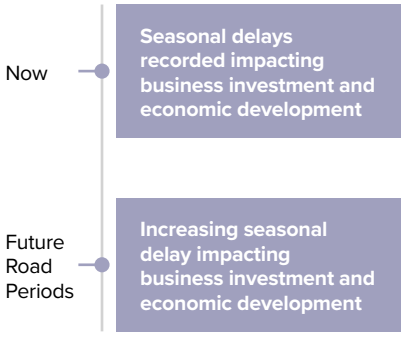
Outcomes

- Safer and more reliable access to the Lake District National Park and other attractions, while limiting impact on sensitive environmental areas
- Reduced impact of the seasonal visitor economy on the SRN

DfT's Strategic objectives

- Improving safety for all
- Network performance
- Growing the economy

Timeframe based on the issues and constraints identified



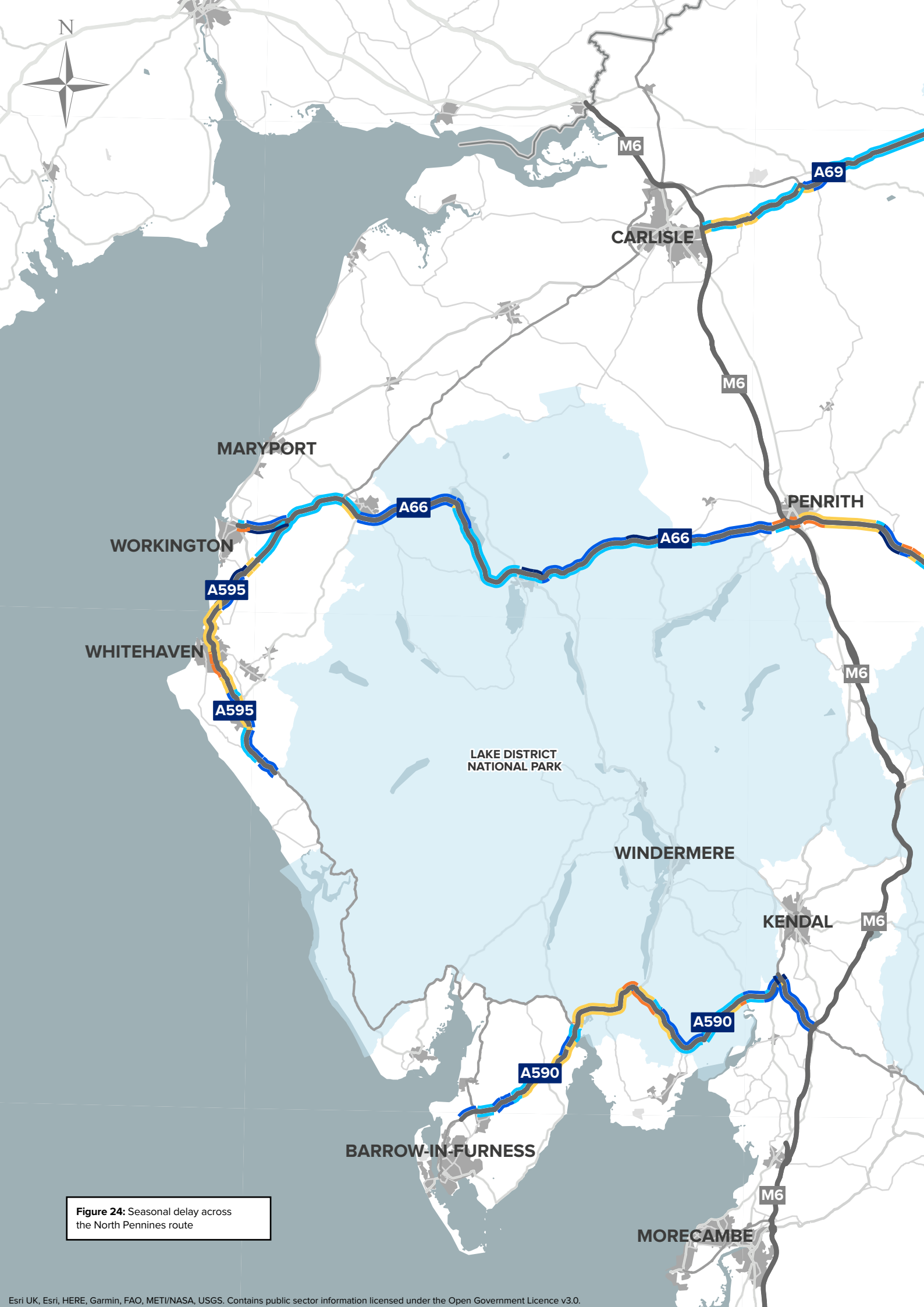
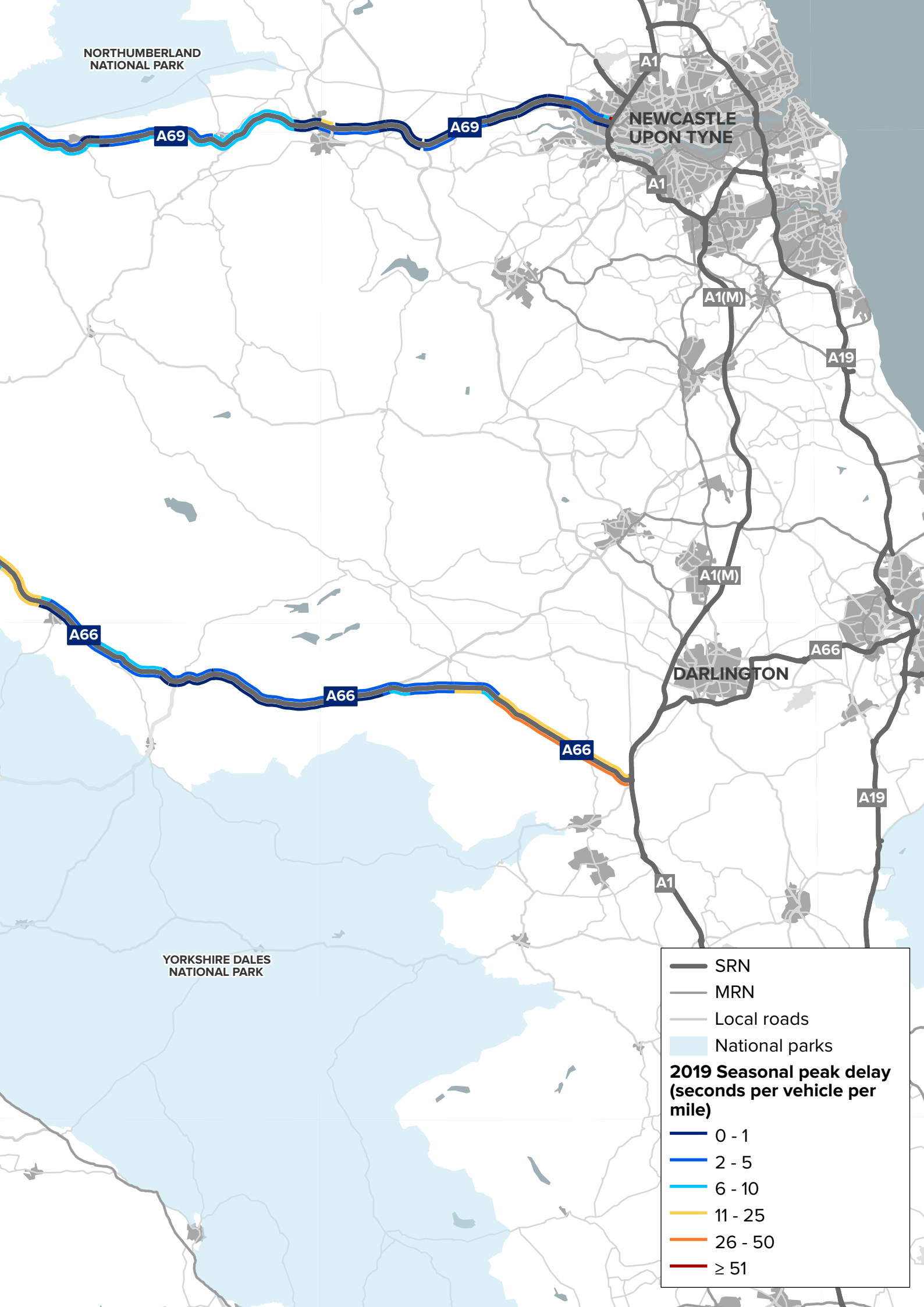


Figure 24: Seasonal delay across the North Pennines route


NORTHUMBERLAND NATIONAL PARK
A69
A69
A1
NEWCASTLE UPON TYNE
A1
A1(M)
A19
A66
A66
A66
A1(M)
DARLINGTON
A66
A19
A1
YORKSHIRE DALES NATIONAL PARK
SRN
MRN
Local roads
National parks
2019 Seasonal peak delay (seconds per vehicle per mile)
0 - 1
2 - 5
6 - 10
11 - 25
26 - 50
≥ 51

F. Support connectivity for rural communities

Objective

Support effective local connectivity through improved integration with sustainable transport modes on the A66, A595, A590 and A69, benefitting rural communities and the environment

Context

There are a range of reasons why improved integration with sustainable modes would be beneficial to rural communities and the natural environment of the North Pennines region.

At National Highways, we have a net zero carbon highways plan[48] to achieve by 2050 across the SRN. Modal shift towards sustainable transport modes would serve to reduce carbon emissions.

Increased use of sustainable modes for the wide variety of journeys using the route, including local travel, could also serve to reduce the impact of the SRN on noise and air quality.

Given that resilience issues have been identified on parts of the route, arising from severe weather events and the risk of flooding from surface water, there is benefit in road users having access to alternative travel options.

There are inequalities in the provision of public transport services, which are strongly linked to where people live.

Public transport helps to maintain access to vital amenities and services, however is relatively limited in the North Pennines route area, where 23% of households do not own a car. Cycle networks are also relatively limited. Better integration with sustainable modes would serve to reduce inequalities in access to employment, healthcare, education, and local amenities.

The region is undergoing socio-demographic change, with an ageing population in many of these locations due to younger people leaving and older people moving to these areas for retirement. An improved offer of transport options may serve not only to retain and attract the younger population to the area, but to reduce reliance on the private car for older people.

Severance has been identified as an issue at various locations across the route where the SRN acts as a barrier to walking and cycling. This severance prevents active travel users continuing their journey in a direct and consistent manner which in turn discourages pedestrian and cyclist journeys across our network.

Our network considerations

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 Ulverston and Swarthmoor on the A590; Whitehaven on the A595; Workington and Cockermouth on the A66; and Warwick Bridge, Thorngrafton and Denton on the A69.

In addition, there are receptors within 300m of the SRN that may be impacted by noise near Ulverston on the A590; Whitehaven on the A595; Cockermouth on the A66; and Warwick Bridge and Denton on the A69.

Interested parties noted concerns with bus services along the route being unreliable, infrequent and insufficient to support the population. Particular routes of concern were identified through the engagement, including services between Kendal and Barrow-in-Furness. The engagement also identified areas with no bus services including between Sellafield and Cockermouth, reflecting a reliance on private vehicles in these areas.

Severance between rural communities, particularly those along the A590 and A595 corridors (including Ulverston, Barrow-in-Furness, Whitehaven and Egremont) is exacerbated by limited provision for cyclists and gaps in the public transport network. Severance can also occur on roads that are susceptible to flooding from surface water and other extreme weather events which can result in road closures. There is also ground instability evident along the A590 at Newby Bridge and Greenodd, whilst sections of the A66 are often forced to be closed due to snow and heavy winds. Sections of the A66 near to Bassenthwaite Lake are also prone to flooding from surface water, causing widespread disruption and long diversions for road users.

48 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

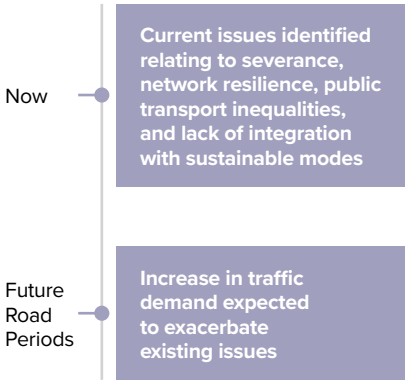
Outcomes

- Reduced impact of rural isolation and car dependency across the North Pennines
- Increased use of sustainable modes and better connectivity across the route for rural communities, while lessening the impact on the environment

DfT's Strategic objectives

- Improved environmental outcomes
- Growing the economy
- Managing and planning the SRN for the future

Timeframe based on the issues and constraints identified



G. Better informed drivers

Objective

Improve communications to better inform drivers and improve their end to end journey experience, to support the regional and national economy

Context

The North Pennines route features six message signs along the A66, A595 and A590. The route also features some provision for electric vehicles with charging points, some of which are rapid charging points.

While the route is technology-enabled to a certain degree, interested parties, road users and communities called for a higher standard during engagement. Those we engaged with raised that the existing provision is aged and infrequent. This makes it difficult to manage and communicate information, such as diversion routes, to road users in the event of a planned or unplanned closure.

This can result in significant disruption, and impacts the resilience of the route. Diversion routes are also significantly longer, leading to poor road user satisfaction. The impact is significantly greater during bank holidays and school holidays, where tourist-related demand on the network increases, and during the winter months when there is an increased likelihood of closures related to poor weather.

As the route is generally rural in nature, many of the official Diversion Routes for Unplanned Events (DRUEs) are less suitable for certain vehicle types, such as HGVs. This can result in increased congestion, reduced air quality and increased noise.

Our network considerations

Across the route there are gaps in infrastructure for electric vehicles, surveillance, and communication with road users. The A69 is the most enabled road across the North Pennines route, with the largest gap in charging infrastructure being a 26 kilometre distance between charging points. The A590 and A66 have larger gaps (up to 40 kilometres) between charging points, and the charging points across the route vary in standard and charging speed.

The A69 has some provision of CCTV, Advanced Motorway Indicator Signs, Vehicle Message Signals, and National Road Telecommunications Services. The A66, A595, and A590 have none of these. Interested parties highlighted a general concern about inadequate communication with road users across the entire North Pennines route.

Outcomes

- Road users are able to make informed decisions about their route, including in the event of a planned or non-planned closure on the route, resulting in increased driver satisfaction
- Road users are supported in their choice to travel by electric vehicles throughout the North Pennines

DfT's Strategic objectives

- Improving environmental outcomes
- Growing the economy
- Managing and planning the SRN for the future
- A technology-enabled network

Timeframe based on the issues and constraints identified

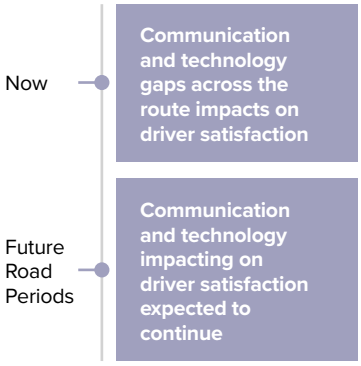


Table 2: Evidence used to inform objectives

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
A	**Promote a resilient and consistent network** Improve user experience of safe and reliable journeys through provision of a resilient and consistent network across the route	Objective A covers: • The A69 single carriageway sections between Carlisle and Newcastle • The A69 at the Styford roundabout and the area around the Bridge End roundabout in Hexham • The A66 staggered junctions with Great Broughton and Brigham, to the East of Workington in Great Broughton • The A66 between Barnard Castle and A1(M) • The A595 north of Whitehaven at the Pelican garage • The A595 south of Whitehaven near Scalegill Road • The A590 at Gilpin Bridge • The A590 at Greenodd • The A590 at Newby Bridge	**Improving safety for all** • Improved resilience required of the network around safety, unplanned weather events, and lengthy diversion routes in the event of road closures • Locations along the route are considered unsafe, for drivers and non-motorised users alike. The consistency of the route layout and signage provision was raised as a safety concern **Growing the economy** • Limited network resilience was raised as a concern due to the likely impact on strategic journey times	**Transport for the North** • Work closely with local authorities to ensure that the highway network overall works safely, efficiently and effectively to provide high quality and seamless customer journeys • The Transport for the North (TfN) Strategic Transport Plan (STP) highlights the importance of the need for resilient alternative road routes to the major arterial corridors (M1, M6 and M56) including key east-west routes such as the A66	**Improving safety for all** Safety issues along the A590 include Gilpin Bridge and Newby Bridge Garage where between 11%-25% of fatal and serious collisions involve walkers, cyclists and horse riders. Other areas with a high percentage of collisions involving WCHs include the Kemplay Bank roundabout along the A66 in Penrith and New Road (Pelican garage) along the A595 North of Whitehaven. Concentrations of collisions and sections of the route where people were killed or seriously injured (KSIs) including: • A590 through Ulverston and adjacent to Barrow-in-Furness • A595 through Whitehaven • A66 in Workington and adjacent to Keswick and Penrith • A590 at the Brettargh Holt roundabout **Network performance** Notable delay is experienced at a number of locations including: • A590: Ulverston centre (up to 154 seconds per vehicle per mile) • A66: Penrith (up to 248 seconds per vehicle per mile) • A590: Greenodd (up to 25 seconds per vehicle per mile)

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
B	**Support reliable access to the east and west coast ports** Support reliable access to the east and west coast ports and airports, serviced by the A66, A69, A590 and A595, to encourage sustainable economic growth and strategic connectivity	Objective B covers the whole of the route, including: • The A66 east of the A1(M) in the East to Workington in the West • The A69 from Newcastle upon Tyne in the East to Carlisle in the West • The A595 from the A66 at Bridgefoot to Calder Bridge (near Sellafield) • The A590 from the M6 (near Milnthorpe) in the East to Barrow-in-Furness in the West	**Growing the economy** • Connectivity to the East and West coast ports was raised as a concern as this is considered likely to impact the region's capacity to become a market leader in the low carbon sector • Connectivity challenges for freight were raised and the impact it has on the efficient transfer of goods to and from the ports, gateways and National Distribution Centres	**Transport for the North** • The STP recognises that east–west connectivity is a significant barrier for future growth in the North and business agglomeration which could transform the North's economy • Connecting the Energy Coasts is a key TfN objective. The STP cites improving connectivity between some of the UK's important non-carbon energy, advanced manufacturing, research assets and economic centres will help to improve east-west connectivity and improve journey times • The STP cites how access to international Gateways including Carlisle Lake District Airport, Port of Workington and Port of Barrow will support wider growth in the centre of international excellence for the energy and nuclear sector found in Cumbria	**Network performance** The A66, east of Penrith, has between 20% and 30% freight traffic, some of the highest proportions of HGVs travelling on the SRN. The A66/A595 corridor is relied upon to provide connectivity to the economic hubs of Whitehaven, Sellafield and the Port of Workington. The proposed Moorside Clean Energy Hub and a potential new coal mine in Whitehaven will increase the region's economic activity and demand on the A66 and A595. The North Pennines route also plays an important role for connectivity between international gateways on the East coast including Teesport Freeport and the Port of Tyne, with Cairnryan, the busiest port in Scotland which provides access to Northern Ireland. **Growing the economy** The main barriers to economic growth are considered by interested parties to be: • Inconsistency in network layout • Lack of overtaking opportunities • Limited parking capacity for HGVs

Objective		Extent	Chapter 3 Views raised by our customers and neighbours	Chapter 4 Integration with our partners' strategies and priorities	Chapter 5 Challenges and issues identified
C	**Support trans-Pennine connectivity** Support trans-Pennine connectivity for all users, particularly freight and coaches, between the Cumbrian and North East energy coasts and centres of highly skilled industries, and support, where appropriate, future growth locations, to assist levelling up the region	Objective C covers the whole of the route, including: • The A66 east of the A1(M) in the East to Workington in the West • The A69 from Newcastle upon Tyne in the East to Carlisle in the West • The A595 from the A66 at Bridgefoot to Calder Bridge (near Sellafield) • The A590 from the M6 (near Milnthorpe) in the East to Barrow-in-Furness in the West	**Growing the economy** • Connectivity challenges for freight were raised and the impact it has on the efficient transfer of goods to and from the ports, gateways and National Distribution Centres • There is limited provision of HGV parking and freight facilities on the A66, A590 and the A69. There is concern that this impacts the efficient operation of freight over long distances	**Transport for the North** • TfN understand the need to transform economic performance in the area and recognises the importance of east-west trans-Pennine connectivity **Department for Transport** • The National Survey of Lorry Parking undertaken by the Department of Transport in 2017 showed that the North West region was identified as needing increased parking facilities. It was estimated that 15% of practical additional spaces are needed, equivalent to 61 lorry parking spaces	**Network performance** Some of the delay on the A595 can be attributed to the additional demand placed on the network linked to Sellafield. Similarly, a proportion of the delay on the A590 can be linked to demand generated by BAE Systems in Barrow-in-Furness. These large employment sites have large catchment areas, attracting journeys by road to the SRN. The sections of the A595 and A66 where delays are forecast to increase in future years would subsequently impact upon access to the Port of Workington and the highly skilled industries located in Workington and Whitehaven. **Growing the economy** Despite the large proportion of HGVs, there are limited facilities for lorries and other larger vehicles including coaches, particularly on the A69 and A66. The lack of facilities capacity for these larger vehicles means that they often have to use unsecure laybys or drive long distances to other service areas.

Objective		Extent	Chapter 3 Views raised by our customers and neighbours	Chapter 4 Integration with our partners' strategies and priorities	Chapter 5 Challenges and issues identified
D	**Support regionally significant sustainable development** Support access to regionally significant sustainable development, in locations including Carlisle, Whitehaven, Kendal, Barrow-in-Furness, Ulverston, Cockermouth and Newcastle	Objective D covers: • The A595 between Great Broughton and Whitehaven and the nuclear industries on the Cumbrian Coast that it serves • The A69 to the east of Carlisle (for access to Carlisle Kingmoor Park Enterprise Zone) • The A69 to the west of Newcastle (Scotswood Development) • The A66 through Penrith (key location for strategic traffic heading towards the Cumbrian Coast along the A66 from the M6) • The A595 from Ulverston to Barrow-in-Furness (for access to other major industries including BAE systems, Siemens and GlaxoSmithKline) • The A595 between the M6 (Milnthorpe) and Sizergh (key location for strategic traffic heading towards the major industries in Barrow-in-Furness along the A66 from the M6)	**Growing the economy** • Housing and employment growth in Ulverston and Barrow-in-Furness	**Transport for the North** 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, in order to unlock economic growth, deliver new homes, increase active travel, and improve public transport. **Network Rail** Network Rail and other network operators remain open to solutions to reduce/remove traffic from the road network through the creation of park and ride sites where appropriate.	**Network performance** It is anticipated that congestion on the A590, A595, A66 and A69 will worsen as a result of increased traffic across the route area. Traffic growth from developments have the potential to exacerbate existing issues of congestion, road safety, and localised air pollution. Large planned developments such as St Cuthbert's Garden Village in Carlisle, Nook Farm, other housing sites in Ulverston, and Carleton in Penrith will add strain on existing road network, contributing to delays and slower journey times (particularly on the single carriageway sections) as demand increases. Other areas with significant levels of planned development that may impact on network performance include: • Whitehaven • Workington • Cockermouth • Barrow-in-Furness • Tees Valley (west of Newcastle)

Objective		Extent	Chapter 3 Views raised by our customers and neighbours	Chapter 4 Integration with our partners' strategies and priorities	Chapter 5 Challenges and issues identified
E	**Support the visitor economy** Support the North of England visitor economy by improving gateways to the Lake District National Park such as Newby Bridge, Kendal, Keswick and Whitehaven, and other significant tourist destinations accessed by the route, such as the North Pennines Area of Outstanding Natural Beauty, the Yorkshire Dales and the Frontiers of the Roman Empire.	Objective E covers: • The A69 and A595 in Carlisle • The A69 between Hexham and Haltwhistle • The A69 through East Denton (west of Newcastle upon Tyne) • The A66 at the A1(M) junction (Scotch Corner) • The A66 between Greta Bridge and Bowes • The A66 through Brough • The A66 through Keswick • The A595 between Distington and Thornhill • The A590 between Milnthorpe and Newland • The A590 between Dalton-in-Furness and Barrow-in-Furness	**Network Performance** • Connectivity challenges for rural communities were raised, including the impact of seasonal visitor economy traffic, as this is likely to impact the economic growth of the region • The A595 has significant congestion making it unpleasant, particularly during summer months **Growing the economy** • The A595 is a key visitor route with a need to deliver the key policy of 'attract and disperse' to access the Lake District Coast / Western Lake District	**Network Rail** and other network operators state that in Cumbria, there are examples of important stations on the rail network at Oxenholme and Penrith, which act as leisure and tourist gateways to the South and North Lakes respectively, and therefore are important links to the SRN.	**Network performance** The route experiences seasonal variations in demand due to leisure and tourism across the year, with associated variability in congestion and delay. The recent growth in the domestic leisure market, due to the Covid-19 staycation impacts, has been noted to increase journeys on the route in the summer of 2021. Data indicates a number of areas on the SRN experience seasonal delay across the route, most notably Friday evening summer peaks at Warwick Bridge, Whitehaven, Penrith, Ulverston, and Greenodd. Congestion on the A590 and A66 will impact the accessibility of the Lake District National Park, which would inhibit the local rural and visitor economy.

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
F	**Support connectivity for rural communities** Support effective local connectivity through improved integration with sustainable transport modes on the A66, A595, A590 and A69, benefitting rural communities and the environment	Objective F covers the whole of the route, including: • The A66 east of the A1(M) in the East to Workington in the West • The A69 from Newcastle upon Tyne in the East to Carlisle in the West • The A595 from the A66 at Bridgefoot to Calder Bridge (near Sellafield) • The A590 from the M6 (near Milnthorpe) in the East to Barrow-in-Furness in the West	**Growing the economy** • Connectivity challenges for rural communities were raised, including the impact of seasonal visitor economy traffic, as this is likely to impact the economic growth of the region • Limited support for integration with public transport, walking and cycling was raised out of concern that the network is geared towards car dependency and may inhibit the use of other modes **Improved environmental outcomes** • Climate change and the manner in which the network responds to the demands for motorised traffic was raised as a concern along with the associated environmental impacts resulting from road travel	**Transport for the North** • 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 • TfN's Long Term Rail Strategy explores options for the future of Carlisle Station which will consider various scenarios for long-term service levels. **National Highways** National Highways' carbon reduction strategy commits to cutting greenhouse gas emissions to zero: for National Highways operations by 2030, for construction and maintenance by 2040, and for travel on the Strategic Road Network by 2050.	**Growing the economy** Approximately 23% of households in the North Pennines route area do not own a car, many of which are located in rural communities and therefore rely on other modes of transport. **Improved environmental outcomes** Sections of the A590, including at Newby Bridge and Greenodd, and the A66 near to Bassenthwaite Lake, are at higher risk of flooding from surface water, causing severe disruption. The route has significant ecological, cultural and environmental sensitivities including Sites of Special Scientific Interest (SSSIs) and UNESCO World Heritage Sites. Areas where there are receptors within 100 metres of the SRN which may be more likely to experience adverse air quality impacts include: • Ulverston and Swarthmoor on the A590 • Whitehaven on the A595 • Workington and Cockermouth on the A66 • Warwick Bridge, Thorngrafton and Denton on the A69 Areas where there are receptors within 300 metres of the SRN which may be more sensitive to high noise levels include: • Ulverston on the A590 • Whitehaven on the A595 • Cockermouth on the A66 • Warwick Bridge and Denton on the A69

Objective		Extent	Chapter 3 Views raised by our customers and neighbours	Chapter 4 Integration with our partners' strategies and priorities	Chapter 5 Challenges and issues identified
G	**Better informed drivers** Improve communications to better inform drivers and improve their end to end journey experience, to support the regional and national economy	Objective G covers the whole of the route, including: • The A66 east of the A1(M) in the East to Workington in the West • The A69 from Newcastle upon Tyne in the East to Carlisle in the West • The A595 from the A66 at Bridgefoot to Calder Bridge (near Sellafield) • The A590 from the M6 (near Milnthorpe) in the East to Barrow-in-Furness in the West	**A technology-enabled network** • A lack of signage and communication of real time information with drivers was raised, leading to concerns of the impact on driver experience and their ability to route plan effectively • A lack of electric vehicle charging facilities across the route was raised and there was concern that increased electric vehicles on the network in the future would not be met by charging facilities • In the near future there will be increasing reliance on electric vehicle charging points, and other alternative fuels, as the UK moves away from conventional vehicles • Inadequate driver communication for road users to make better informed choices, across the entire North Pennines route • There is an opportunity to improve driver information along the A66	**Transport for the North** The *Strategic Transport Plan's* objectives include to increase efficiency, reliability, integration, and resilience in the transport system. The strategic development corridors on the route support the potential of new transport technologies, including electric vehicles, smart and adaptive traffic management and communication systems, and connected and autonomous vehicles. TfN acknowledges the wider context of the climate emergency, with evidence suggesting that the majority of journey new and in the future will continue to be on the road network, with appropriate support required for zero emission vehicles.	**A technology-enabled network** At present, the route is not technologically enabled. There are significant gaps in infrastructure for electric vehicles, surveillance, and communication with road users along the route. Notably, this includes a 26 kilometre section along the A69 between Haltwhistle and Oakwood where there are no electric vehicle charging points. The A590 and A66 have larger gaps (up to 40 kilometres) between charging points. Whilst the A69 has some provision of CCTV, AMI (Advanced Motorway Indicator Signs), VMS (Vehicle Message Signals), and NRTS (National Road Telecommunications Services), the A66, A595, and A590 have no provision of any of this technology.

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 North Pennines 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 S*trategic 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 25 shows how the route objectives defined in the route strategies, along with the associated cluster analysis of performance metrics, help to refine an initial set of locations for future investigation. Further iterations of sifting as information and analysis evolves will help to inform the Government's setting of RIS3 (2025-2030) and beyond. The input from route strategies early on in this process will ensure that all schemes which are ultimately taken forward align with the route objectives.

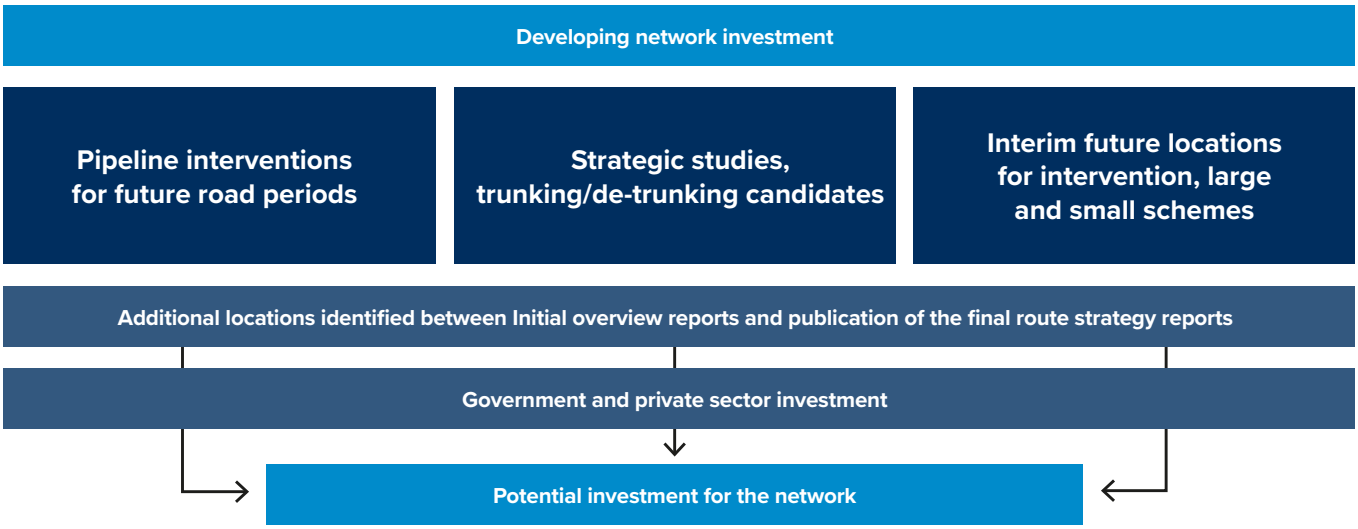


Figure 25: Process to identify potential investment on the network

Types of investment and funding sources

There are a variety of funding streams 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 North Pennines 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 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 delivering infrastructure enhancements on, or close to, the SRN including central government, third parties, private sector developments, and inward investment

RIS2

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

Scheme number	Scheme	Description	Start of works	Open for traffic
Committed for the second road period (2020-2025)				
1	A66 Northern Trans-Pennine	We will upgrade the remaining single carriageway sections of the road to dual carriageway. This will provide additional capacity and ensure the A66 is a consistent standard throughout. Our project has benefited from government's 'project speed' initiative to help economic recovery.	2024-25	2029-30

RIS4 pipeline

There are no pipeline schemes for the fourth road period (2030-2035) identified on the North Pennines route.

Other Notable Schemes

On the North Pennines route, in addition to the major scheme listed above, there is a recently delivered scheme at the A590 Cross-a-Moor junction south of Ulverston. The scheme involved the construction of a new roundabout and link roads connecting to the local road network. The scheme was funded through the National Highways Growth and Housing Fund, from the first road period (2015-2020), and was a collaborative venture with Cumbria County Council, South Lakeland District Council and Cumbria Local Enterprise Partnership. The scheme opened to traffic in July 2022

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. The A66 Northern Trans-Pennine scheme mentioned earlier was an outcome of the Northern Trans-Pennine Strategic Study.

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*[49]. This Plan relates to improving connections between main urban centres, to international gateways, to peripheral regions (for levelling up) and strategic cross-border routes (to strengthen union connectivity). It included a commitment to explore potential asset ownership changes between ourselves and local highway authorities that could be implemented no earlier than the start of RIS3. The DfT 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 North Pennines 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.

49 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 more resilient to changing priorities, and responsive to the environmental agenda.

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

Potential non-road interventions:

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

Potential roads interventions:

- In addition to Lower Thames Crossing we will continue to progress those remaining schemes in RIS1 and RIS2[50] that will not be in construction at the end of RP2, as well as the RIS4 pipeline. 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 26 show the areas identified for further investigation, where interventions 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 mitigation 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.

50 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
		A595		
A595 From Calder Bridge to Thornhill	A	**Safety issues** have been recorded on the A595 between Egremont and Thornhill. **Freight connectivity** is important to access the energy coast along the A595. There is evidence of **recurring congestion** between Workington and Sellafield. There is limited communication with road users due to a **lack of technology** on the A595.	✓	✓
A595 From Egremont to Whitehaven	B	**Community severance** has been identified through the town of Egremont. There are receptors in proximity to the A595 at Whitehaven that could potentially be more susceptible to noise and air quality issues, and **safety issues** have been recorded between Egremont and Whitehaven, with a high proportion of walkers, cyclists and horse riders involved. There is limited communication with road users due to a **lack of technology** on the A595. **Freight connectivity** is important to access the energy coast along the A595. There is evidence of **recurring congestion** and delay through Egremont and Hensingham. **Community severance** through Bigrigg and Whitehaven has also been highlighted as a concern.	✓	✓
A595 From Whitehaven to Distington	C	**Freight connectivity** is important to access the energy coast along the A595. There is evidence of **recurring congestion** and delay through Whitehaven, Parton and Distington. There is limited communication with road users due to a **lack of technology** on the A595. There are receptors in proximity to the A595 at Parton that could potentially be more susceptible to noise and air quality issues, and there have been **safety issues** recorded between Moresby and Distington with a high proportion of walkers, cyclists and horse riders involved.		✓
A595 Bridgefoot to Lillyhall	D	**Freight connectivity** is important to access the energy coast along the A595. This can be inhibited by **recurring congestion** and delay along the A595 through Lillyhall around the Industrial Estate. There is a limited communication with road users due to a **lack of technology** on the A595. **Safety issues** have been recorded on the A595 adjacent to the Lillyhall Industrial Estate.	✓	✓
		A66		
A66 East of Workington	E	**Freight connectivity** is important to support trans-Pennine utilisation of the coastal ports, and this is inhibited by r**ecurring congestion** and delay east of Workington. Roadside facilities are limited on the A66, including parking for HGVs and coaches, as well as electric vehicle charging infrastructure and other services. There is a limited communication with road users due to a **lack of technology** on the A66. There are receptors in proximity to the A66, east of Workington, that could potentially be more susceptible to noise and air quality issues.	✓	✓
A66 From Bridgefoot to Cockermouth	F	**Safety issues** have been recorded at Great Broughton and Brigham. **Freight connectivity** is important to support trans-Pennine utilisation of the coastal ports, and this is inhibited by **recurring congestion** and delay between the A595 junction in Bridgefoot and A595 junction in Cockermouth. **Roadside facilities** are limited on the A66, including parking for HGVs and coaches, as well as electric vehicle charging infrastructure and other services. There is a limited communication with road users due to a **lack of technology** on the A66.	✓	✓

Area location	Area of interest	Area issues	Now	Future road periods
A66 From Cockermouth to Keswick	G	There is a risk of **flooding from surface water** along this section of the A66, particularly near to Bassenthwaite Lake. There is limited communication with road users due to a **lack of technology** on the A66. **Freight connectivity** is important to access the energy coast along the A595, inhibited by **recurring congestion** and delay west of Cockermouth, between Braithwaite and Portinscale and north of Keswick Town Centre. **Roadside facilities** are limited on the A66, including parking for HGVs and coaches, as well as electric vehicle charging infrastructure and other services. There have been a number of recorded **safety issues** west of Keswick, particularly involving walkers, cyclists and horse riders, and **community severance** is highlighted as a concern in Cockermouth and Keswick.	✓	✓
A66 From Keswick to Troutbeck	H	There have been a number of recorded **safety issues** east of Keswick along the A66. There is a limited communication with road users due to a **lack of technology** on the A66. **Roadside facilities** are limited on the A66, including parking for HGVs and coaches, as well as electric vehicle charging infrastructure and other services. **Freight connectivity** is important to support trans-Pennine utilisation of the coastal ports, and this is inhibited by **recurring congestion** and delay north of Keswick Town Centre.	✓	✓
		A590		
A590 From Milton to Sizergh	I	There is limited communication with road users due to a **lack of technology** on the A590. This includes a gap of 40km with no electric vehicle charging infrastructure between Ulverston and the M6. **Freight connectivity** is important to support access to the port at Barrow.	✓	✓
A590 From Sizergh to Lindale	J	**Safety issues** have been recorded at the Gilpin Bridge junction. **Freight connectivity** is important to support access to the port at Barrow. This can be inhibited by **recurring congestion** and delay through Lindale, Gilpin Bridge and Levens, and a risk of **flooding from surface water**. There is limited communication with road users due to a **lack of technology** on the A590. This includes a gap of 40km with no electric vehicle charging infrastructure between Ulverston and the M6.	✓	✓
A590 From Newby Bridge to Ulverston	K	There is limited communication with road users due to a **lack of technology** on the A590. This includes a gap of 40km with no electric vehicle charging infrastructure between Ulverston and the M6. There are receptors in proximity to the A590 at Greenodd, Newland and Ulverston that could potentially be more susceptible to noise and air quality issues. **Safety issues** have been recorded, particularly involving walkers, cyclists, and horse riders. **Freight connectivity** is important to support access to the port at Barrow. This can be inhibited by **recurring congestion** and delay through Newland (east of Ulverston) and a risk of **flooding from surface water**. **Community severance** is highlighted as a concern in Ulverston.	✓	✓
A590 From Ulverston to Dalton in Furness	L	**Freight connectivity** is important to support access to the port at Barrow. This can be inhibited by **recurring congestion** between Ulverston and Dalton in Furness. **Safety issues** have been recorded through Ulverston particularly involving walkers, cyclists, and horse riders. There are receptors in proximity to the A590 at Ulverston that could potentially be more susceptible to noise and air quality issues. There is limited communication with road users due to a **lack of technology** on the A590.	✓	✓

Area location	Area of interest	Area issues	Now	Future road periods
		A69		
A69 From Carlisle to Brampton	M	**Freight connectivity** is important to support east-west connectivity between the energy coasts. This can be inhibited by **recurring congestion** and delay in east Carlisle and Warwick Bridge, and a lack of **roadside facilities**, including parking for HGVs and coaches, as well as electric vehicle charging infrastructure. There is limited communication with road users due to a **lack of technology** on the A69.	✓	✓
A69 From Haltwhistle to Hexham	N	There are receptors in proximity to the A69 at Thorngrafton that could potentially be more susceptible to noise and air quality issues. There is limited communication with road users due to a **lack of technology** on the A69. Whilst the A69 is the most technology enabled road across the North Pennines route, there are still large gaps in infrastructure, including 26km between Haltwhistle and Oakewood where there are no electric vehicle charging points. **Freight connectivity** is important to support east-west connectivity between the energy coasts. This can be inhibited by **recurring congestion** and delay east of Haltwhistle, and **safety issues**, of which there have been a number recorded at the Bridge End roundabout. There is also a recorded lack of **roadside facilities**, including parking for HGVs and coaches, as well as electric vehicle charging infrastructure.	✓	✓
A69 Heddon on the Wall to Denton	O	There are receptors in proximity to the A69 at Denton that could potentially be more susceptible to noise and air quality issues. There is limited communication with road users due to a **lack of technology** on the A69. **Freight connectivity** is important to support east-west connectivity between the energy coasts. This can be inhibited by **recurring congestion** and delay at Denton on the approach to the A1. There is also a recorded lack of **roadside facilities**, including parking for HGVs and coaches, as well as electric vehicle charging infrastructure.	✓	✓

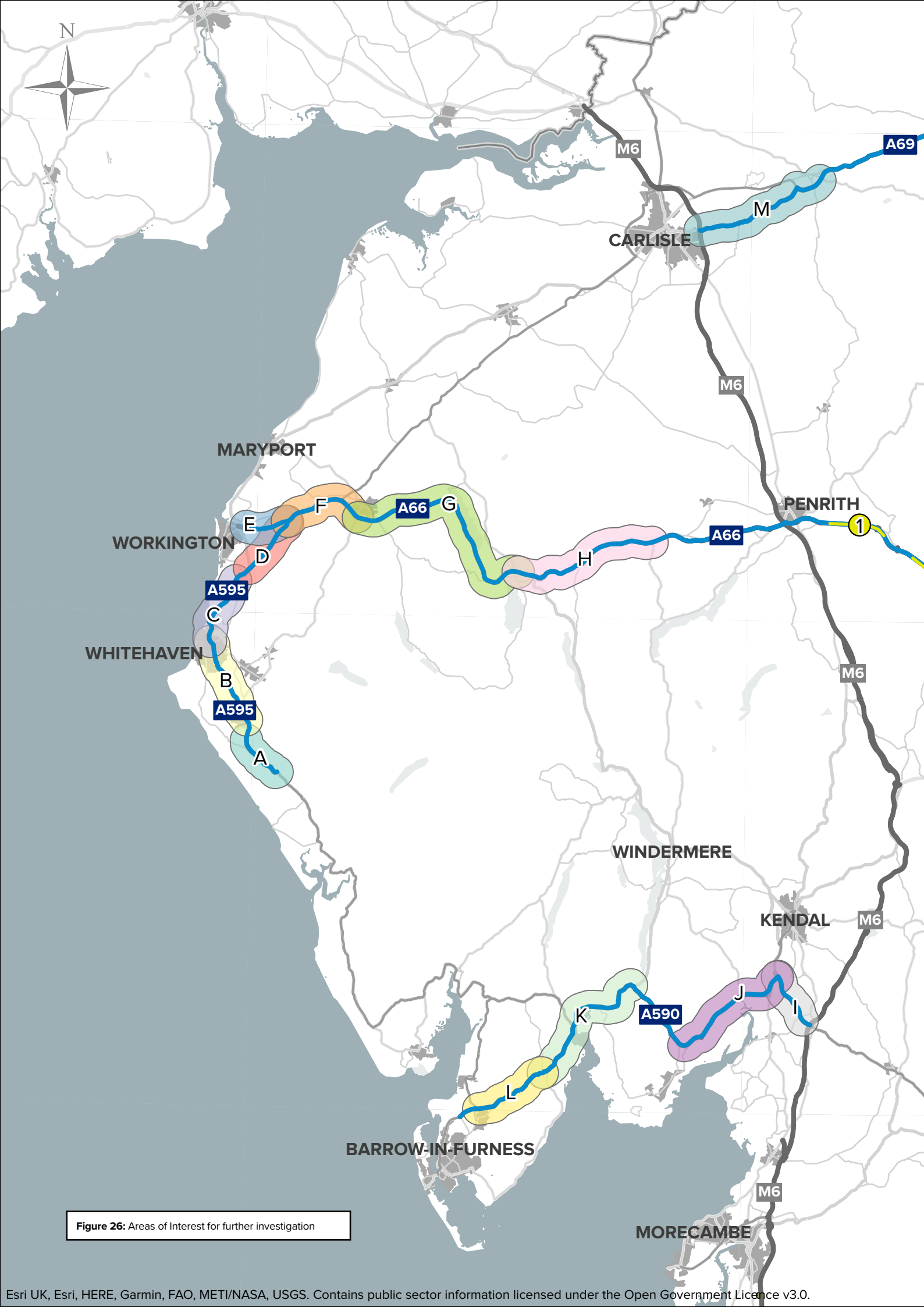
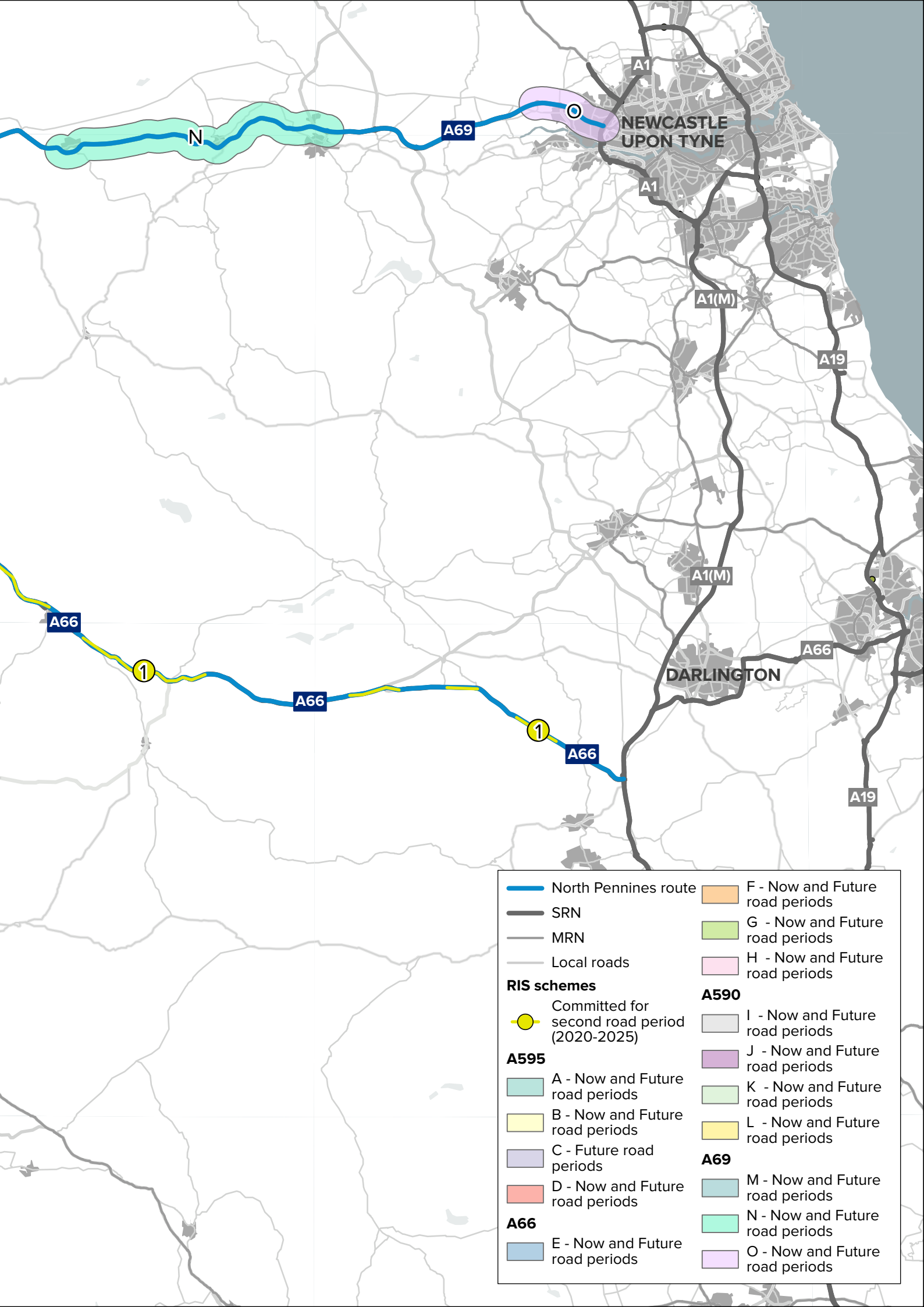


Figure 26: Areas of Interest for further investigation


A1
NEWCASTLE UPON TYNE
A1
A69
N
A1(M)
A19
A1(M)
A66
A66
DARLINGTON
A66
A66
A19
North Pennines route
SRN
MRN
Local roads
RIS schemes
Committed for second road period (2020-2025)
A595
A - Now and Future road periods
B - Now and Future road periods
C - Future road periods
D - Now and Future road periods
A66
E - Now and Future road periods
F - Now and Future road periods
G - Now and Future road periods
H - Now and Future road periods
A590
I - Now and Future road periods
J - Now and Future road periods
K - Now and Future road periods
L - Now and Future road periods
A69
M - Now and Future road periods
N - Now and Future road periods
O - 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*[51] which sets out our 2050 vision for the SRN to be part of a seamlessly integrated transport system that meets our customers' needs by connecting the country safely and reliably, delivering economic prosperity, social value and a thriving environment. *Our long-term strategic plan to 2050* describes the short, medium and long-term steps to 2050 we believe are needed to make our vision a reality over successive road periods and has been informed by extensive horizon scanning, foresight analysis and engagement with key stakeholders across nine focus areas. The route objectives identified in the route strategies, which also respond to the needs of stakeholders, road users and communities, and the locations for further consideration to achieve these objectives are aligned with the 2050 vision.

Informing the next stage of planning

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

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

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

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

Provide your feedback

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

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

Glossary of terms

Term	Acronym	Description
Active users and active modes of transport		Active users and active modes of transport refers to walkers, cyclists and horse riders.
Air quality management area	AQMA	If a local authority identifies any locations within its boundaries where the Air Quality Objectives are not likely to be achieved, it must declare the area as an Air Quality Management Area (AQMA). The area mayencompass 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 road pavements, structures and tunnels.
At-Grade Junction		An at-grade junction is a junction where two or more roads converge, diverge, meet or cross at the same height, as opposed to an interchange, which uses bridges or tunnels to separate different roads.
Clean Air Zone	CAZ	A clean air zone (CAZ) defines an area where targeted action is taken to improve air quality, and resources are prioritised and co-ordinated to deliver improved health benefits and support economic growth.
Collisions		The severity of a collision is based on the severity of the most severely injured casualty and is broken down into: • Slight collision: One in which at least one person is slightly injured but no person is killed or seriously injured. • Serious collision: One in which at least one person is seriously injured but no person (other than a confirmed suicide) is killed. • Fatal collision: A collision in which at least one person is killed.
Department for Transport	DfT	Department for Transport (DfT) plan and invest in transport infrastructure to keep the UK on the move. DfT work with agencies and partners to support the transport network that helps the UK's businesses and gets people and goods travelling around the country.
Design-Build-Finance-Operate arrangements	DBFO	With a design-build-finance-operate arrangement, the private party provides financing and design, then builds and operates the facility. The public partner provides funding while the project is being used or is active.

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

Glossary of terms

Term	Acronym	Description
National Highways Licence		The Licence sets out the Secretary of State's statutory directions and guidance to National Highways.
National Traffic Information Service		The National Traffic Information Service (NTIS) is provided by National Highways. The Traffic England website provides a range of services to help you avoid delays and plan your journeys but NTIS also makes data available to subscribers for research purposes or for developers to include it in their own applications.
Noise Action Plans		Noise action plans provide a framework to manage environmental noise and its effects. They also aim to protect quiet areas in agglomerations (large urban areas) where the noise quality is good. Noise Action Plans provide a framework for the local management of the Important Areas.
Noise Important Areas	NIA	Noise Important Areas (NIAs) for roads and railways are based upon the strategic noise maps results and are produced in line with the requirements set out in the noise action plans.
Office of Rail and Road	ORR	The Office of Rail and Road (ORR) is the independent safety and economic regulator for Britain's railways and monitor of National Highways
Park and ride		A park and ride offers parking with public transport connections that allows commuters and other people heading to city centres to leave their vehicles and transfer to bus, rail or car share for the remainder of the journey.
Platooning		Heavy Goods Vehicle (HGV) platooning is the use of technology to allow HGVs to travel safely in close proximity at speed with the driver of the lead vehicle controlling the speed, acceleration and braking of the whole 'platoon'.
Receptor (Air quality and Noise)		Location which is sensitive to noise/air quality issues. 300m has been used as the parameter for noise receptors as it's an appropriate length to differentiate between SRN and local roads. 100m has been used for air quality as the distance by which pollutants travel in high concentrations that may have an impact on health.
Regional Traffic Model	RTM	National Highways has a suite of five regional traffic models (RTMs) covering England's SRN. The models allow us to identify future performance and delay on the network, assisting with the development of the route strategies.
Reliability		Reliability is the difference between the typical travel time, allowing for recurring delays, and the observed travel time. This measures the amount of variation due to unexpected variations or unplanned events. Like delay, it is measured in seconds per vehicle per mile. It is a concern for most drivers, but particularly affects just-in-time freight traffic and other strategic journeys.
Road investment strategy	RIS	A Road investment strategy (RIS) is a strategy that outlines a long-term programme for National Highways' motorways and major A-roads with the stable funding needed to plan ahead.
Road period		The defined period of time over which the Government gives a funding commitment. The length of a road period will be specified at the beginning of the RIS development process. Road periods will be multi-year in order to provide the supply chain with increased certainty of investment and intent. Based on current practice within the other infrastructure sectors, it is expected that road periods will continue to be five years in length, though the actual length will be decided by the Government of the day.
Route objectives		Objectives for each route, informed by engagement and analysis, to support the current and future needs of customers and neighbours.
Safe System approach		The Safe System is the current best practice safety culture in road safety, developed over many years and derived most notably from the Swedish Vision Zero and Dutch Sustainable Safety strategies. A best practice road safety culture approach based on the principles that humans make mistakes which could lead to serious injury or death for which it is a shared responsibility of the road user, road managers, vehicle manufacturers, etc. to take appropriate actions to ensure road collisions do not lead to serious or fatal injuries.

Term	Acronym	Description
Seasonal delay		Seasonal delay refers to the difference between the average afternoon peak delay for Fridays in August 2019 (high demand in summer holidays) and the average delay during very low demand periods (in this case, Christmas day is used). This measure is designed to reflect the parts of the network that do not appear to have a problem on average over the year but have seasonal peaks. Seasonal delay is of interest to tourist traffic, particularly people travelling to airports, or other destinations where arriving later than intended could have significant implications.
Severance		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.
Sites of Special Scientific Interest	SSSIs	A Site of Special Scientific Interest (SSSI) is the land notified as an SSSI under the Wildlife and Countryside Act (1981), as amended. SSSI are the finest sites for wildlife and natural features in England, supporting many characteristic, rare and endangered species, habitats and natural features.
Smart motorway		A smart motorway is a section of motorway that employs active traffic management (ATM) techniques to increase capacity through the use of technology including variable speed limits. There are three types of smart motorway: 1. Controlled Motorway: variable speed limits with the hard shoulder operating as it would on a conventional motorway. 2. Dynamic Hard Shoulder (DHS) Running: Variable speed limits with the hard shoulder selectively opened as a running lane during periods where traffic levels are too high for only three lanes of running traffic. When activated, vehicles can use the hard shoulder as a running lane. 3. All Lane Running (ALR): variable speed limits with the hard shoulder removed and converted to a permanent running lane. Smart motorways have a whole system of inter-related safety features, not present on conventional motorways, working together to help keep drivers and their passengers moving safely. The system includes: • Variable speed limits to help keep traffic moving, reducing frustrating stop-start traffic and making journeys quicker • Clearly signed and orange-coloured emergency areas set back from the road and with telephones linking directly to our control rooms • Detection systems to monitor traffic for changes in flows • CCTV cameras that our operators are able to move and zoom to monitor and manage congestion and incidents, where notified. The system has the ability to see 100% of the carriageway • Signs and signals to provide better information to drivers which can alert drivers to hazards ahead and display Red X signs to close lanes to other traffic when a stopped vehicle is identified • Enforcement cameras to deter the minority who break speed limits and ignore Red X signs • Radar stopped vehicle detection
Spatial planning		Spatial planning decides how land should be used or protected. It also organises, designs and makes decisions on where new homes, roads and other infrastructure should be built. Spatial planning aims to make places attractive, safe and environmentally friendly. National Highways is a statutory consultee in the planning system and we encouraged others to seek early advice from us if their development proposal is likely to impact the strategic road network.
Special Areas of Conservation	SACs	A Special Area of Conservation (SAC) is the land designated under Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora.

Glossary of terms

Term	Acronym	Description
STATS19		Data on road traffic casualties on the roads in Great Britain are collected via the STATS19 process. These statistics are collected by police forces, either through officers attending the scene of incidents, from members of the public reporting the incident in police stations after the incident, or more recently online and then validated and published annually by DfT. STATS19 road traffic collision and casualty data is published annually by DfT in the Autumn and provides details of the previous calendar year. These reports have used the data available at the time of analysis, 2015-2018.
Statutory consultee		Statutory consultees are those organisations and bodies, defined by statute, which local planning authorities are legally required to consult before reaching a decision on relevant planning applications.
Strategic Rail Freight Interchange		A large multi-purpose rail freight interchange and distribution centre linked into both the rail and road system.
Strategic Road Network	SRN	The strategic road network (SRN) covers more than 4,500 miles of motorways and major A-roads.
Strategic Traffic / Strategic journeys		Long distance traffic / journeys
Sub-national Transport Bodies	STBs	Sub-national transport bodies (STBs) have a key role in formulating transport strategy and identifying investment priorities at the sub-national level, including for highways. There are 7 STBs in England, who 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 visa 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 Direction 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


Roadbridge

national highways

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