Route Strategy Initial Overview Report

East of England

May 2023

national highways

Contents

The routes

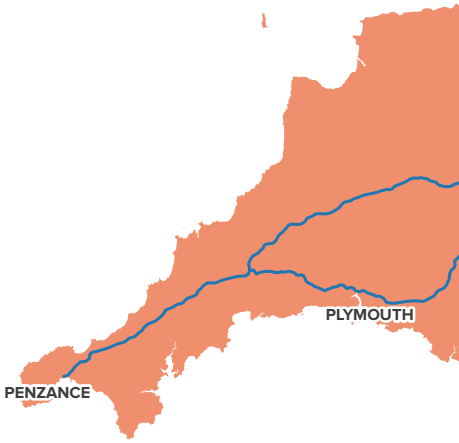
Routes

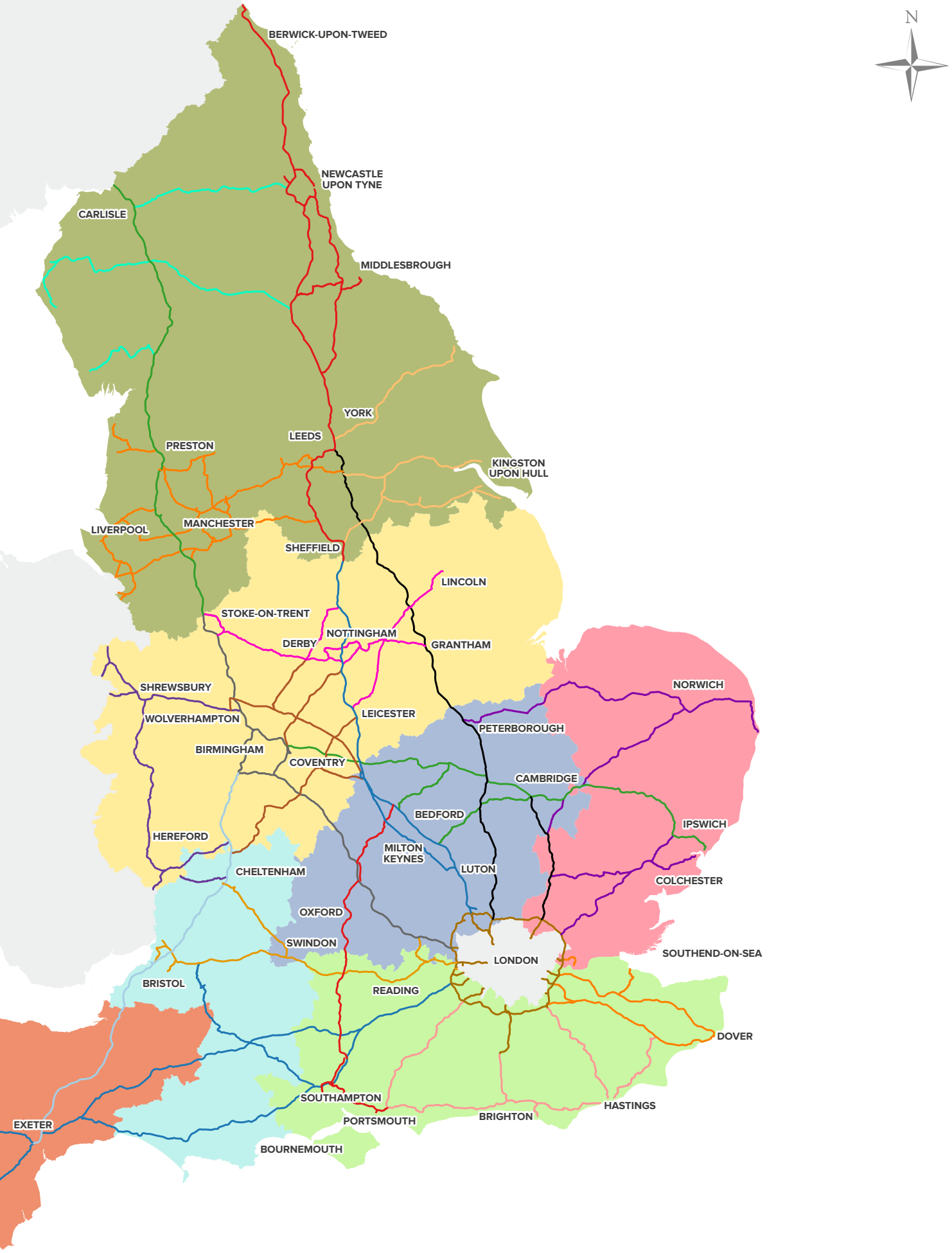
- London to Scotland West (North)
- London to Scotland East (North)
- South Pennines (East)
- South Pennines (West)
- North Pennines
- London to Leeds
- Midlands and Gloucestershire to Wales
- North and East Midlands
- South Midlands
- London to Scotland West (South)
- London to Scotland East (South)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

Sub-national Transport Bodies

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

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

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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
WOLVERHAMPTON
LEICESTER
PETERBOROUGH
BIRMINGHAM
COVENTRY
CAMBRIDGE
BEDFORD
IPSWICH
HEREFORD
MILTON KEYNES
LUTON
CHELTENHAM
COLCHESTER
OXFORD
SWINDON
LONDON
SOUTHEND-ON-SEA
BRISTOL
READING
DOVER
SOUTHAMPTON
HASTINGS
BRIGHTON
PORTSMOUTH
EXETER
BOURNEMOUTH

Executive summary

Introduction

Our strategic road network (SRN) is the backbone of the country. Over 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 East of England route and summarises the outcomes of the route strategy. The report builds on the first two rounds of route strategies in 2015 and 2017. It aims to be more forward looking, integrated and collaborative, while being dynamic enough to respond to the future needs of our customers and neighbours.

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

DFT'S SIX STRATEGIC OBJECTIVES FOR THE STRATEGIC ROAD NETWORK

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

For clarity, this document does not:

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

Customers and neighbours

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

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

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

The route

The East of England Route provides strategic east-west movements across a large area in East Anglia. It consists of approximately 271 miles of the SRN on the A12, A120, A11 and A47 across Essex, Norfolk, Suffolk and Cambridgeshire. As a result, the route caters for numerous consumers, including local, regional and national travel between the region's cities, towns and villages, international freight and tourist traffic.

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

- London to Leeds
- London Orbital and M23
- Kent Corridors to M25

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 the DfT and are set out in the RIS3 *Planning ahead*[2] document in December 2021. Challenges and issues on the route have been identified which correspond to the the DfT's six strategic objectives:

Improving safety for all:

- Higher collision rates and accidents resulting in people being killed or seriously injured, with International Road Assessment Programme (iRAP) Star Ratings of 2 or lower particularly where the route passes through, or near to, communities, particularly the A47 and A120
- Number of collisions being experienced by walkers, cyclists and horse riders, particularly on the A47 through Lowestoft and Great Yarmouth, the A47 near Wisbech and the A120 near Braintree
- There are a number of safety issues at varying junctions, including right turns across traffic, unsignalised roundabouts, and staggered cross roads on the route, such as the Fiveways Roundabout at Mildenhall on the A11 and Marks Tay on the A12 / A120

1 Highways England *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

Network performance

- There are localised delays across East Anglia, with congestion on the A12, A120, A11 and A47.
- Single carriageway sections of the route, such as at Wisbech on the A47 and at Braintree on the A120, will experience increases in delay by 2031
- There is a lack of technology to inform and redirect drivers following incidents

Improved environmental outcomes

- A number of sections of the route at risk of flooding, with coastal and surface water flooding on the A47 west of Great Yarmouth and on the A12 between Ipswich and Colchester, and surface water flooding on the A47 between Peterborough and Kings Lynn and on the A12 south of Chelmsford
- Impacts on areas of outstanding natural beauty with environmental designations and cultural heritage. The A47 is a key gateway to the Norfolk Broads National Park, and the route also provides access to AONBs such as the Suffolk and Norfolk Coasts and Dedham Vale
- There are a number of receptors along sections of the route which may be more sensitive to air quality issues, such as the A12 to the North of Chelmsford and near Colchester, the A120 around Braintree, the A47 to the West of Dereham, the A47 between Great Yarmouth and Lowestoft and the A11 around Attleborough
- There are Air Quality Management Areas at Wisbech and Norwich sit near to the route
- There are a number of receptors along sections of the route which may be more sensitive to noise issues. These sections include on the A12 near Chelmsford, as well as on the A120 around Braintree
- Resilience to future climate change on the route

Growing the economy

- The route provides connectivity between the coast and the rest of the UK, providing access to the region's international gateways at the ports of Kings Lynn, Great Yarmouth, Ipswich, Harwich and Felixstowe, as well as Stansted, Norwich and Southend Airports. Significant growth is expected at these gateways, especially as a result of Freeport East
- The route also provides access to the coasts of Norfolk, Suffolk and Essex, key tourism locations within the UK, with towns and villages along the coast relying heavily on tourism to support local business
- Sustainable development to be placed on strategic routes such as proposed garden villages at Easton Park, Tendring-Colchester Borders and North East Chelmsford as well as planned job and housing growth around Ipswich, Norwich, Kings Lynn, Braintree, Thetford, Wisbech and Peterborough
- The route has a critical economic function in supporting growth and the government's levelling up agenda across the region for places deemed in most need of investment such as Tendring, South End, Great Yarmouth, Kings Lynn, West Norfolk and Peterborough

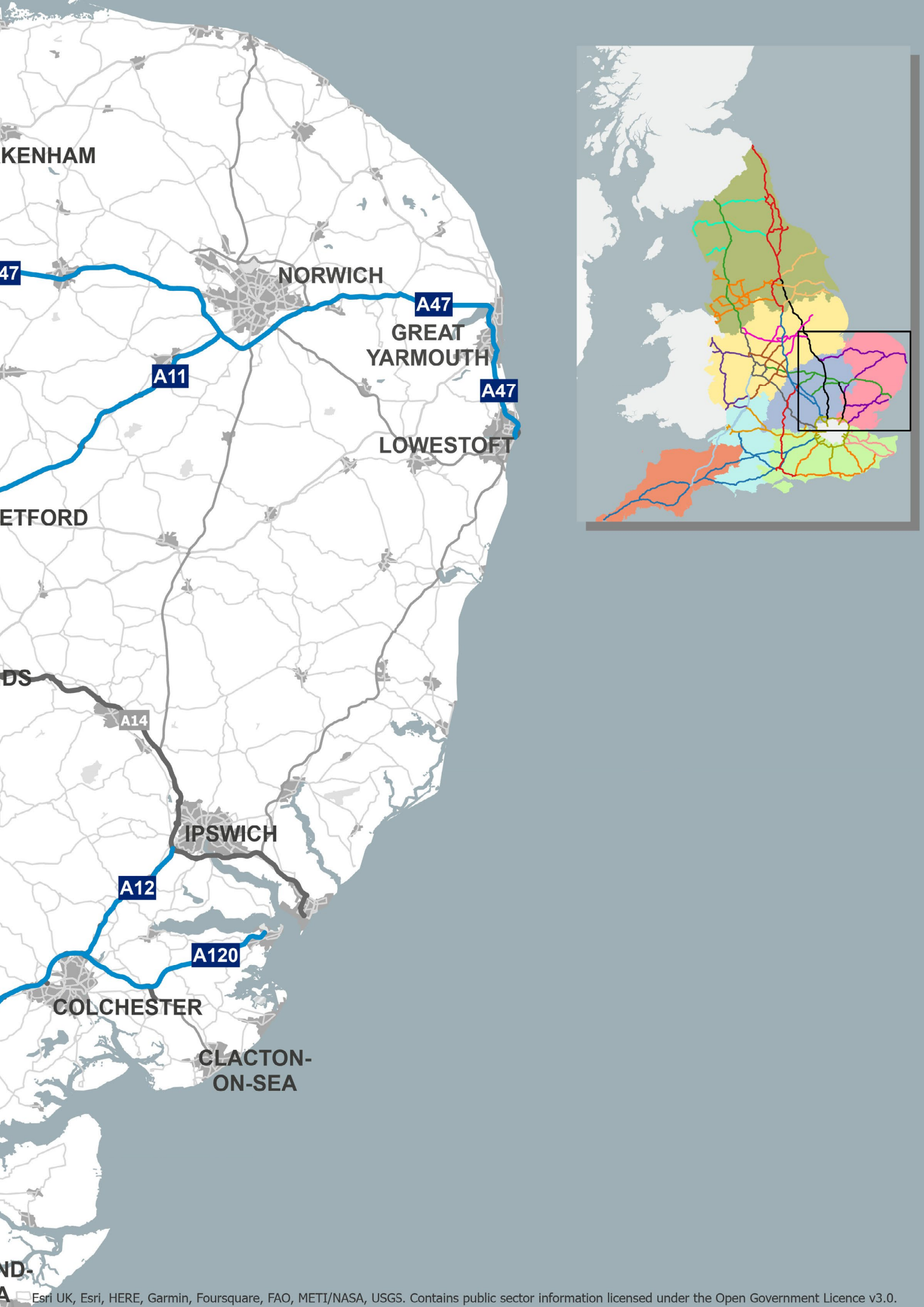
Managing and planning the SRN for the future

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

A technology-enabled network

- Limited real time communications for all road users with little advanced knowledge of problems on the network that would allow better journey planning
- Promoting the carbon agenda, the use of electric vehicles and the limited charging capacity on the route


N
KING'S LYNN
A47
PETERBOROUGH
A1
A14
A11
A428
CAMBRIDGE
A421
M11
A1
LUTON
M11
BRAINTREE
A120
A12
M1
CHELMSFORD
M25
LONDON
East of England route
SRN
MRN
Local roads


KENHAM
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NORWICH
A47
GREAT
YARMOUTH
A11
A47
LOWESTOFT
ETFORD
DS
A14
IPSWICH
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A120
COLCHESTER
CLACTON-
ON-SEA
ND-
A
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Initial route objectives

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

		DfT's strategic objectives for our network					
Ref.	**Route objective**	**Improving safety for all**	**Network performance**	**Improved environmental outcomes**	**Growing the economy**	**Managing and planning the SRN for the future**	**A technology-enabled network**
A	**Provision of a safer, more resilient and consistent network** to improve road user experience of safe and reliable journeys through provision of a more consistent network on the A47 and A120	✓	✓				
B	**Support improved connectivity across the route** to support local accessibility for residents near the route and other areas that ex-perience high volumes of collisions involving walkers and cyclists limiting connectivity with local communities	✓					
C	**Improve conditions and facilities for freight drivers travelling between the region's international gateways** to support economic growth associated with the region's major ports, airports and distribution centres	✓	✓		✓		
D	**Improve communications to better inform drivers** of incidents to reduce delay and uncertainty surrounding journey time reliability to drivers and improve end-to-end journey experience to support the regional and national economy		✓			✓	✓
E	**Support sustainable growth of the East Anglian Coast and International Gateways** to support the development of international gateways (including the ports of Felixstowe, Ipswich, Harwich, Great Yarmouth and Lowestoft and Stansted and Norwich airports), offshore energy and year round tourism		✓		✓	✓	
F	**Support sustainable growth and levelling up for deprived areas and coastal communities** to improve connectivity to key developments enabling residents to better connect to jobs and services and supports the continued economic growth of more deprived areas			✓	✓		
G	**Be a better neighbour by protecting environmentally sensitive sites and improving environmental conditions for residents impacted by the SRN** to minimise impacts at environmentally important locations and supports improved air quality and noise conditions			✓			
H	**Increase the resilience of the A47 and A12 to future adverse weather events** that supports reliable journeys for road users through reducing the impact of adverse weather events on route		✓	✓		✓	

Next steps

The 20 route strategy Initial overview reports will combine with other related evidence to inform the broader *SRN initial report* as part of the RIS process for the third road period (2025-2030). The *SRN initial report*[3] 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*[4].

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

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

Helping the nation to thrive

01 Introduction

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

Our network provides safe, high-speed connections that:

- Enable businesses to transport products and services
- Provide access to jobs and suppliers
- Facilitate trade and investment
- Support commercial and housing development that is integrated with local roads and other modes of transport

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

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

Purpose of route strategies

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

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

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

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

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

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

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

For clarity, this document does not:

- Identify committed schemes for delivery as part of future RIS periods. This will be part of the wider RIS setting process
- 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*[7] that sets out our vision and proposed priorities for the third road period (2025-2030) and beyond.

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

Purpose of the report

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

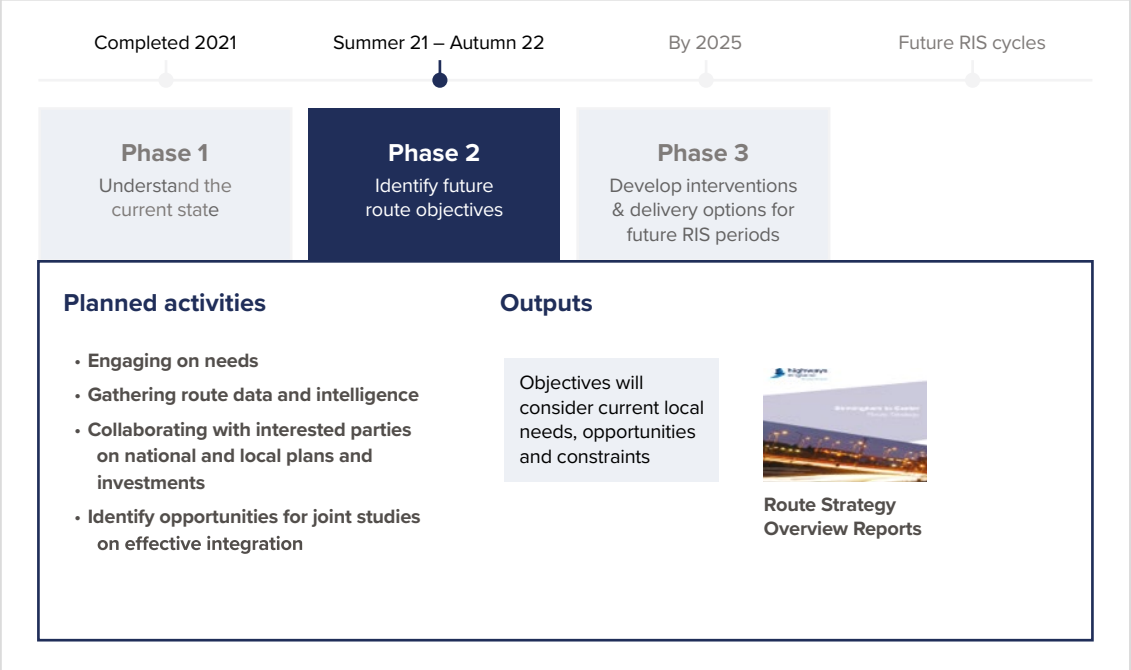


Figure 1: The route strategies delivery phases

7 National Highways, 2023, *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.

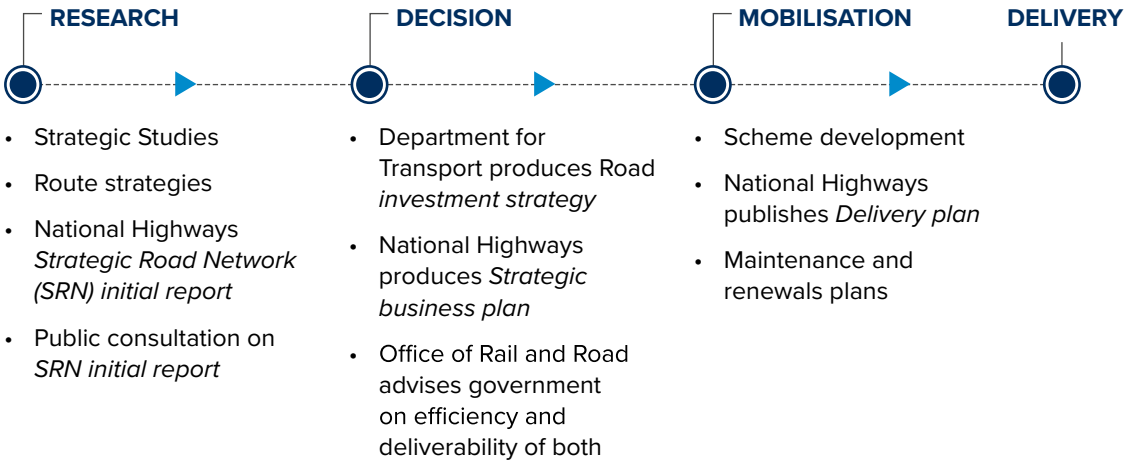


Figure 2: The RIS development cycle

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*[8].

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

Engagement with customers and neighbours

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

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

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

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

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

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

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

8 Highways England, 2021, *Vision for route strategies Planning for the future of our roads*, https://nationalhighways.co.uk/media/w0vhd3un/vision-for-route-strategies.pdf
9 Transport Focus, 2022, *Strategic Roads User Survey - 2021/22 Summary Report,* https://www.transportfocus.org.uk/publication/strategic-roads-user-survey-2021-22-summary-report/

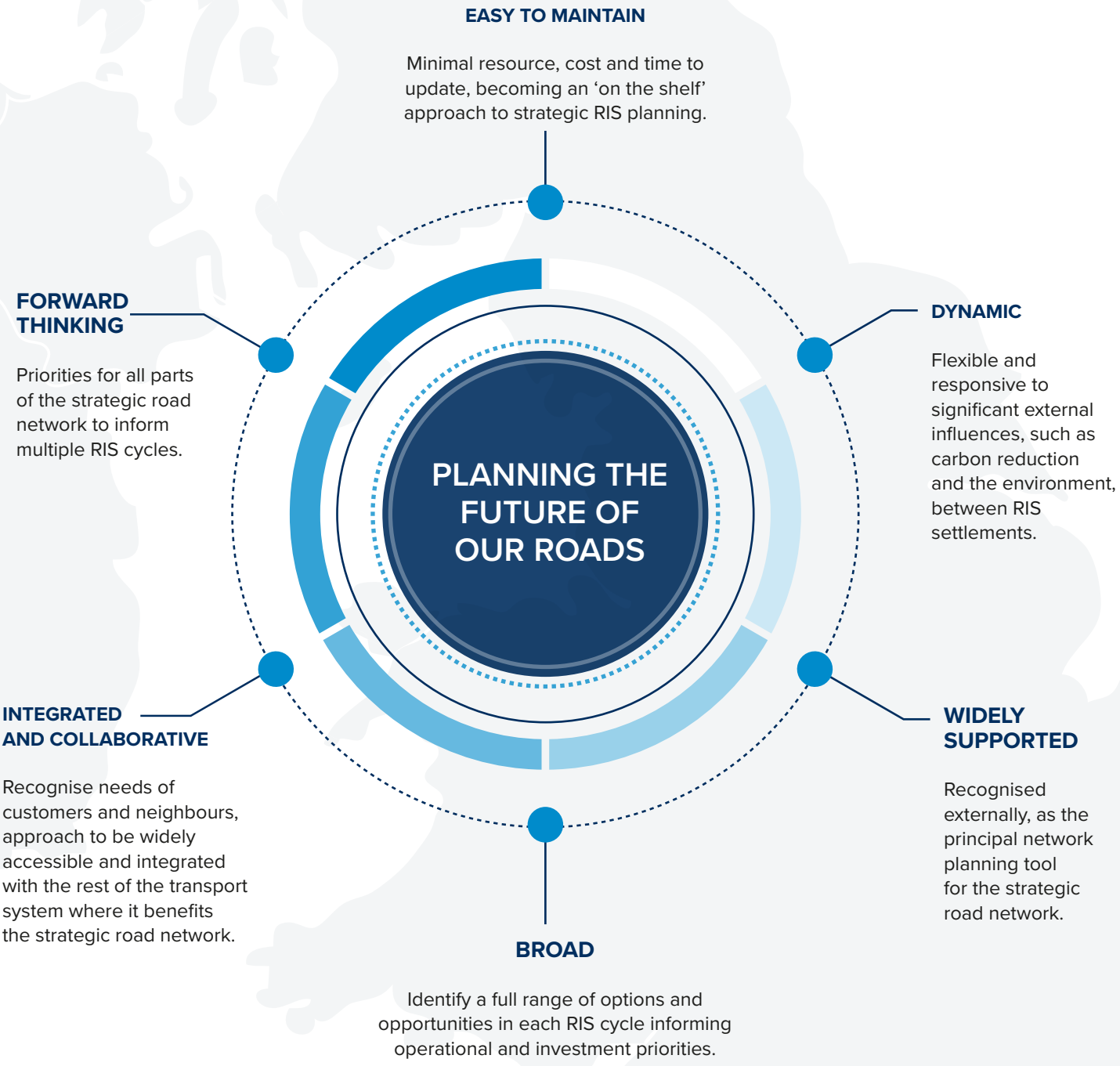


Figure 3: Our ambition for route strategies

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

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

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

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

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

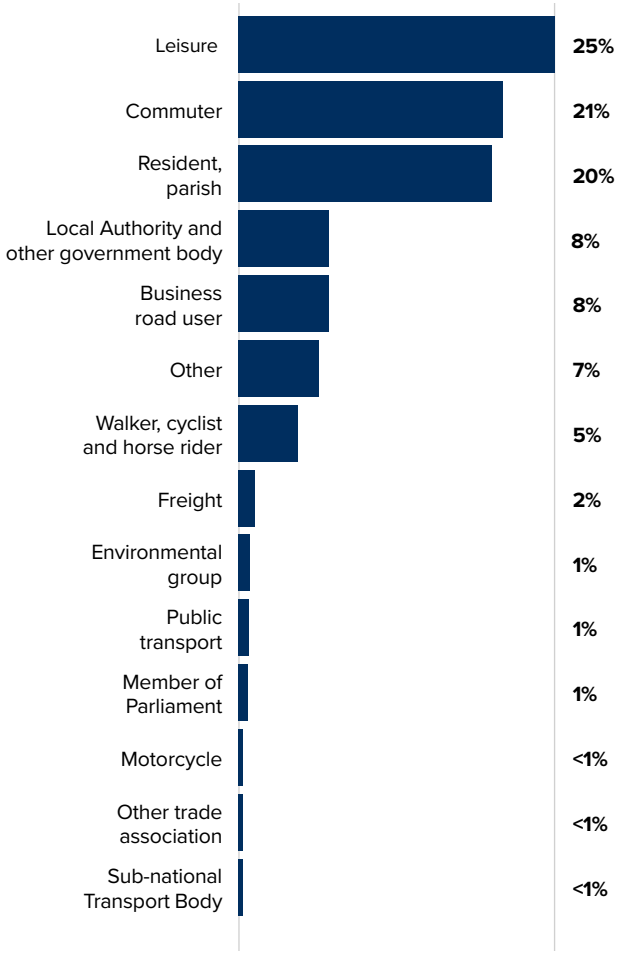


Figure 4: All responses to online tool by participant type

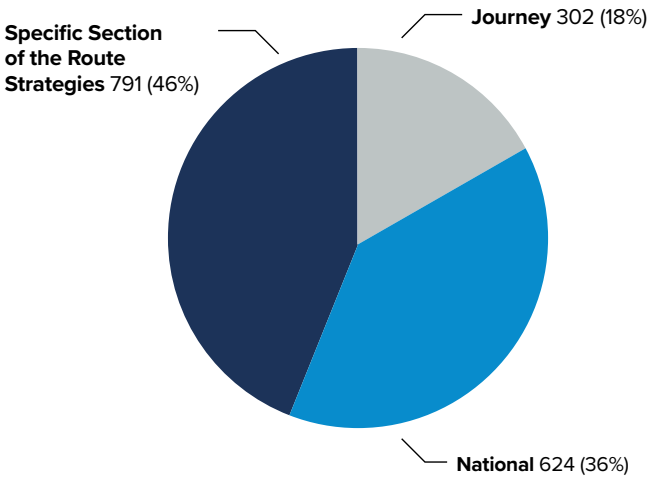


Figure 5: All response to online tool by type

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

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

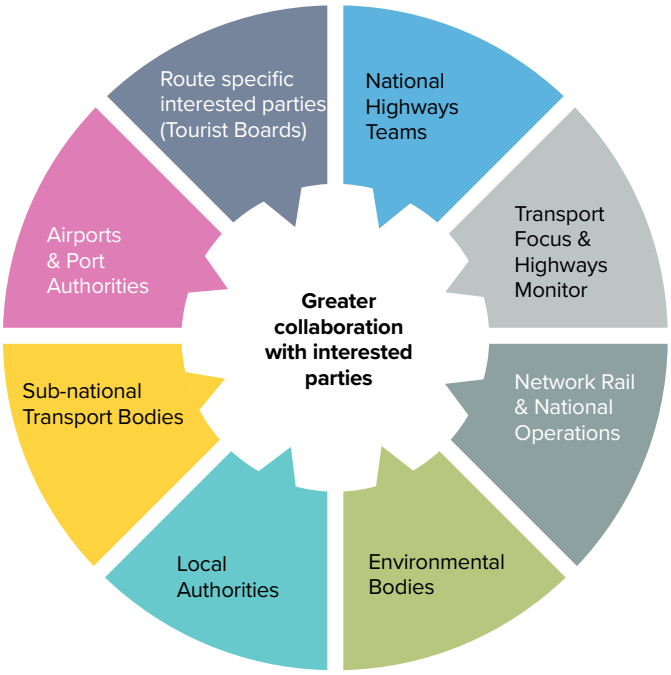


Figure 6: Interested parties involved in the route strategy engagement

Figure 7: Timeline of engagement with interested parties

DfT's strategic objectives for the strategic road network

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

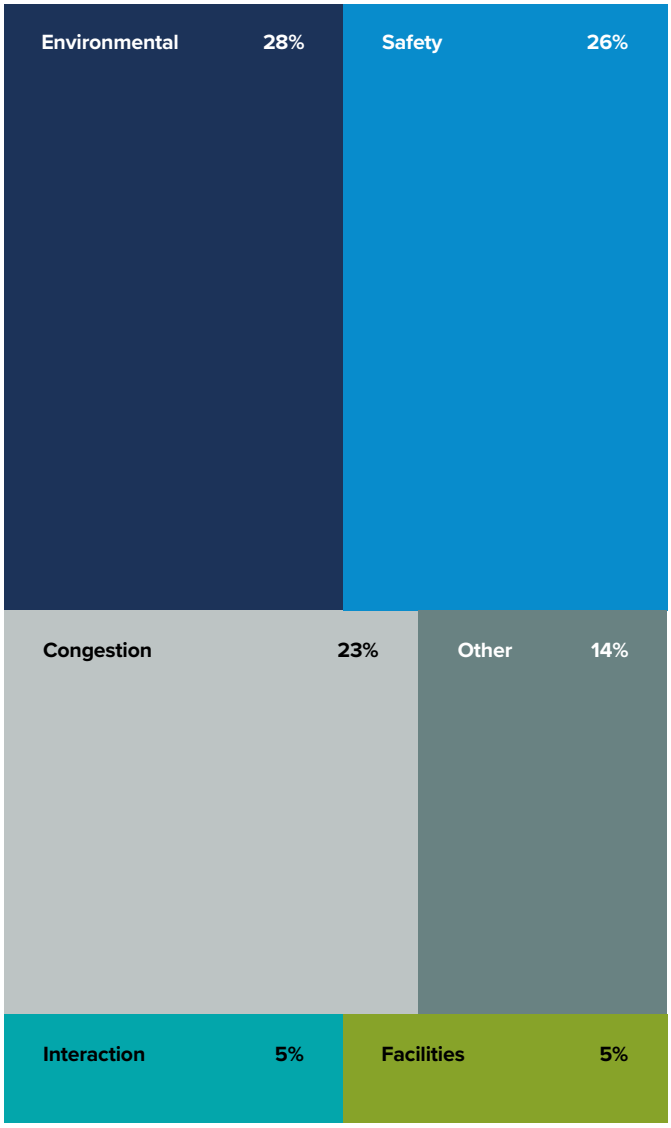


Figure 8: National themes from feedback through the online tool

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

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

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

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

i) Improving safety for all

- Our safety approach

ii) Network performance

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

iii) Improved environmental outcomes

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

DFT'S SIX STRATEGIC OBJECTIVES FOR THE STRATEGIC ROAD NETWORK

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

iv) Growing the economy

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

v) Managing and planning the SRN of the future

- Our approach to asset management

vi) A technology-enabled network

- Our ambition for digital roads

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

IMPROVING SAFETY FOR ALL

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

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

NETWORK PERFORMANCE

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

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

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

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

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

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

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

Our ambition is to improve lorry parking by:

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

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

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

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

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

Through understanding National Highways' role in influencing and improving travel, we will identify how to support customers utilise the right mode for the right journey. By working closely with operators, we will ensure our network supports bus and coach services.

And through the development of active travel networks we can help deliver health and wider social benefits.

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

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

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

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

IMPROVED ENVIRONMENTAL OUTCOMES

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

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

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

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

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

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

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

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

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

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

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

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

GROWING THE ECONOMY

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

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

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

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

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

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

MANAGING AND PLANNING THE SRN FOR THE FUTURE

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

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

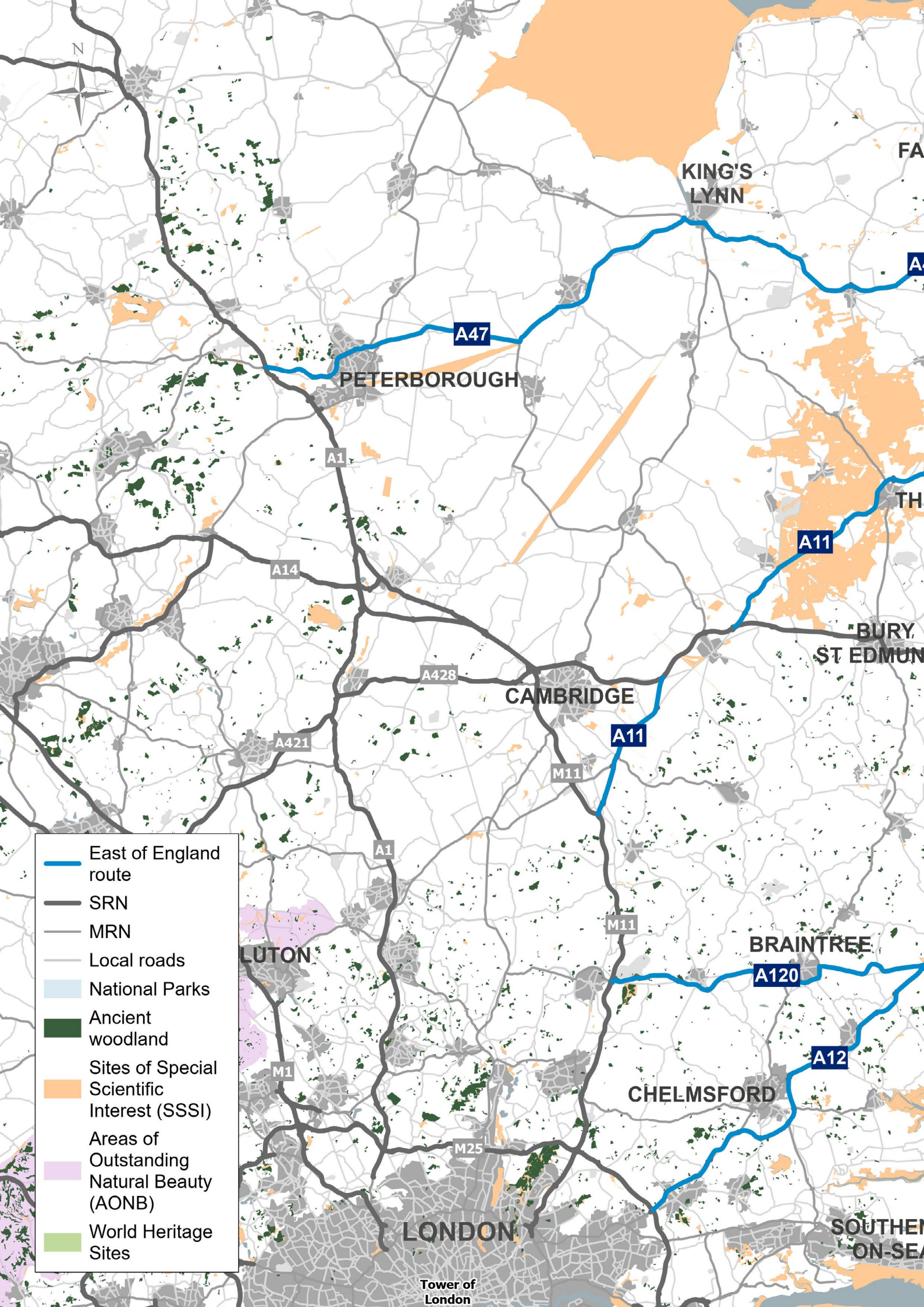
We know that good asset management is about understanding our customers and interested parties, identifying what they need and then using our assets effectively to deliver the right level of service. We are working to understand what satisfies our customers, and what we can do to influence this.

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

A TECHNOLOGY-ENABLED NETWORK

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

15 National Highways (2021) *Digital roads.* https://nationalhighways.co.uk/our-work/digital-data-and-technology/digital-roads/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BRAINTREE
A120
A12
M1
CHELMSFORD
M25
LONDON
Tower of London
East of England route
SRN
MRN
Local roads
National Parks
Ancient woodland
Sites of Special Scientific Interest (SSSI)
Areas of Outstanding Natural Beauty (AONB)
World Heritage Sites

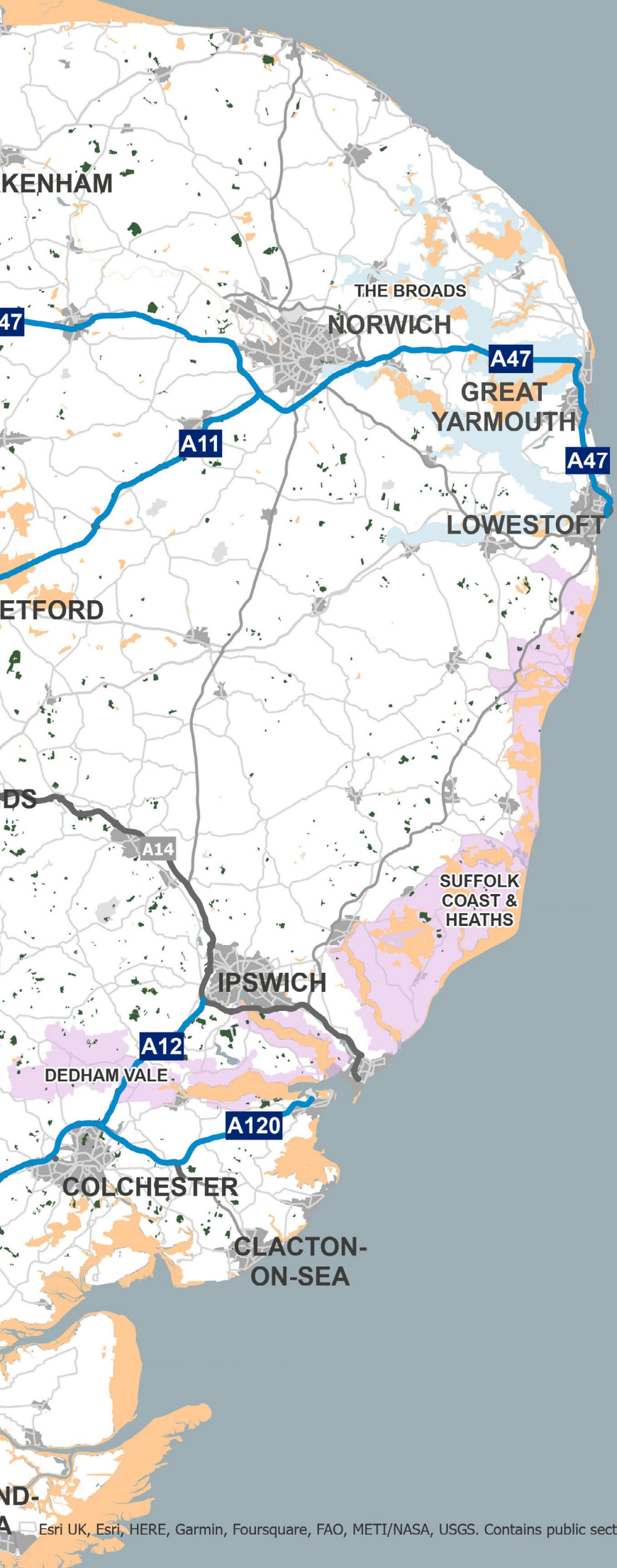

Figure 9: Environmental constraints

Our network connects the country

02 The route

The East of England Route provides strategic east-west movements across a large area in East Anglia. It consists of approximately 271 miles of the SRN on the A12, A120, A11 and A47 across Essex, Norfolk, Suffolk and Cambridgeshire. The route caters for local, regional and national travel between the region's cities, towns and villages, international freight and tourist traffic.

The route provides access to key global gateways with significance to the UK's national economy, including Stansted Airport and the ports of Felixstowe, Ipswich, Harwich, Great Yarmouth and Lowestoft, of which Felixstowe and Harwich forms Freeport East.

The route, as shown in Figure 10, consists of four A-roads in East Anglia:

- A12 - between Ipswich and the M25
- A120 - between Harwich and the M11
- A11 - between Norwich and the M11
- A47 - between Lowestoft and the A1

Given the wide geographic area, the route has a number of key functions, including:

- Access between the cities, towns and villages of East Anglia for tourism, leisure and the energy coasts
- Access to the East Anglian coast from the rest of the UK
- Access from East Anglia to strategic roads for north-south travel (A1, M11, London to Leeds Route Strategies)
- Access to international gateways at Stansted Airport and the major ports of Ipswich, Harwich, Felixstowe, Kings Lynn and Great Yarmouth
- Access to London and Kent (via the A12 and M25, London Orbital Route Strategies) from the East of England

These roads vary greatly in standard, with a mix of single and dual carriageways and varying junction arrangements. This is particularly true on the A47 where the road changes between single and dual carriageway 19 times between Peterborough and Great Yarmouth, but is also evident on the A12, A120 and A11.

The East of England is home to nearly 6.3 million people and supports over 3.2 million jobs. The route will play a key role in supporting growth particularly in key areas such as international trade, the 'energy coast' and tourism.

With four major ports located on the East Anglia coast, making up 10% of national freight by volume, and three international airports, freight plays a major role on the route – further enhanced by Freeport East. Some sections see heavy goods vehicles (HGVs) make up nearly 15% of total traffic, compared to the Strategic Road Network (SRN) average of 11%.

The east coast is key to the energy economy of the UK. Historically nuclear power plants in Sizewell and Bradwell have been vital to the UK supply, but also now with expanding offshore wind sites along the coast and towns operating as hubs for offshore development in wind, oil and gas. Access to these sites via the route will be key to the ongoing investment in energy infrastructure in the UK as a whole.

The SRN also helps to provide access to the coasts of Essex, Norfolk and Suffolk, key tourism hubs within the UK. These areas rely heavily on seasonal trade. As a result, traffic on the route is typically at its highest in summer (sometimes by as much as 25% compared to the quietest months).

The route passes through or is in close proximity to a number of sensitive and protected environmental assets, including flood plains of a number of rivers and low-lying regions, ecological assets in the Thetford Forest Special Areas of Conservation and Special Protection Areas, as well as protected landscapes in The Broads National Park and Dedham Vale Area of Outstanding Natural Beauty.

The route interfaces with three other Route Strategies routes; London to Leeds at the A1 and M11, London Orbital at the M25 and Felixstowe to Midlands at the A14, all of which play a vital role in movement to and from East Anglia.

This route strategy is based on the road network as of the start of the second road period (2020 - 2025). During RIS1 and RIS2 the following schemes were opened to traffic:

- A47 Acle Straight
- A47 Guyhirn

The following additional schemes are committed for the second road period:

- Chelmsford to A120
- A47 Blofield to North Burlingham
- A47 Great Yarmouth Junctions
- A47 North Tuddenham to Easton
- M25 Junction 28
- A47 Thickthorn Junction
- A47 Wansford

We recognise that some of the journeys on this route are part of longer journeys and therefore need to be considered in conjunction with strategies on other routes.


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A11
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CAMBRIDGE
A421
M11
A1
LUTON
M11
BRAINTREE
A120
A12
M1
CHELMSFORD
M25
LONDON
East of England route
SRN
MRN
Local roads

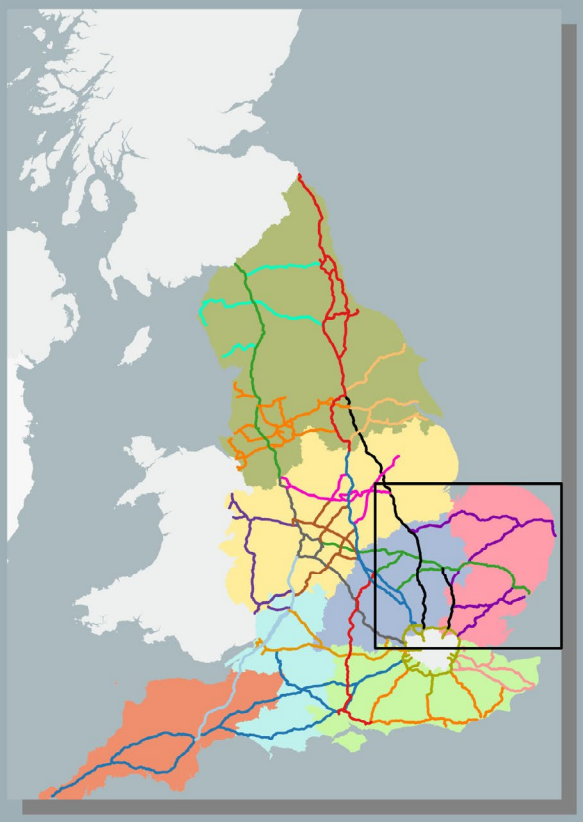


Figure 10: The route

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 East of England region

Early engagement with the Department for Transport (DfT), Office of Rail and Road, Transport Focus, Midlands Connect and Western Gateway (Sub-national Transport Bodies) and Network Rail shaped our engagement with customers and neighbours in the East of England 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 East of England route in late 2021. Attendees included local authorities, airports and port authorities, transport operators, and other key route-based interested parties, such as major businesses.

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

Route strategies online feedback form: Local interested parties, road users and communities were invited to give their feedback on specific locations on motorways and A-roads and routes, and general comments on the road network, through the route strategies online feedback form. For the East of England 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*[16] 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 East of England route to inform our route objectives. The themes have been aligned with the DfT's six strategic objectives:

i) Views on: Improving safety for all

- The large number of at grade junctions, where conflicting traffic flows meet in the same place, on dual carriageway sections of the route lead to delays and safety issues
- Low safety ratings on single carriageway sections

ii) Views on: Network performance

- Inconsistent route standards with single carriageway sections causing major capacity constraints
- Congestion on the A47 acts as a 'barrier' to travel to the tourist attractions on the coast

iii) Views on: Improved environmental outcomes

- Ensure the network responds to net zero carbon and environmental ambitions
- Severance of communities and routes for vulnerable users

iv) Views on: Growing the economy

- The need to improve connections to the international gateways in the region (ports and airports)
- Improved connectivity for rural communities to support their needs
- Address seasonal visitor economy traffic to complement economic growth
- Improved connectivity as a key east-west route for freight

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

- Improved resilience of the network around safety, congestion and flooding, allowing consistent travel year round
- Greater integration with public transport, walking and cycling to support more sustainable travel modes
- Greater preparation for future proofing of network as a result of changes in travel behaviour
- Greater provision needed for HGV parking and freight facilities

vi) Views on: Technology-enabled network

- Working with local Highway Authorities to improve communication regarding information signage provision, real time information and network management
- Consideration of future technology requirements, including electric vehicle charging

16 Transport Focus, 2022, *Transport Focus Website,* https://www.transportfocus.org.uk/insight/strategic-roads-user-survey/

Engagement quotes from customers and neighbours

Figure 11: Quotes from customers and neighbours

Engagement quotes from customers and neighbours

Figure 11: Quotes from customers and neighbours

Route satisfaction

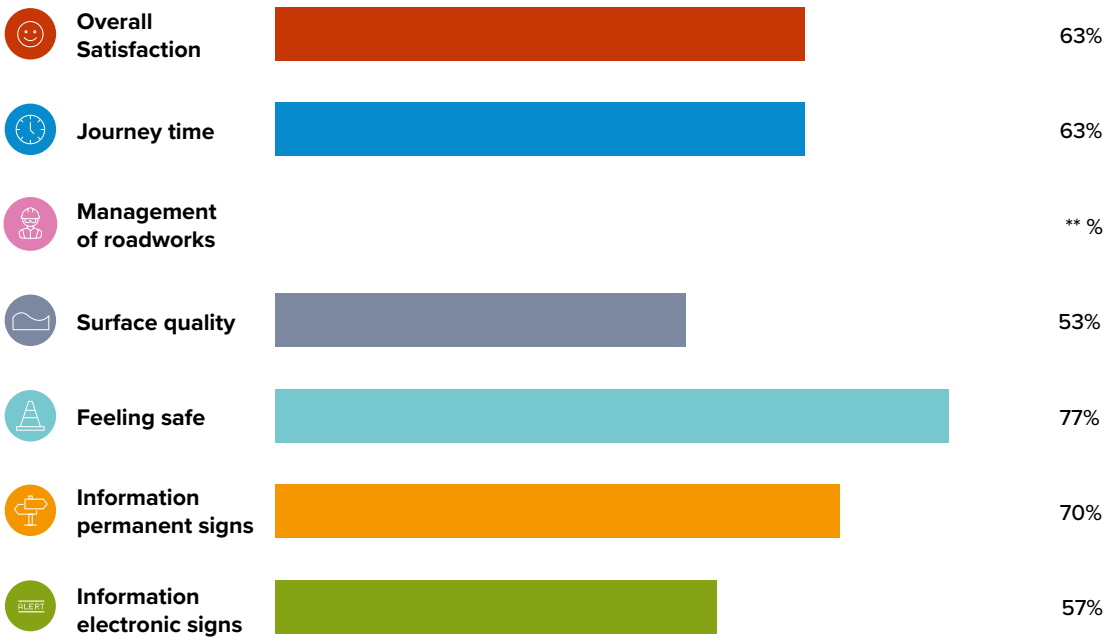
Satisfaction scores have been obtained from Transport Focus through their Strategic Roads User Satisfaction Survey from the last 12 months to May 2022. It covers the roads in this route but it should be noted that the satisfaction scores may not fully align with the extent of the roads in the route.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

Additional comments and data from the Transport Focus survey of drivers on the SRN can be found on the Transport Focus website data hub[17].

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

Strategic roads user survey satisfaction scores

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



National Highways Region East, National Highways Area 6 and 8
Individual road A11, A12, A47, A120
Last 12 months*** May 2022 (last 12 months)

*** Before March 2019 and from April 2021 to February 2022 this is year-to-date, not past 12 months

Figure 12: Satisfaction scores from headline results

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

Working with our partners

04 Network collaboration

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

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

An integrated transport network

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

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

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

- England's Economic Heartland
- Transport East

Whilst Transport for London (TfL) is not an STB, they have been included as the transport planning authority for London.

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*[18], and within our *Strategic business plan*[19] and *Delivery plan*[20]. 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 document sets out a shared commitment for a continued open, constructive and collaborative relationship.

18 Department for Transport, *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
19 National Highways, *Strategic Business Plan: 2020 – 2025*, https://nationalhighways.co.uk/strategic-business-plan/
20 National Highways, *Delivery Plan: 2020 – 2025*, https://nationalhighways.co.uk/delivery-plan/

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.

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

England's Economic Heartland (EEH)

England's Economic Heartland published its Regional Transport Strategy, *Connecting People, Tansforming Journeys, in 2021*[21]. The strategy outlines the framework for enabling green economic growth, in a way that also creates a net zero transport network. The strategy further details the importance of working with partners, local Growth Boards and national initiatives, including the Oxford to Cambridge Arc.

The four key priorities of England's Economic Heartland are:

- Achieving net-zero carbon emissions from transport no later than 2050, with an ambition to reach this by 2040
- Improving quality of life and wellbeing through a safe and inclusive transport system accessible to all which emphasises sustainable and active travel
- Supporting the regional economy by connecting people and businesses to markets and opportunities
- Ensuring the Heartland works for the UK by enabling the efficient movement of people and goods through the region and to/from international gateways, in a way which lessens its environmental impact

These strategic priorities set out how the region can reduce reliance on private car usage by creating better connectivity within communities. It also details how the Heartland will work to harness leading expertise in clean, green and smart technologies, allowing the region to have a competitive edge in global markets.

While the transport strategy is ambitious, it aims to deliver the vision of England's Economic Heartland by supporting sustainable growth and improving the quality of life through a decarbonised transport network. This will encourage innovation and create further opportunities for local residents and the local economy, while benefitting the national and international economy.

Transport East

Transport East published its Draft transport strategy in November 2021. It aims to overcome some of the transport challenges experienced by delivering a fit for purpose, high quality inclusive and sustainable transport network that will be able to accommodate future growth in the area. Transport East's vision is "a thriving economy for the East, with fast, safe, reliable and resilient transport infrastructure driving forward a future of inclusive and sustainable growth for decades to come".

Transport East has four strategic priorities to deliver this vision:

- **Decarbonisation to net zero -** Working to achieve net zero carbon emissions from transport, building on the region's status as the UK's premier renewable energy region

21 Transport East, Draft transport strategy, November 2021, https://www.transporteast.org.uk/wp-content/uploads/A-30-year-transport-strategy-for-the-East-UPDATED.pdf

- **Connecting growing towns and cities -** Providing enhanced links between our fastest growing places and business clusters, improving access for people to jobs, suppliers, services, and learning; enabling the area to function as a coherent economy and improving productivity
- **Energising coastal and rural communities -** A reinvented sustainable coast for the 21st century, which powers the UK through energy generation. Supporting the region's productive rural communities and attracting visitors all year round
- **Unlocking international gateways -** Better connected ports and airports to help UK businesses thrive, boosting the nation's economy through better access to international markets and facilitating foreign investment

Six core corridors have been identified that are the road and rail links between the region and the rest of the UK.

Transport for London

Transport for London's (TfL) role is to implement the Mayor's transport strategy and manage those services across the Capital for which the Mayor is responsible. The Strategy notes that transport has the potential to shape London, from the streets Londoners live, work and spend time on, to the Tube, rail and bus services they use every day.

By using the Healthy Streets Approach to prioritise human health and experience in planning the city, the Mayor wants to change London's transport mix so the city works better for everyone. Three key themes are at the heart of the strategy:

1. **Healthy Streets and healthy people:** creating streets and street networks that encourage walking, cycling and public transport use will reduce car dependency and the health problems it creates
2. **A good public transport experience:** Public transport is the most efficient way for people to travel over distances that are too long to walk or cycle, and a shift from private car to public transport could dramatically reduce the number of vehicles on London's streets
3. **New homes and jobs:** More people than ever want to live and work in London. Planning the city around walking, cycling and public transport use will unlock growth in new areas and ensure that London grows in a way that benefits everyone

Interaction with the major road network and local roads

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

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

It is therefore important that decisions about the SRN, MRN and other local roads are made in a joined-up way to ensure that the networks are consistent, coherent and complementary. We recognise that the key to the success of the Road Investment Strategy is ensuring the impacts of any interventions are appropriately considered across all networks as well as at their junctions. Both networks play a key role in customers' journeys, and they expect a seamless transition between the two. We are

continually seeking to identify collaborative solutions that meet our obligations under the National Highways Licence to improve network performance and provide integration benefits. In developing the route strategies, we aim to ensure the planning for the SRN, MRN and other local roads is complementary.

The MRN acts as a spine for the SRN. In the south west of the East of England area, the MRN provides connections from the A12 at Chelmsford to the A120 to Braintree, via the A131, as well as to Southend-On-Sea via the A130. To the North of Braintree, the A131 merges with the A134 which then also provides connections further north, including to Bury St Edmonds, Thetford and King's Lynn. To the east, the MRN provides connections from the A12 at Ipswich to Norwich via the A140, and to Lowestoft via the A12. To the north, the MRN provides connections between Norwich and Cromer via the A140, and between King's Lynn and Cambridge via the A10. At Peterborough, the A47 extends to the west and provides connections to areas including Leicester. To the south of Cambridge, the A11 joins the A505, which links to the north-south connections of the A1.

As part of the Lower Thames Crossing project, National Highways is proposing a Wider Network Impacts Management and Monitoring Plan which would provide data to local highway authorities. That data will enable further collaboration, and allow local highway authorities to prepare applications to fund improvements from existing central government streams.

Freight and logistics

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

The *National survey of lorry parking published* by the Department of Transport[22] in 2017 indicates that East of England lorry parking facilities are over capacity and the situation is "critical". This status means it is difficult for drivers to find parking spaces. Even though space may be available, the size of vehicles and the way they are positioned means a lorry park can be considered to be 'full' in a practical sense at anything above 85% capacity.

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.

22 Department for Transport, 2018, *National Lorry Park Survey, Department for Transport,* 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.

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

The Network Rail strategy[23] presents a vision of "putting passengers and freight users first". This Strategy recognises that Network Rail can improve the daily lives of people across the country by striving to constantly improve the quality of its service across the whole railway system. Network Rail delivers its vision through a regional structure committed to responding to the needs of local customers and interested parties, more quickly than if such decisions were to be made at a national level.

The rail network provides important access to tourist sites along the East coast, including Kings Lynn, Cromer, Great Yarmouth, Lowestoft, Clacton- on-Sea, Norwich, Ipswich, Colchester, Peterborough, and Southend-on-Sea, which are all served by Greater Anglia. The rail network also provides access to the region's international gateways, with stations at Stansted Airport, Harwich, Felixstowe and Southend Airport that provide access to ports and airports. We understand the key role the SRN plays in providing access to and from these services. The rail network provides key links between a number of the key economic centres and gateways on the route. However, not all centres are directly connected. Journeys that are easily made by car on the SRN, for example Chelmsford to Stansted Airport or Colchester to Cambridge, are not easily made via rail. As such, integration between the SRN and rail network is very important to ensure overall connectivity and a modal shift.

We also work with the operators and promoters of urban rapid transit systems, where there are opportunities for better integration. This includes the creation of park and ride sites, with the aim of removing traffic from the road network. There are currently four park and ride sites serving Norwich, two each at Chelmsford and Colchester and one serving Peterborough.

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

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[24] published in late 2021. The report recommends the creation of UKNET, a strategic transport network spanning the entire United Kingdom. UKNET would be based on a series of principal transport corridors between key urban and economic centres, including international gateways. The findings of this report have been considered in our route strategies, particularly for our cross-border routes and roads connecting to important ports.

The route also provides key access to north-south travel within the UK via the M11, A1 (and onward to the M1), as well as the A14 link to Freeport East. The route plays a key role in connecting East Anglia to the rest of the UK. These are important routes for both passengers and freight, and the SRN is considered within this broader context.

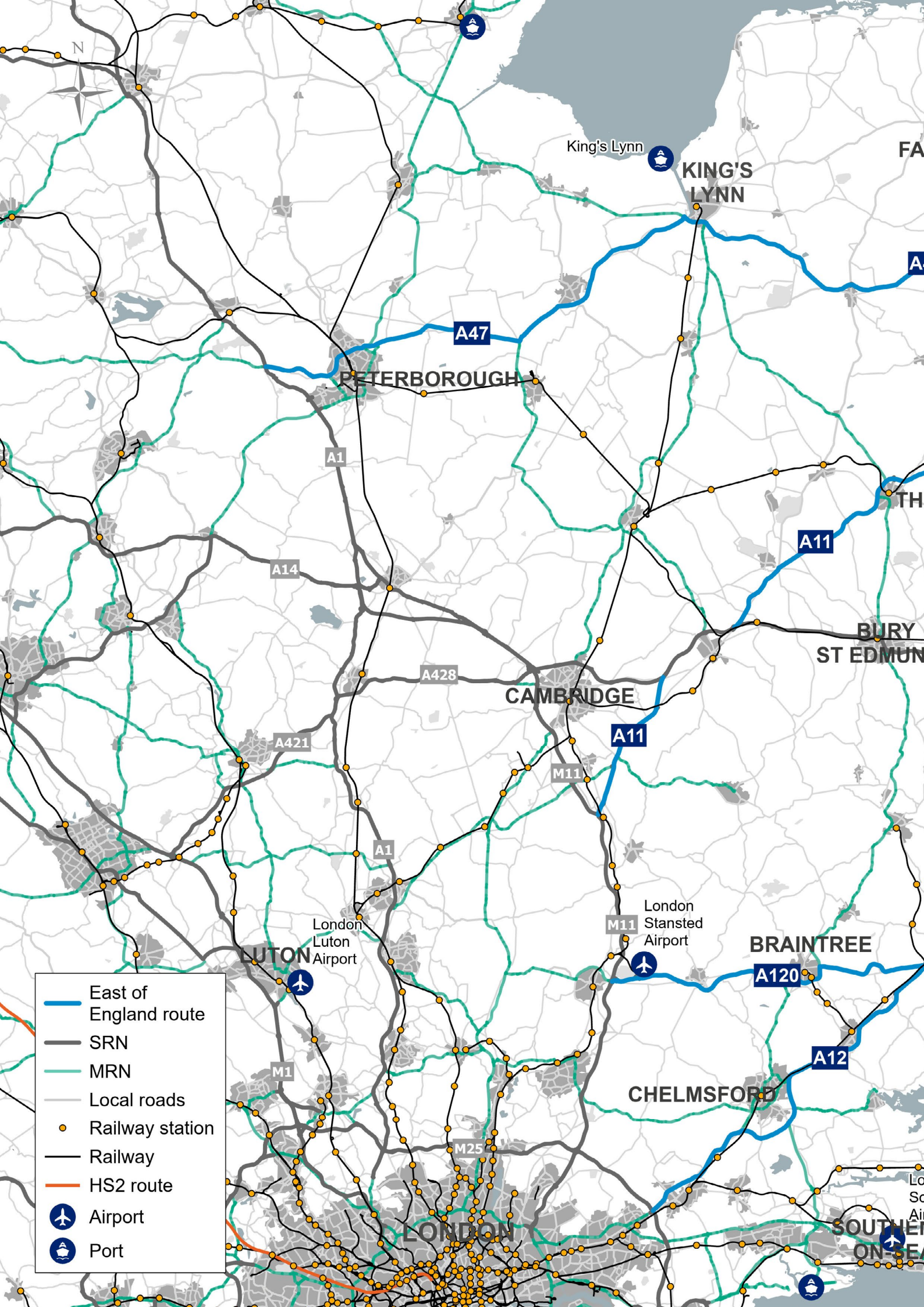
International connectivity

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.

The East of England route, via the A12, A120 and A47, provides access to some of the biggest ports in England, with Harwich, Great Yarmouth, Ipswich and Felixstowe accounting for nearly 10% of the UK's total freight shipping by tonnage[25].

As mentioned above, the route plays a key role in connecting ports on the East Anglian coast to the rest of the UK, helping connect us with the rest of the world. The route also provides access to the international airports of Stansted (via the A120), Southend (via the A12), and Norwich (via the A47), which are the 4th, 18th and 26th busiest airports in the UK, respectively, by passenger volume[26], allowing onward travel and linking the UK to the rest of the world. Stansted Airport alone carries 10% of the nation's air passengers[27].

24 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
25 Port and domestic waterborne freight statistics, https://www.gov.uk/government/statistical-data-sets/port-and-domestic-waterborne-freight-statistics-port
26 UK Airport Data, https://www.caa.co.uk/data-and-analysis/uk-aviation-market/airports/uk-airport-data/
27 Transport East, https://www.transporteast.org.uk/wp-content/uploads/TransportEastStrategy.v6.pdf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CHELMSFORD
M25
LONDON
East of England route
SRN
MRN
Local roads
Railway station
Railway
HS2 route
Airport
Port

Figure 13: Network integration

Challenges and issues on the route

05 Challenges and issues

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

1. Improving safety for all

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

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

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

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

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

A combination of star ratings and historic data can help us 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.

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

- Where the route passes through, or near to, communities, particularly the A47 and A120
- Walkers, cyclists and horse riders, particularly on the A47 through Lowestoft and Great Yarmouth, the A47 near Wisbech and the A120 near Braintree

The Road Safety Foundation collision risk and density data is a calculation of aggregated STATS19 data on Road Safety Foundation routes (of which there are 284 on the SRN) as well as the volume of traffic each road is carrying.

The Road Safety Foundation data we received also included motorcycle collision density and percentage of collisions involving walkers, cyclists and horse riders (WCH). The latest available data shows there are a number of collisions involving walkers, cyclists and horse riders. There was a higher number of fatal and serious motorcycle collisions per mile road length along the A12 between Colchester and the M25, as well as along the A47 between Great Yarmouth and Norwich, when compared to the rest of the UK. The route passes through or alongside a large number of towns and has numerous foot and cycle path crossings (largely unsignalised).

This has led to a number of collisions involving walkers, cyclists and horse riders, particularly at:

- A47 through Lowestoft and Great Yarmouth
- A47 near Wisbech
- A120 near Braintree

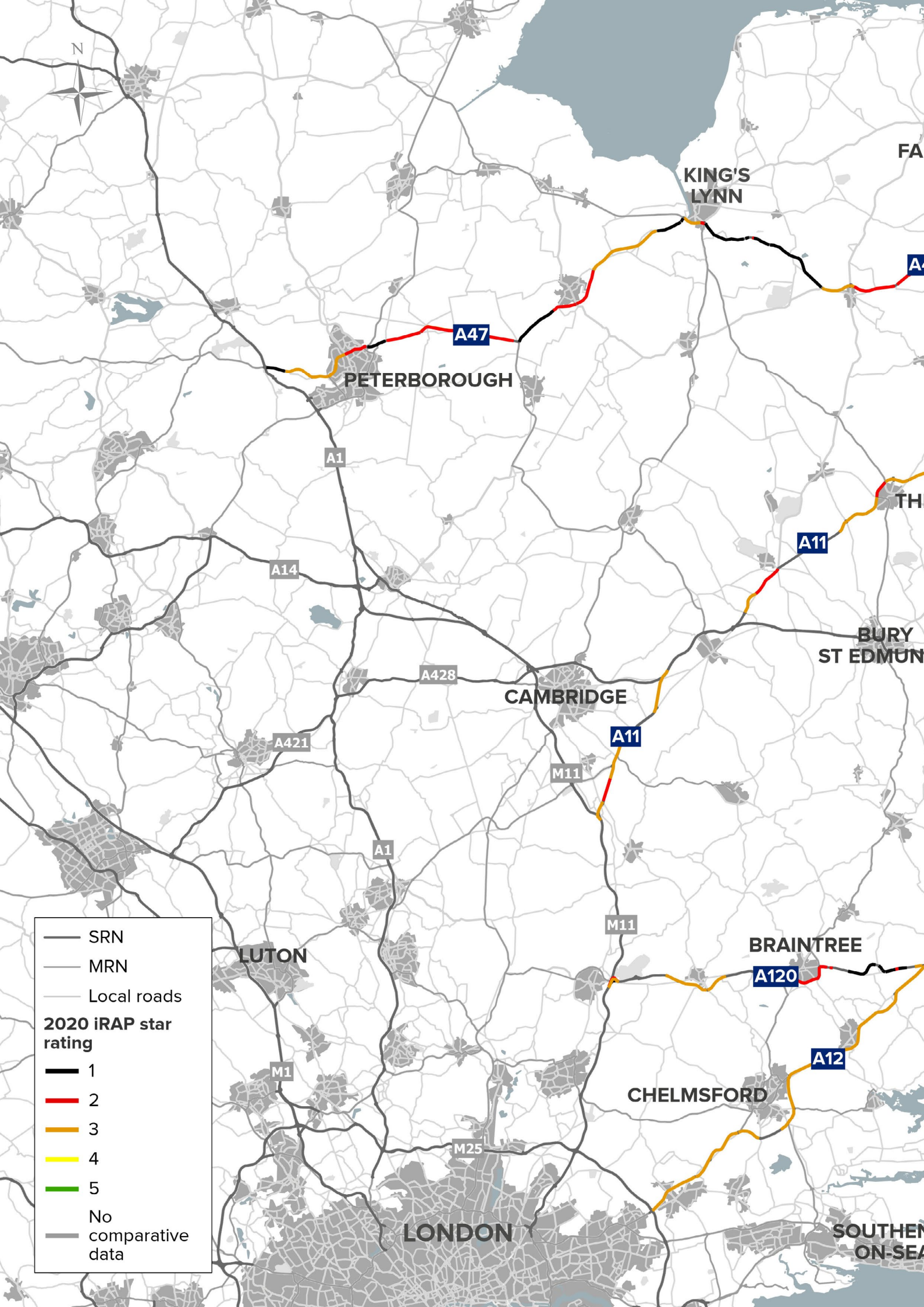
Improving safety and minimising collision rates is a key consideration for all our routes

There are a number of safety issues at some junctions, including right turns across traffic, unsignalised roundabouts, and staggered crossroads with junctions along the route.

The Fiveways Roundabout at Mildenhall on the A11 and Marks Tay on the A12 / A120 are known to experience high numbers of collisions by local residents and regular users.

Key challenges

- Higher collision rates and accidents resulting in people being killed or seriously injured, with International Road Assessment Programme (iRAP) Star Ratings of 2 or lower particularly where the route passes through, or near to, communities, particularly the A47 and A120
- Number of collisions being experienced by walkers, cyclists and horse riders, particularly on the A47 through Lowestoft and Great Yarmouth, the A47 near Wisbech and the A120 near Braintree
- There are a number of safety issues at varying junctions, including right turns across traffic, unsignalised roundabouts, and staggered cross roads on the route, such as the Fiveways Roundabout at Mildenhall on the A11 and Marks Tay on the A12 / A120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2020 iRAP star rating
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2
3
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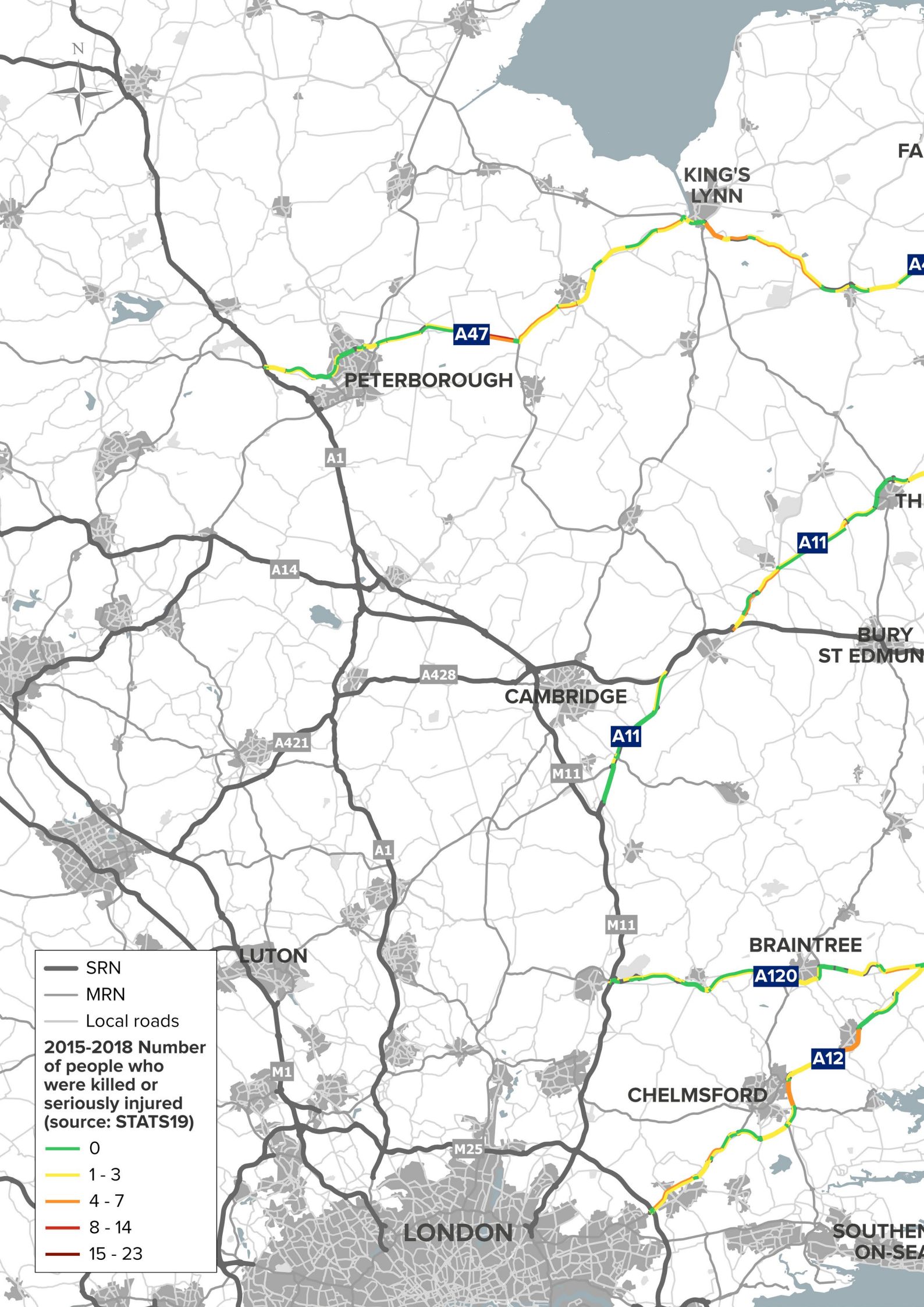
5
No comparative data

Figure 14: 2020 iRAP star rating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Local roads
2015-2018 Number of people who were killed or seriously injured (source: STATS19)
0
1 - 3
4 - 7
8 - 14
15 - 23

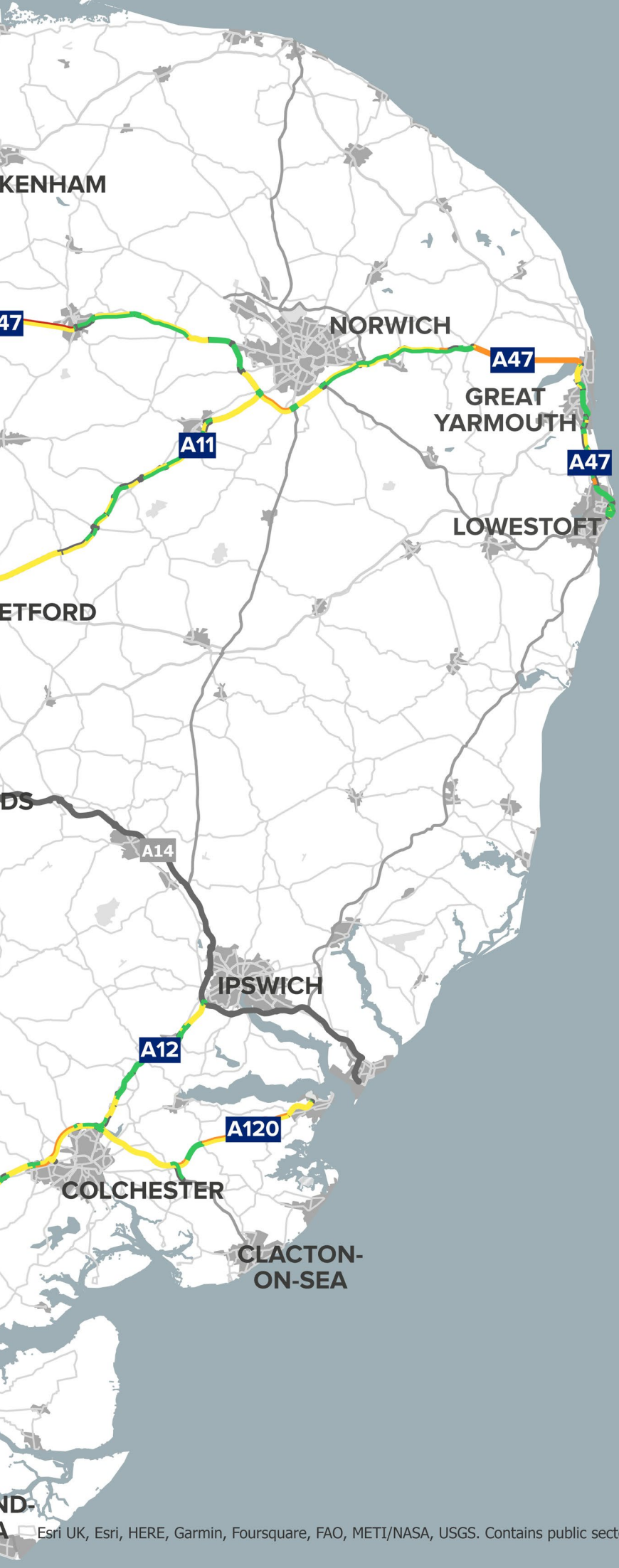


Figure 15: 2015-2018 Number of people who were killed or seriously injured (source: STATS19)

2. Network performance

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

Figure 16 shows the delay caused by congestion during the morning peak in 2019. The lengthiest delays experienced on the route are:

There are capacity constraints on the A47 and A120 where the road drops from single to dual carriageway with AM peak delays experienced on the A120 at Braintree and approaching Marks Tay and the A47 between Easton and Hockering.

Single carriageway sections of the route also experience delays at certain junctions, such as at Wisbech on the A47 and at Braintree on the A120. Given the heavy freight and agricultural usage on these roads, interest parties raised that slow moving vehicles can lead to lines of traffic and dangerous overtaking manoeuvres.

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

Delays are expected to increase by 2031 on the A12 at Copdock Interchange, Colchester and Chelmsford, the A120 near Braintree, the A11 around Thetford, and on the A47 between Norwich and Great Yarmouth. These increases in delays are caused by increasing future demand and could hinder the growth of the international the wider regional economy.

Average 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 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 mile. It is a concern for most drivers, but particularly affects just-in-time freight traffic and other strategic journeys.

Reliability is the difference between the typical travel time, allowing for recurring delays, and the amount that can vary due to unplanned incidents. Like delay, it is measured in seconds pvpm.

It is a concern for most drivers, but particularly affects just-in-time freight traffic and other strategic journeys. This delay is concentrated at certain areas along the route, including where high average delay is observed. Locations with notable issues include the A12 approaching Copdock Interchange, A120 between Braintree and Marks Tey, on the A12 around Chelmsford, and A47 between Norwich and Lowestoft.

These delay patterns can also be seasonal, with the coasts of Essex, Norfolk and Suffolk contributing to seasonal delay along the East Anglia coast. The limited technology provision makes it more difficult to manage disruptive incidents and communicate information to drivers. Route uncertainty and operation can be particularly difficult during times of increased tourism, such as bank holidays and school holidays. These difficulties also occur all year round and significantly impact on non-frequent users of the route (those accessing the region's international gateways for example), whereas local users may know of suitable alternative local routes. However, this can create further problems on unsuitable local roads. Interested parties have said that there are a lack of suitable alternatives or diversion routes, meaning that incidents or planned roadworks can create disruption on the network.

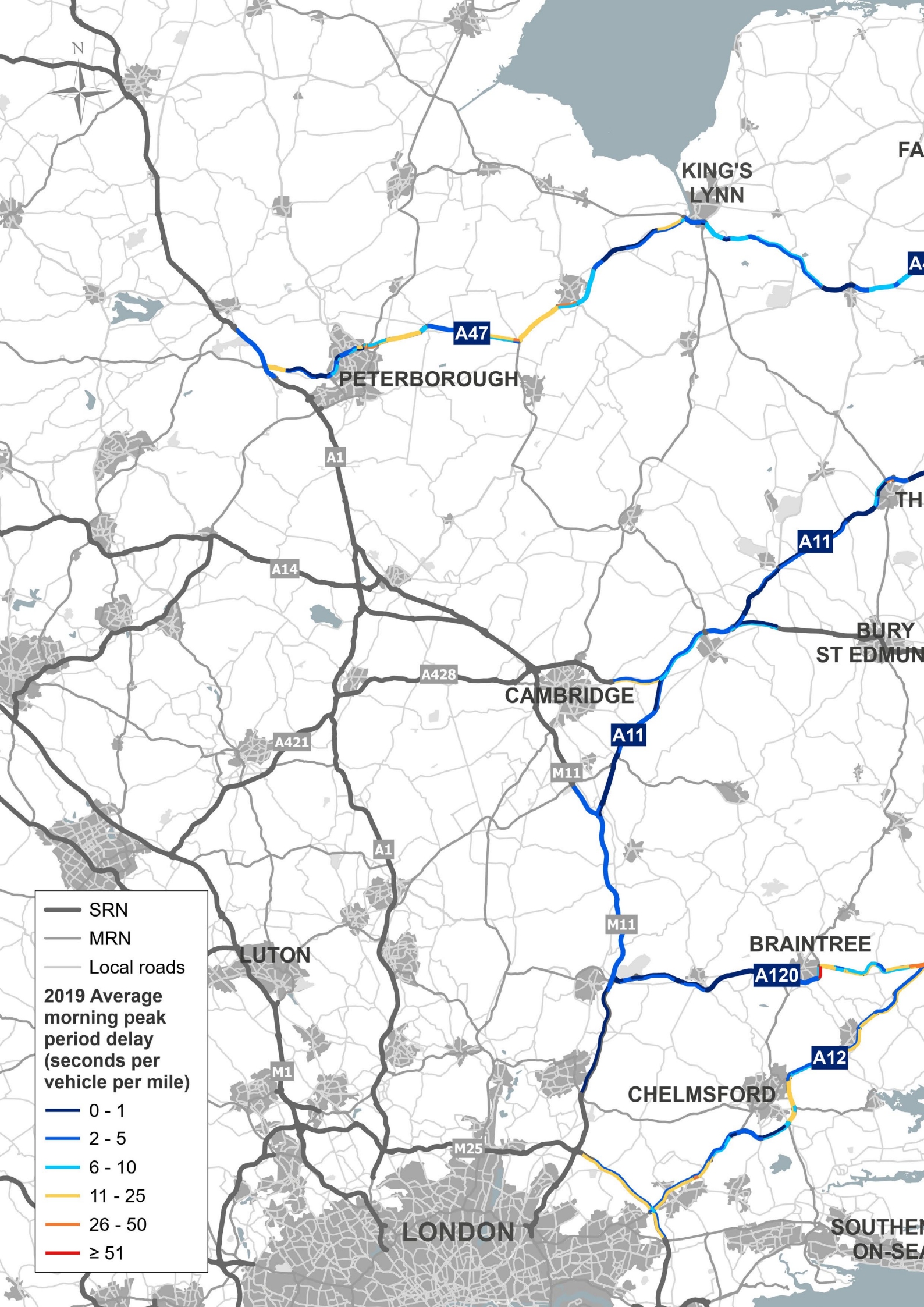
The delivery of Lower Thames Crossing, which connects Essex to the South Coast and Kent Corridors (see Kent Corridors to M25 Route Strategies), may affect traffic flows on the A12.

National Highways has a suite of five regional traffic models (RTMs) covering England's SRN. The models allow us to identify future performance and delay on the network, assisting with the development of the route strategies.

The RTM models use projected growth, expected trends and changes to the network (including National Highways RIS2 schemes) to forecast the performance of the network in 2031.

Key challenges

- There are localised delays across East Anglia, with congestion on the A12, A120, A11 and A47.
- Single carriageway sections of the route, such as at Wisbech on the A47 and at Braintree on the A120, will experience increases in delay by 2031
- Lack of technology to inform and redirect drivers following incidents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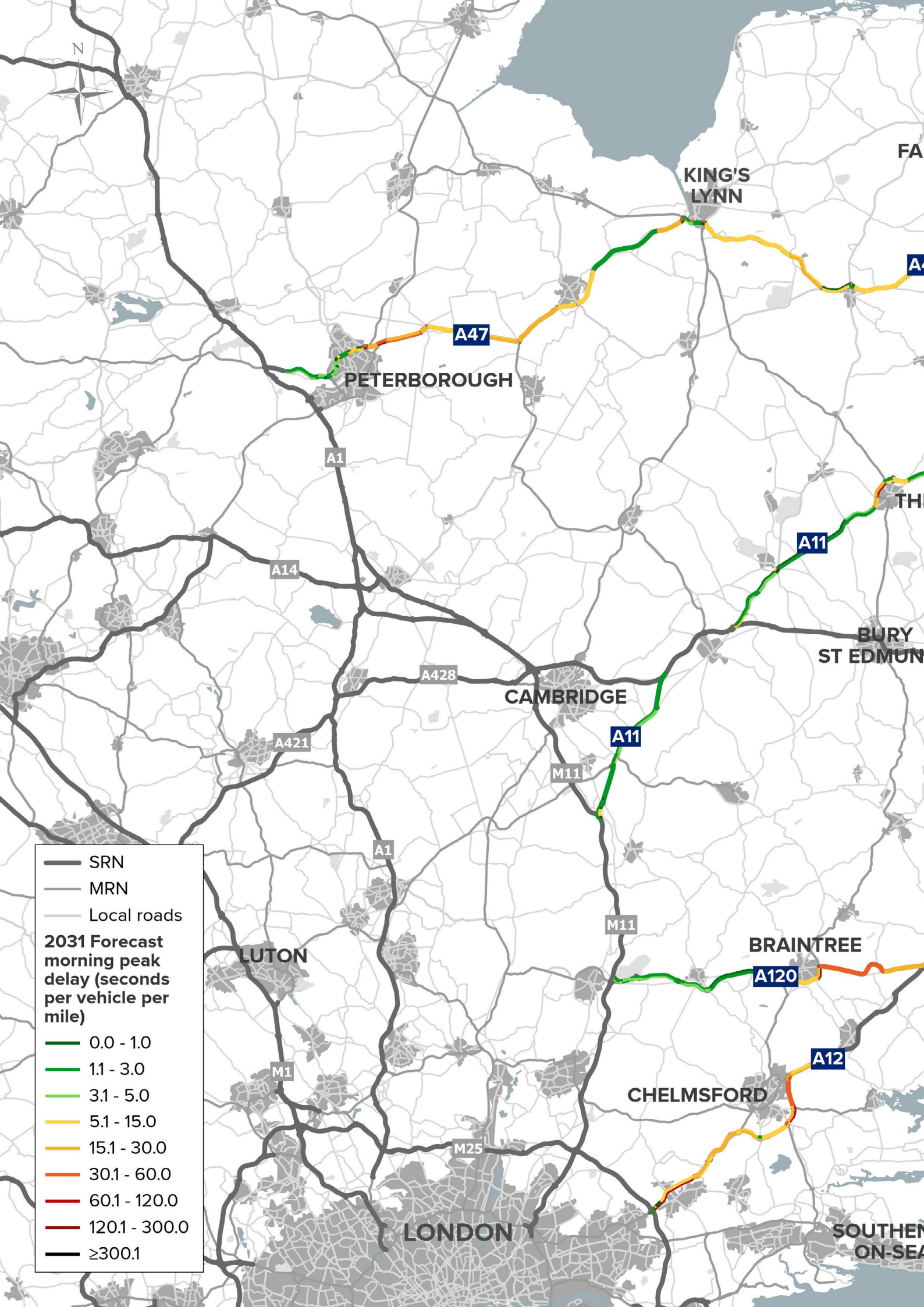
Local roads
2019 Average morning peak period delay (seconds per vehicle per mile)
0 - 1
2 - 5
6 - 10
11 - 25
26 - 50
≥ 51

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

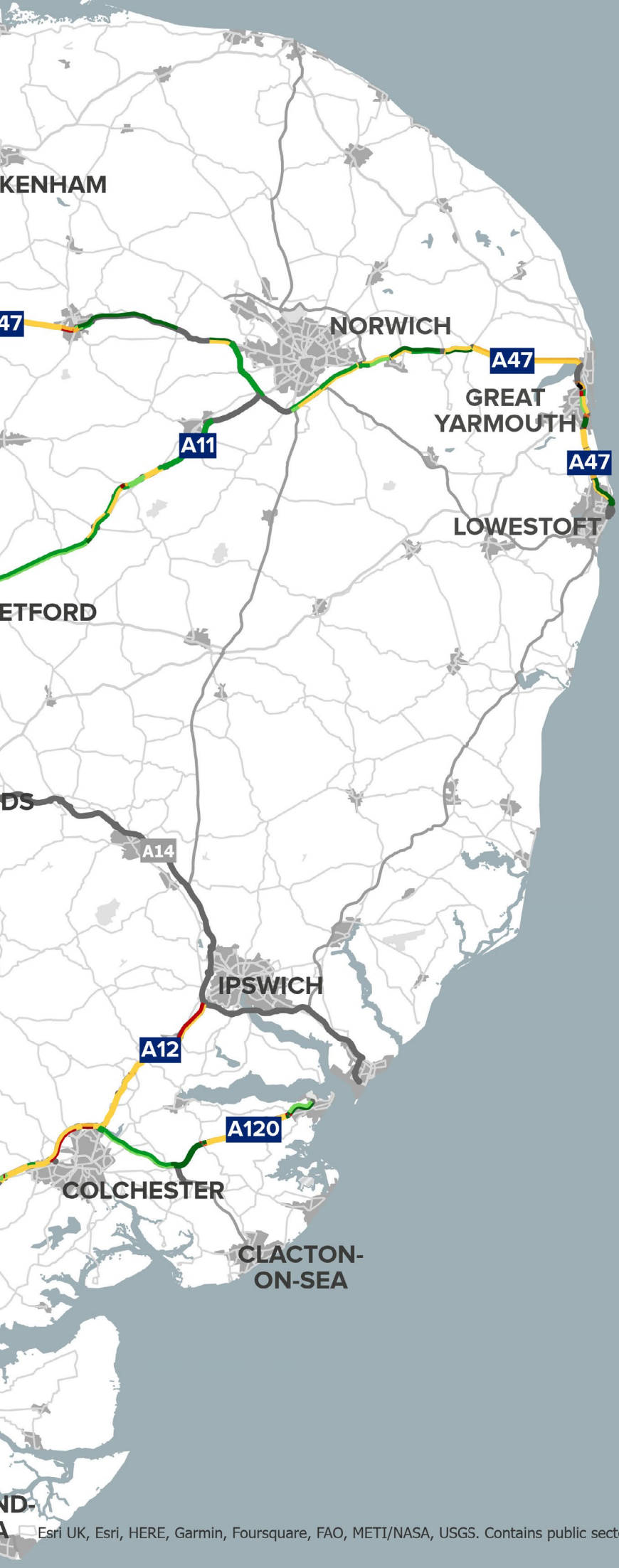


Figure 17: 2031 Forecast morning peak delay (source: RTM)

3. Improved environmental outcomes

Climate change is affecting society as a whole, and the transport sector is no exception. As the Government-owned company tasked with building and maintaining the strategic road network, 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*[28] 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*[29] third and most recent independent assessment of climate risk, that there are key risks from a changing climate for infrastructure, such as risks to bridges from flooding and erosion and risks to subterranean and surface infrastructure from subsidence.

We are committed to net zero carbon construction by 2040 and net zero carbon travel by 2050. This will involve significant changes to the way we build and manage our network, including in the East of England area. 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).

There are a number of receptors along sections of the route which may be more sensitive to air quality issues, which include:

- A12 to the North of Chelmsford and near Colchester
- A120 around Braintree
- A47 to the West of Dereham
- A47 between Great Yarmouth and Lowestoft
- A11 around Attleborough

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

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

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

28 National Highways, *Net zero highways: our 2030 / 2040 / 2050 plan,* https://nationalhighways.co.uk/media/eispcjem/net-zero-highways-our-2030-2040-2050-plan.pdf
29 Climate Change Committee, 2021, *Independent Assessment of Climate Risk,* https://www.theccc.org.uk/publication/independent-assessment-of-uk-climate-risk/

Air Quality Management Areas at Wisbech and Norwich sit near the route. Both can exceed limits for air quality.

There are a number of receptors along sections of the route which may be more sensitive to noise issues. These sections include on the A12 near Chelmsford and towards Colchester, as well as on the A120 around Braintree.

There also are a large number of Noise Important Areas (NIAs) immediately adjacent to most parts of the route, which are based upon the Department for Environment, Food and Rural Affairs strategic noise maps results and have been produced in line with the requirements set out in the noise action plans (Noise action plans provide a framework to manage environmental noise and its effects). This includes NIAs immediately adjacent to the A12 between the M25 and Ipswich, the A120 between Braintree and Colchester, and the A47 between Great Yarmouth and Lowestoft. Smaller clusters of NIAs are also present adjacent to various locations along the A47 and A11 where the route passes through settlements or close to residential properties, such as Dereham, Elveden and Narborough.

According to Transport East, the East of England has among the highest per-capita carbon emissions in the UK, with transport responsible for 42% of the region's carbon emissions (relative to a national average of 28%)[30].

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

Climate change is affecting society as a whole, and the transport sector is no exception. As the Government-owned company tasked with building and maintaining the strategic road network, we need to show both how we can help tackle the causes of climate change and how we are preparing for a changing climate. In 2021 we published our *Net zero highways plan*[31] 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, 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.

30 Transport East, *Decarbonisation Evidence Base and Strategic Recommendations Report,* https://www.transporteast.org.uk/wp-content/uploads/Transport-East-Decarbonisation-Evidence-Base-and-Strategic-Recommendations-Report_WEB.pdf

31 National Highways, *Net zero highways: our 2030 / 2040 / 2050 plan,* https://nationalhighways.co.uk/media/eispcjem/net-zero-highways-our-2030-2040-2050-plan.pdf

Key challenges

- A number of sections of the route at risk of flooding, with coastal and surface water flooding on the A47 west of Great Yarmouth and on the A12 between Ipswich and Colchester, and surface water flooding on the A47 between Peterborough and Kings Lynn and on the A12 south of Chelmsford
- Impacts on areas of outstanding natural beauty with environmental designations and cultural heritage. The A47 is a key gateway to the Norfolk Broads National Park, and the route also provides access to AONBs such as the Suffolk and Norfolk Coasts and Dedham Vale
- There are a number of receptors along sections of the route which may be more sensitive to air quality issues, such as the A12 to the North of Chelmsford and near Colchester, the A120 around Braintree, the A47 to the West of Dereham, the A47 between Great Yarmouth and Lowestoft and the A11 around Attleborough
- There are Air Quality Management Areas at Wisbech and Norwich sit near to the route
- There are a number of receptors along sections of the route which may be more sensitive to noise issues. These sections include on the A12 near Chelmsford, as well as on the A120 around Braintree
- Resilience to future climate change on the route

4. Growing the economy

The route supports east–west (together with the A14 Felixstowe to Midlands Route Strategy) and north-south travel across the East of England. This means it has a critical economic function in supporting growth across the region and the Government's levelling up agenda. The index of priority places for the Levelling Up Fund places local authorities into categories 1, 2 or 3, depending on their identified level of need, with category 1 representing places deemed in most need of investment through the Fund. Tendring, South End, Great Yarmouth, Kings Lynn, West Norfolk and Peterborough all identified as priority areas, included in categories 1 and 2.

The route provides access to the region's international gateways at the ports of Kings Lynn, Great Yarmouth, Ipswich, Harwich and Felixstowe, as well as Stansted, Norwich and Southend Airports from the rest of the UK. Significant growth is expected at these gateways, especially as a result of Freeport East.

The A12 acts as the key conduit for travel towards London and onwards to other international gateways in the South East from East Anglia. With the development of the Lower Thames Crossing, we expect the role of the route in facilitating movements between these gateways will become even more vital.

The route also provides access to the coasts of Norfolk, Suffolk and Essex, key tourism locations within the UK, with towns and villages along the coast relying heavily on tourism to support local business.

There is high car dependency on the route as urban centres in the East of England are relatively poorly connected by public transport. As a result, the performance of the route is likely to be impacted by the development of proposed garden villages at Easton Park (10,000 homes),

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

Tendring-Colchester Borders (9,000 homes) and North East Chelmsford (10,000 homes), as well as planned job and housing growth around Ipswich, Norwich, Kings Lynn, Braintree, Thetford, Wisbech and Peterborough. In total, The Transport East draft transport strategy[32] outlines that the region is planning 319,000 new homes and 167,000 new jobs over the next 15 years. The Ipswich Adopted Local Plan outlined 8,280 new dwellings and 9,500 new jobs to support growth between 2018 and 2036. The Greater Norwich Local Plan identified a need for 11,030 affordable homes in Greater Norwich from 2015 to 2038, as well as a target of at least 33,000 additional jobs in the period 2020-2038. The Peterborough Local Plan identified the need for 17,470 dwellings between 2018 to 2036, as well as the need for 17,600 jobs between 2015 and 2036.

The east coast has historically been key to the energy generation needs of the UK, with nuclear sites at Sizewell and Bradwell long-established.

This has continued to develop with offshore wind generation and the region's easy access to North Sea oil and gas infrastructure. The continued need to invest in renewable energy will require the movement of people and infrastructure to the east coast, and as a result the route will play a key role in facilitating this growth.

32 Transport East (2021), *Transport East draft transport strategy,* https://www.transporteast.org.uk/wp-content/uploads/TransportEastStrategy.v6.pdf

The agricultural and food processing industries play an important role in the economy of the East of England, and in providing food to the rest of the UK. For example, three of the four sugar beet processing facilities in the UK are located in the region. The efficient movement of crops and goods will be important to the continued expansion of these industries.

Key challenges

- The route provides connectivity between the coast and the rest of the UK, providing access to the region's international gateways at the ports of Kings Lynn, Great Yarmouth, Ipswich, Harwich and Felixstowe, as well as Stansted, Norwich and Southend Airports. Significant growth is expected at these gateways, especially as a result of Freeport East
- The route also provides access to the coasts of Norfolk, Suffolk and Essex, key tourism locations within the UK, with towns and villages along the coast relying heavily on tourism to support local business
- Sustainable development to be placed on strategic routes such as proposed garden villages at Easton Park, Tendring-Colchester Borders and North East Chelmsford as well as planned job and housing growth around Ipswich, Norwich, Kings Lynn, Braintree, Thetford, Wisbech and Peterborough
- The route has a critical economic function in supporting growth and the government's levelling up agenda across the region for places deemed in most need of investment such as Tendring, South End, Great Yarmouth, Kings Lynn, West Norfolk and Peterborough

5. Managing and planning the SRN for the future

Maintaining the strategic road network

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

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

Road surface

The measure for road surface condition has been updated for 2022/23 onwards. The condition is reported as one of our Key Performance Indicators and shows the condition of all available lanes of the main carriageway based on 3 elements of the road surface condition namely - the levels of surface rutting (caused by wheel tracks being formed in the surfacing), skid resistance (how slippery the road is) and longitudinal profile (how bumpy the road feels) with a target of 96.2% or more in good condition. At the time of publication, the road surface had a score of 96.7% in good condition, thereby meeting the national surfacing condition target.

This route consists of approximately 900 lane-kilometres of road surfacing. The surface condition across the route is considered to be sound, with 92% of pavement asset not requiring investigation for possible maintenance.

Bridges and structures

There are 340 structures across the route, including bridges and large culverts. According to an analysis of current data, 92% of our structures are in very good or good condition. By carrying out inspections of each individual structure every two years, we identify any defects that may require maintenance, thereby helping to ensure that structural components are replaced before they fail.

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

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

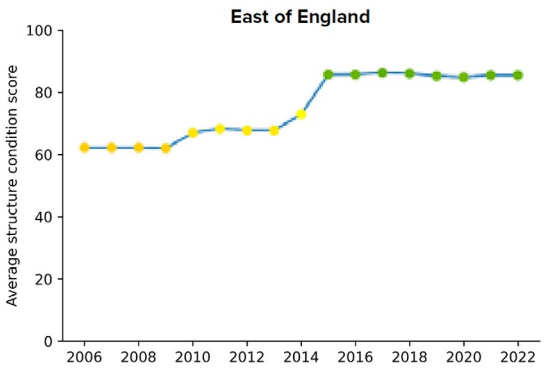


Figure 18: Average condition scores of structures, since 2006

Drainage

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

Geotechnical features

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

Future developments

We have been transforming our approach to maintenance through our Operational Excellence and Asset Management Transformation Programmes. Bringing our key asset maintenance decision making and planning activities back in-house so that our own staff are responsible for planning maintenance activities, along with improving the consistency of our end-to-end maintenance and asset replacement programmes will bring significant benefits. Our asset management transformation also includes the improved analysis to identify the investment required on the strategic road network during the third Road Period (2025-2030). The business case will provide evidence to support future maintenance investment, clearly articulating the costs and benefits of delivering an effective maintenance and asset replacement programme.

Operations

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

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

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

Key challenges

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

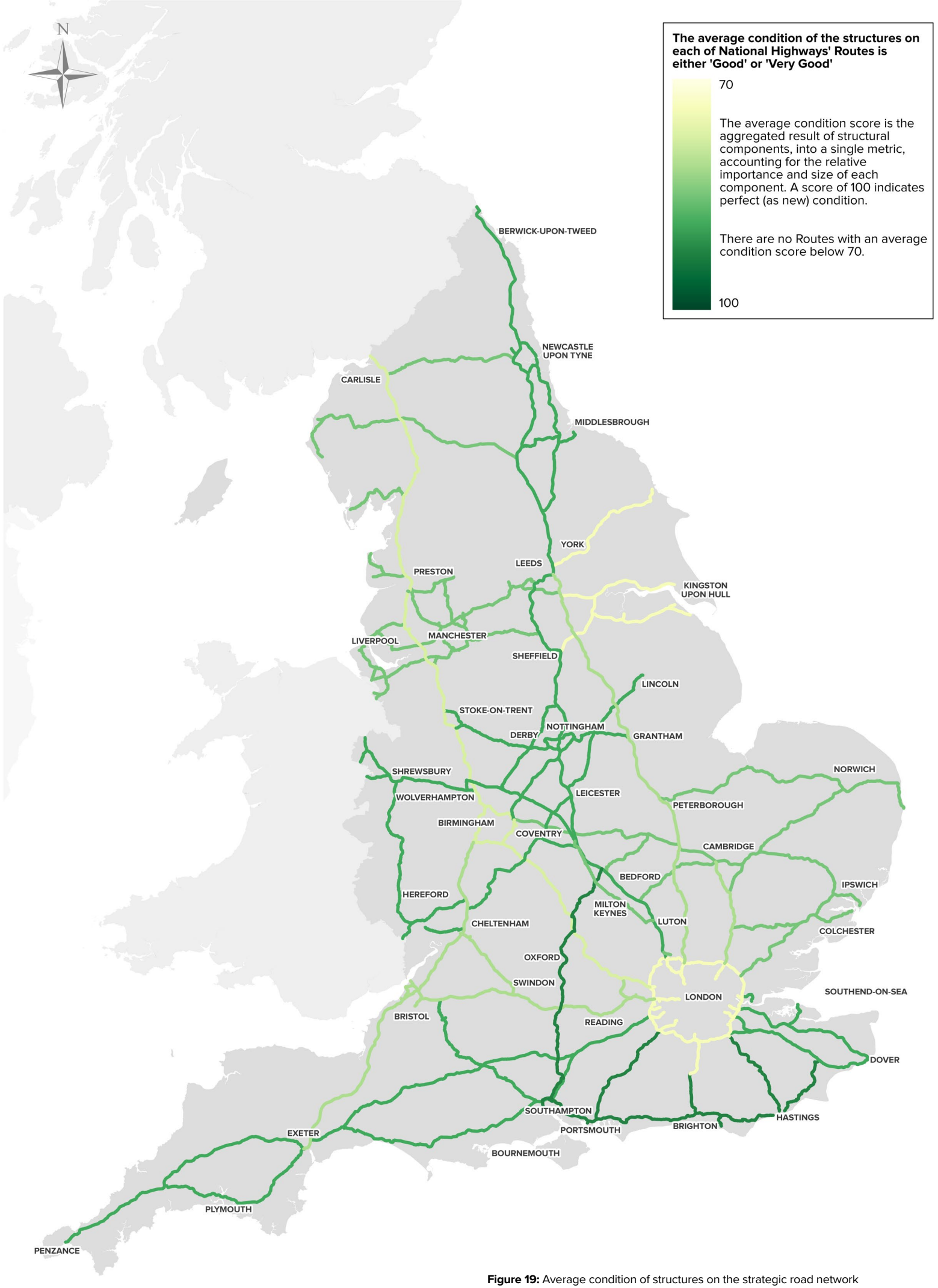


Figure 19: Average condition of structures on the strategic road network

6. A technology-enabled network

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

- Reduce day-to-day delays and improve the 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

Technology on the route is limited and interested parties felt it lags behind other roads of a similar standard elsewhere in the country. This can be exacerbated as older technology in certain areas is only connected to the regional control centre and not the national control centre.

This leaves users with little advanced knowledge of problems on the network that would allow them to better plan their journeys, for example re-routing to use the A120 rather than the A14 in the case of a collision or vice versa. As the route plays a key role in accessing international gateways and tourist locations, there are often road users not familiar with the route who could greatly benefit from real time communications.

Supporting travel by cleaner vehicles will help support our net zero target and support reduced emissions across the network.

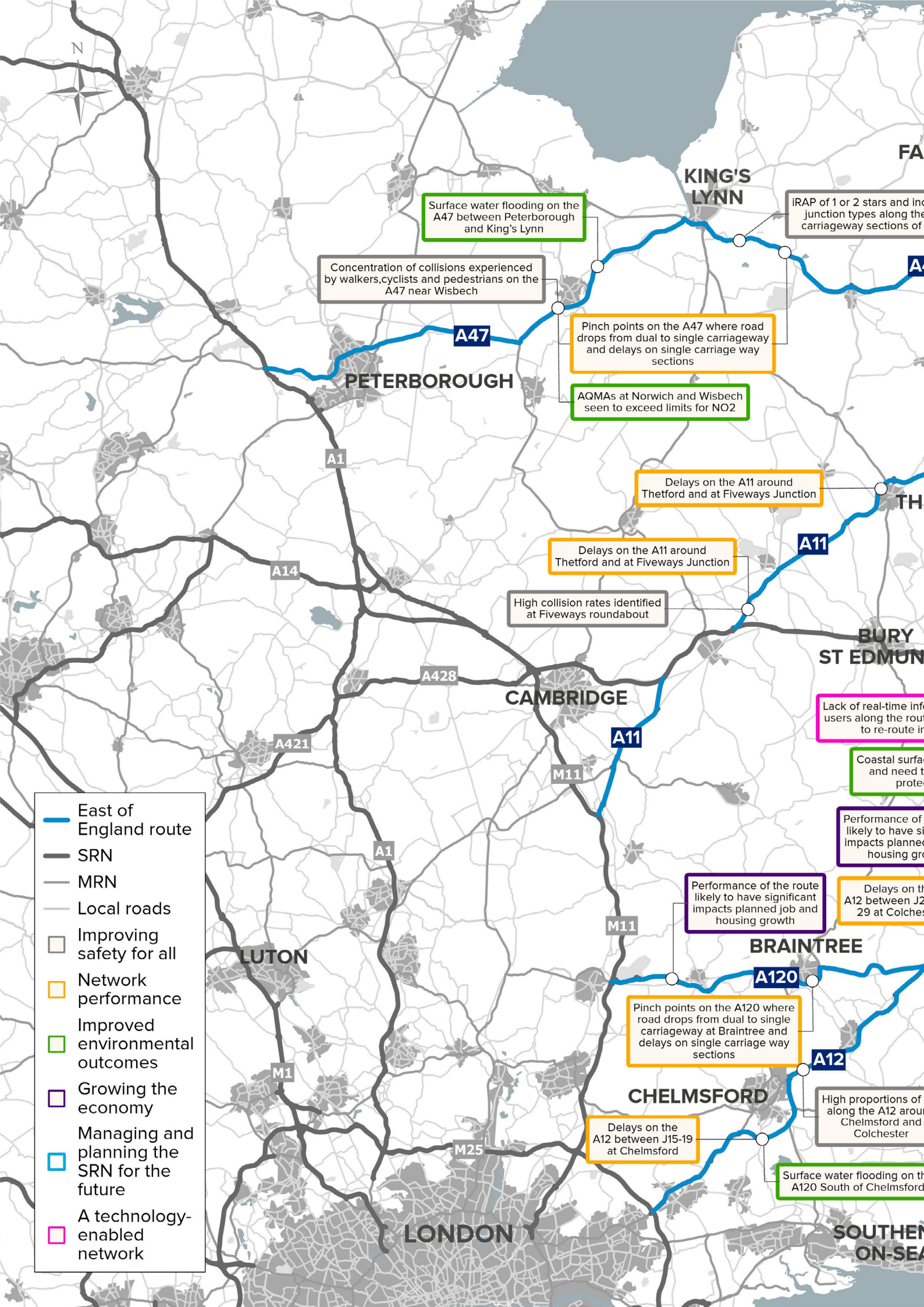
We will support improved communications and facilities for all

Support for alternative fuels and electric vehicles will therefore be key in achieving goals on the network. Currently there are some electric charging locations across the East of England, but with relatively few charging points actually on the route itself typically in more urban areas.

Key challenges

- Limited real time communications for all road users with little advanced knowledge of problems on the network that would allow better journey planning
- Promoting the carbon agenda, the use of electric vehicles and the limited charging capacity on the route


RIVER
YARE


N
KING'S LYNN
Surface water flooding on the A47 between Peterborough and King's Lynn
iRAP of 1 or 2 stars and inc junction types along the carriageway sections of
Concentration of collisions experienced by walkers,cyclists and pedestrians on the A47 near Wisbech
A47
Pinch points on the A47 where road drops from dual to single carriageway and delays on single carriage way sections
PETERBOROUGH
AQMAs at Norwich and Wisbech seen to exceed limits for NO2
A1
Delays on the A11 around Thetford and at Fiveways Junction
A11
A14
Delays on the A11 around Thetford and at Fiveways Junction
High collision rates identified at Fiveways roundabout
BURY ST EDMUN
A428
CAMBRIDGE
Lack of real-time inf users along the rou to re-route in
A421
A11
M11
Coastal surfa and need t prote
Performance of likely to have si impacts planne housing gr
A1
Performance of the route likely to have significant impacts planned job and housing growth
Delays on th A12 between J2 29 at Colches
M11
BRAINTREE
LUTON
A120
Pinch points on the A120 where road drops from dual to single carriageway at Braintree and delays on single carriage way sections
A12
M1
CHELMSFORD
High proportions of along the A12 arou Chelmsford and Colchester
Delays on the A12 between J15-19 at Chelmsford
M25
Surface water flooding on th A120 South of Chelmsford
LONDON
SOUTHEN ON-SEA
East of England 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

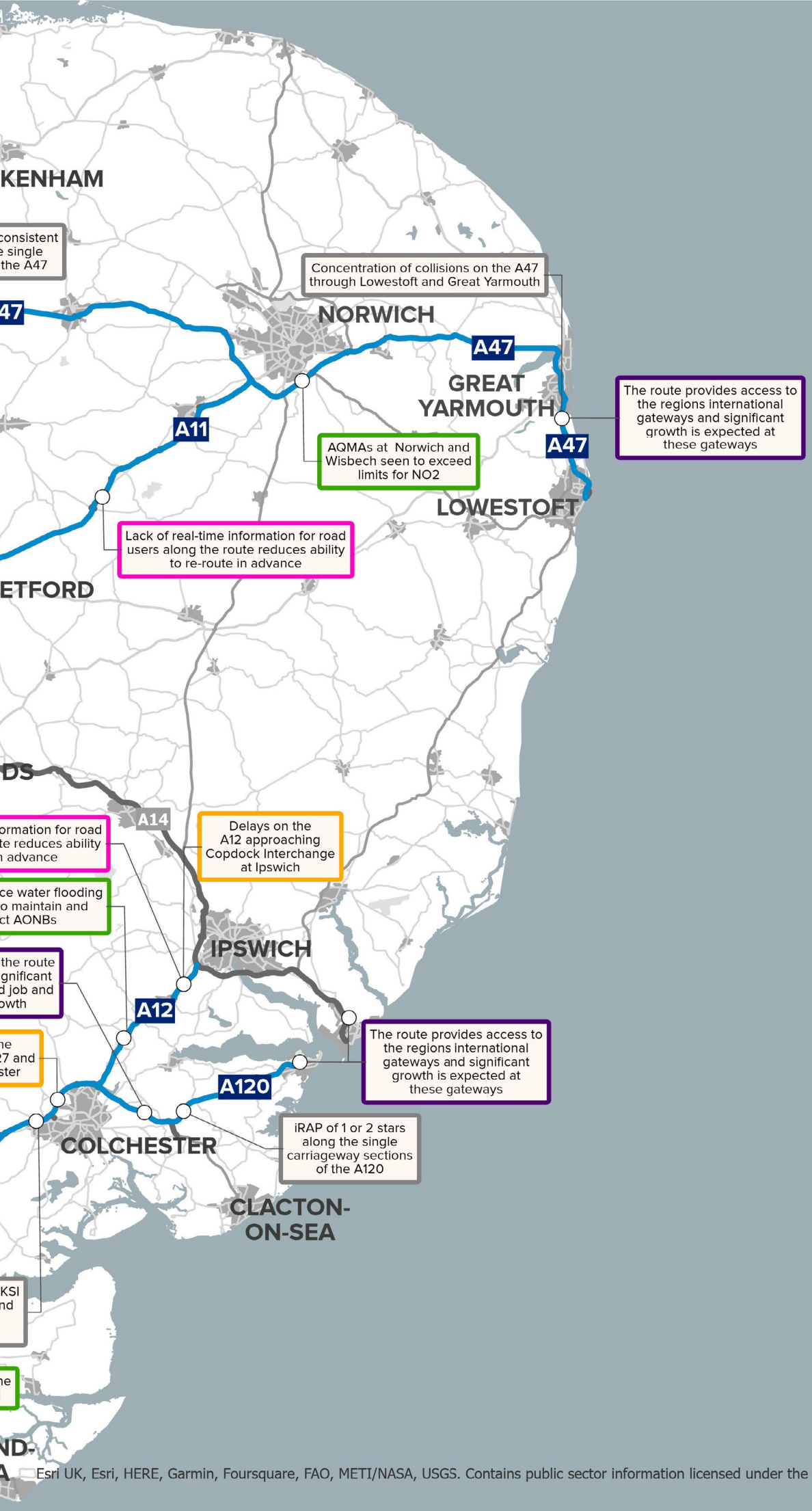


Figure 20: Key challenges

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 East of England route, and help the region achieve its economic and housing growth ambitions. Based on our engagement and data analysis, we have defined eight 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 strategic road network.

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

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

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

Route objectives and DfT's strategic objectives

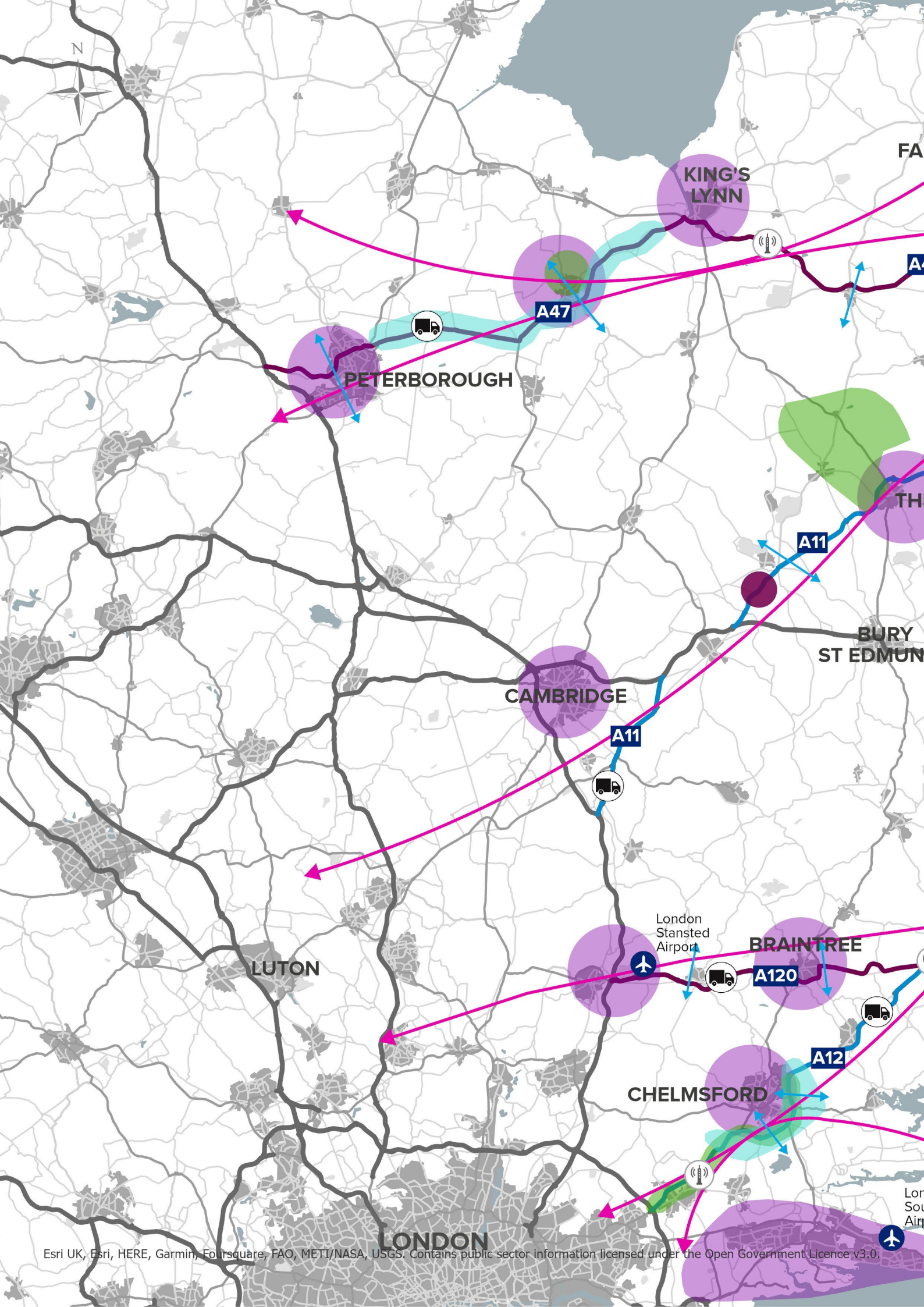
In Figure 21 we illustrate the seven route objectives on our route map and, in Table 1, we show how they contribute to the Government's strategic objectives for our network as a whole.

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

	Ref.	Route objective
	A	**Provision of a safer, more resilient and consistent network** to improve road user experience of safe and reliable journeys through provision of a more consistent network on the A47 and A120
	B	**Support improved connectivity across the route** to support local accessibility for residents near the route and other areas that ex-perience high volumes of collisions involving walkers and cyclists limiting connectivity with local communities
	C	**Improve conditions and facilities for freight drivers travelling between the region's international gateways** to support economic growth associated with the region's major ports, airports and distribution centres
	D	**Improve communications to better inform drivers** of incidents to reduce delay and uncertainty surrounding journey time reliability to drivers and improve end-to-end journey experience to support the regional and national economy
	E	**Support sustainable growth of the East Anglian Coast and International Gateways** to support the development of international gateways (including the ports of Felixstowe, Ipswich, Harwich, Great Yarmouth and Lowestoft and Stansted and Norwich airports), offshore energy and year round tourism
	F	**Support sustainable growth and levelling up for deprived areas and coastal communities** to improve connectivity to key developments enabling residents to better connect to jobs and services and supports the continued economic growth of more deprived areas
	G	**Be a better neighbour by protecting environmentally sensitive sites and improving environmental conditions for residents impacted by the SRN** to minimise impacts at environmentally important locations and supports improved air quality and noise conditions
	H	**Increase the resilience of the A47 and A12 to future adverse weather events** that supports reliable journeys for road users through reducing the impact of adverse weather events on route

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
✓	✓				
✓					
✓	✓		✓		
	✓			✓	✓
	✓		✓	✓	
		✓	✓		
		✓			
	✓	✓		✓	


N
KING'S LYNN
A47
PETERBOROUGH
A11
BURY ST EDMUN
CAMBRIDGE
A11
London Stansted Airport
BRAINTREE
A120
LUTON
A12
CHELMSFORD
LONDON
Esri UK, Esri, HERE, Garmin, Foursquare, FAO, METI/NASA, USGS. Contains public sector information licensed under the Open Government Licence v3.0.

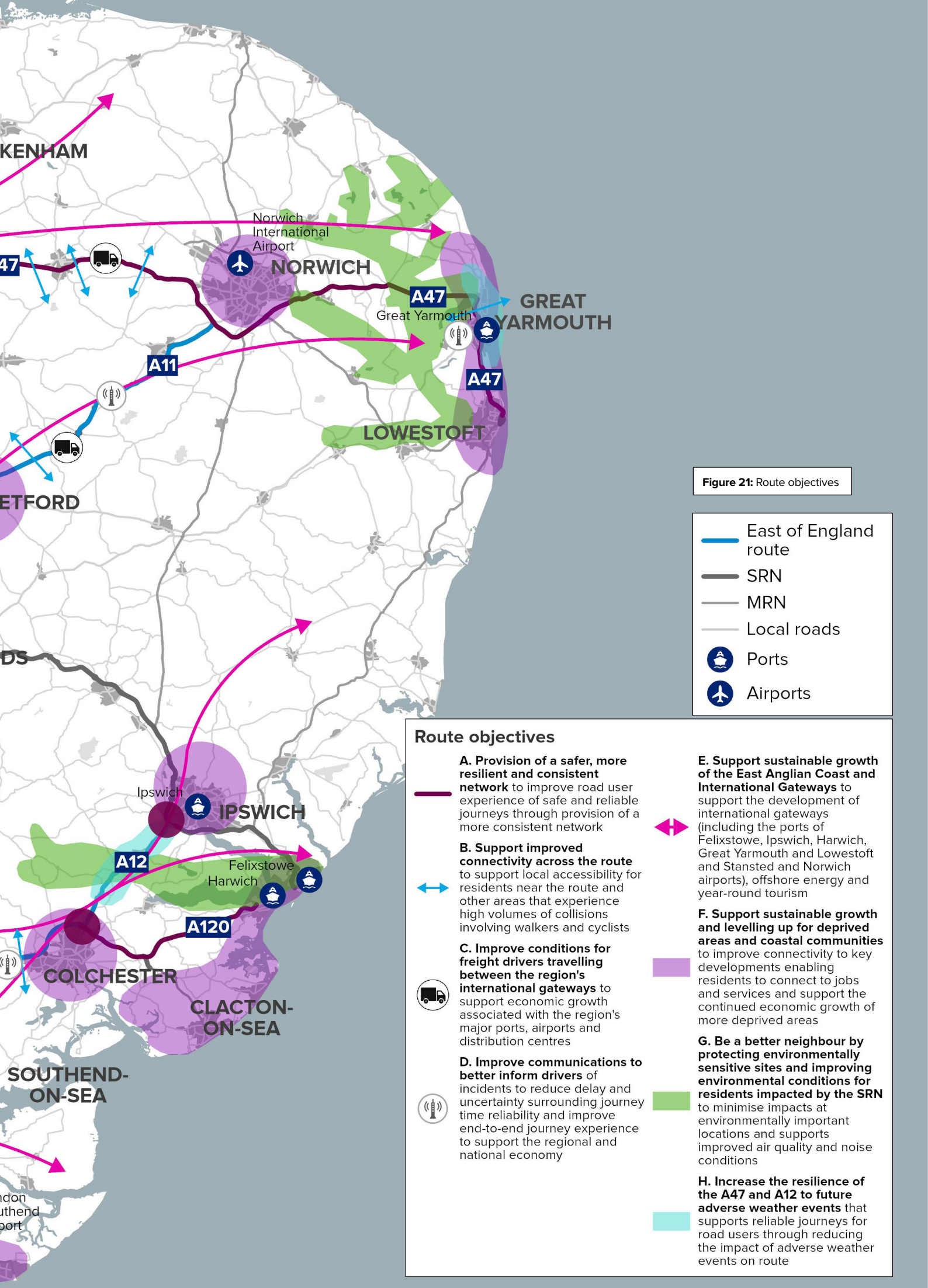


Figure 21: Route objectives

- East of England route
- SRN
- MRN
- Local roads
- Ports
- Airports

Route objectives

A. Provision of a safer, more resilient and consistent network to improve road user experience of safe and reliable journeys through provision of a more consistent network

B. Support improved connectivity across the route to support local accessibility for residents near the route and other areas that experience high volumes of collisions involving walkers and cyclists

C. Improve conditions for freight drivers travelling between the region's international gateways to support economic growth associated with the region's major ports, airports and distribution centres

D. Improve communications to better inform drivers of incidents to reduce delay and uncertainty surrounding journey time reliability and improve end-to-end journey experience to support the regional and national economy

E. Support sustainable growth of the East Anglian Coast and International Gateways to support the development of international gateways (including the ports of Felixstowe, Ipswich, Harwich, Great Yarmouth and Lowestoft and Stansted and Norwich airports), offshore energy and year-round tourism

F. Support sustainable growth and levelling up for deprived areas and coastal communities to improve connectivity to key developments enabling residents to connect to jobs and services and support the continued economic growth of more deprived areas

G. Be a better neighbour by protecting environmentally sensitive sites and improving environmental conditions for residents impacted by the SRN to minimise impacts at environmentally important locations and supports improved air quality and noise conditions

H. Increase the resilience of the A47 and A12 to future adverse weather events that supports reliable journeys for road users through reducing the impact of adverse weather events on route

A. Provision of a safer, more resilient and consistent network

Objective

Improve road user experience of safe and reliable journeys through provision of a more consistent network on the A47 and A120

Context

The strategic road network (SRN) in the East of England is not of a consistent layout. This is particularly true for the A47 where there are 19 changes in carriageway layout (switching between dual and single carriageway) between Great Yarmouth and Peterborough. It is also true elsewhere on the A12, A120 and A11, with a mix of road layouts and junction types (including pedestrian crossings and right turns across dual carriageway sections of the route). The impacts this has on road users acts as a constraint on growth, particularly for coastal regions which do not have realistic alternatives such as well connected public transport.

Interested parties have also said that these inconsistent layouts can lead to increased delays and driver frustration, which in turn leads to safety concerns due to road users attempting dangerous overtaking manoeuvres and trying to find alternate routes via the Local Road Network, also contributing to more unreliable journey times.

There have been a number of collisions along the route with sections of the route with an iRAP star rating of 1 or 2.

There are also sections of the route involving collisions with walkers, cyclists and horse riders, which make up over 25% of collisions between Great Yarmouth and Lowestoft.

A safer, more consistent and more reliable highway network is required to improve travel between the region's key economic centres and to support economic growth across the East of England as businesses can work together more efficiently and goods can be delivered more reliably.

This will also improve access to the east coast where the tourism, freight and energy industries suffer due to poor connections (particularly on the A47) to the rest of the country.

Our network considerations

The changes in carriageway standard causes delay on the route due to road layout variations, with a differing number of lanes on the A47 and A120. Improvements would have a number of benefits, including improved safety, collision reductions, reduced delays as well as more reliable journey times. Locations of sections of the route with high delays include where the road drops from single to dual carriageway, including on the A120 at Braintree and approaching Marks Tay, and the A47 between Easton and Hockering.

Single carriageway sections of the route also experience delays at junctions such as at Wisbech on the A47 and at Braintree on the A120.

Given the heavy freight and agricultural usage on these roads, slow moving vehicles can lead to clusters of vehicles and dangerous overtaking manoeuvres, as raised by interested parties.

Other sections of the route with relatively significant delays include:

- A12 between Junction 15 and Junction 19 at Chelmsford
- A12 between Junction 27 and Junction 29 at Colchester
- A12 approaching Copdock Interchange at Ipswich
- A11 around Thetford
- A11 around Fiveways Junction Mildenhall

There are no alternative routes to avoid these issues, nor realistic public transport alternatives. This lack of suitable alternative routes is a major issue for the route, with official diversion routes (used during scheduled works or management of incidents) often using less suitable local roads passing through small villages. This can then impact local residents, causing severance (separation of people from facilities and services they use within their community) and making their local journeys slower and more complicated.

The inconsistent layouts of the route also stands out when looking at safety data, with single carriageway sections of the route and places where there are crossings of dual carriageways at the same level, typically experiencing more collisions and having a lower safety rating. The iRAP Star Ratings indicate sections located along the route, particularly on single lane sections, including on the A47 where there are inconsistent layouts.

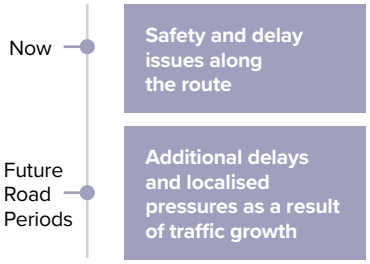
Outcomes

- Improved safety for road users
- More reliable journey times, particularly for east-west movements

DfT's Strategic objectives

- Improving safety for all
- Network performance

Timeframe based on the issues and constraints identified



B. Support accessibility and connectivity across the route

Objective

Support local accessibility and connectivity for residents near the route, particularly at Wisbech and Dereham on the A47 and Chelmsford on the A12, and other areas that experience high volumes of collisions involving walkers and cyclists limiting connectivity within local communities

Context

The strategic road network (SRN) acts as a barrier in several towns and villages along the route by dividing communities. Busy roads are difficult to cross and can deter people from accessing businesses and properties on the other side. While newer dual carriageway sections tend to avoid urban areas, in places such as Dereham on the A47 and Braintree on the A120, communities are divided by the SRN with few grade separated crossing points (where at least one bridge or tunnel is used to separate traffic) available, which can deter walking and cycling. Severance on older single carriageway routes divide communities and prevent local people from accessing services.

Examples of severance on single carriageway sections of the A47 include Wisbech, Little Fransham, Dereham and Hockering. Severance can have implications for pedestrian, cyclist and horse rider safety as people lack safe crossing points on busy roads.

Pedestrian, cyclist and horse rider safety is an issue in Great Yarmouth and Lowestoft, as the A47 divides the community. More than 25% of collisions on this section of the A47 include a walker, cyclist or horse rider.

Interested parties have highlighted the severance of communities, with a particular mention of severance for active modes accessing Stanstead Airport. Pedestrian and cycle routes, including the National Cycle Network, are divided by the A47 and A11, requiring that users cross either signalised or unmarked crossings. When the SRN is closed due to collisions or maintenance, interested parties have stated that diversion routes for the majority of routes are considered unsuitable, particularly for HGVs and other large vehicles, and instead travel on poor quality single carriageway routes through smaller villages.

Our network considerations

Severance affects several towns and villages across the East of England, particularly on the A47 (where a large number of properties and businesses open directly onto the road), the A11, and to a lesser extent the A12 and A120. Safety implications of severance to walkers, cyclists and horse riders is clear on the A47 in Great Yarmouth, Lowestoft, and in the villages located between King's Lynn and Norwich.

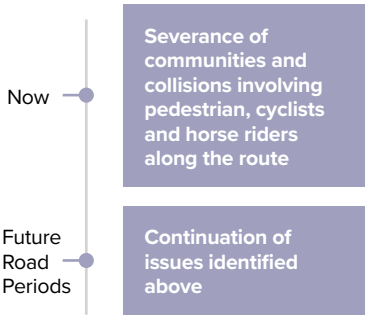
Outcomes

- Reduced severance of communities along the SRN
- Improved safety for road users
- Consistent and reliable diversion routes for the SRN

DfT's Strategic objectives

Improving safety for all

Timeframe based on the issues and constraints identified



C. Improve conditions and facilities for freight drivers travelling between the region's international gateways

Objective

Support reliable UK strategic north-south connectivity for people and goods between London and the South East of England, the North of England and Scotland.

Context

With four major ports located on the East Anglia coast making up 10% of national freight by volume, and two international airports, freight has a significant presence on the route. Some sections of the route (such as the A47 near Wisbech and the A12) see HGVs make up nearly 15% of total traffic.

The route also provides access to a number of large distribution centres, particularly around Peterborough, on the A11 and on the A12. Over recent years the number of HGV drivers in the UK has fallen (dropping 53,000 nationally in four years). This is due to a number of reasons, but among those given is the reduction in facilities for drivers, such as designated rest stops. This is a particular concern in the East of England, given the economic impact that freight has on the local economy and the fact that facilities in the region have drastically decreased. This is backed by the *DfT's National Survey of Lorry Parking*, which indicates that the East of England lorry parking facilities are at capacity.

Alongside the lack of facilities for freight drivers, the nature of the route (in particular the switching between single and dual carriageway on the A47 and A120) can cause issues for drivers, with dangerous overtaking manoeuvres from other road users and delays at peak times. In addition, the rural diversion routes can sometimes be difficult for HGVs to navigate, with roads through smaller towns and villages.

When combined, these issues do not support the freight industry's staff retention, which can have negative impacts given the importance of freight to the region's economy. International gateways play a huge role in the region's economy, especially the ports, but freight is also required to support all the other industries in the region, with other key areas being:

- Energy generation – offshore developments need parts, equipment and supplies to reach the coast to continue their growth
- Tourism – the hospitality sector 4 is hugely reliant on freight to provide supplies

Our network considerations

Some sections see HGVs make up nearly 15% of total traffic, compared to the SRN average of 11%. Freight driver facilities and laybys are infrequent on the route. Some evidence from engagement sessions with interested parties suggests that facilities have been closed or reduced, increasing pressure on those that remain open. The *DfT's National Survey of Lorry Parking* suggests that lorry parking in the East of England is currently "critical".

Outcomes

- Improved facilities for freight drivers
- Improved conditions for freight movement on the route
- Economic growth supported

DfT's Strategic objectives

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

Timeframe based on the issues and constraints identified

Now

Lack of rest facilities for HGV drivers along key sections of the corridor

Future Road Periods

Continuation of issues identified above

D. Improve communications to better inform drivers

Objective

Better inform users of incidents to reduce delay and uncertainty surrounding journey time reliability to drivers and improve their end-to-end journey experience to support the regional and national economy.

Context

Technology on the route is limited, with little opportunity for real time updates to road users. Where there is provision of technology this is often not connected to the National Highways National Control System, so communication about onward journeys is not straightforward. For example, road users heading west on the A120 cannot be given warnings of long delays northbound or southbound on the M11 that could allow them to change their route.

As the route plays a key role in accessing the ports on the East Anglian coast, international airports and for tourism, many road users are often not regular users of the route. Providing these road users with more information (particularly about onward travel from those arriving at international gateways) can improve their experience, and at the same time avoid frustration for regular users.

Interested parties also raised that what technology there currently is on the route does not necessarily work for local users as junction numbers are not regularly used or easily seen.

This means the available messaging can be difficult to understand without additional information. Improved technology on the route fits well with National Highways' Digital Roads Strategy which aims to provide a common approach for realising shared strategic ambitions and supporting growth. Currently journeys on the route can be unreliable, especially in the summer when tourism traffic interrupts regular traffic. By improving real time communications, road users can be notified of delays on the route. This can help make journeys reliable by avoiding congested routes with a new recommended route choice when incidents occur. Improved technology provision on the route could also help to facilitate improved digital connectivity, including to the national control centre, one of the key drivers of growth.

Our network considerations

The lack of technology along the majority of the route is impacting drivers' ability to plan their route in advance. Most technology provision on the route is not connected to the national control system. The route contains a number of decision points where alternate routes can be selected (for example A120 vs A14 vs A12) but the lack of technology on the route doesn't show road users their options if there is an incident, some sections of the route are shown to have unreliable journey times as a result. This will support the movement of freight, access to key development sites, ports, free ports and tourism sites.

Some sections of the route and other roads that the route connects to have high numbers of collisions, which often lead to closures.

Improved technology would allow road users to divert and use other parts of the route to avoid delay and improve journey time reliability. Locations with particularly unreliable journey times include the A12 approaching Copdock Interchange, the A120 between Braintree and Marks Tey, the A12 around Chelmsford, and the A47 between Norwich and Lowestoft.

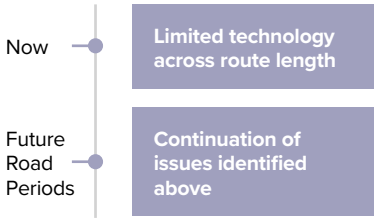
Outcomes

- Improved real time information to road users
- Improved driver experience
- Better ability for drivers to choose alternative routes in the event of an incident
- Improved onward travel from international gateways

DfT's Strategic objectives

- Network performance
- A technology-enabled network
- Managing and planning the SRN for the future

Timeframe based on the issues and constraints identified



E. Support sustainable growth of the East Anglian Coast and International Gateways

Objective

Supporting the economic growth on the East Anglian Coast and international gateways (including the ports of Felixstowe, Ipswich, Harwich, Great Yarmouth and Lowestoft and Stansted and Norwich airports), offshore energy and year round tourism

Context

The route has a key role in supporting growth, particularly with the international gateways it serves.

Through providing access to the coast, it supports and provides access to the region's major ports. These ports account for nearly 10% of the UK's total sea shipping by tonnage.

The route (particularly the A12) provides links from East Anglia to the key ports of Tilbury and London Gateway. The route also provides access to Stansted Airport, Southend Airport and Norwich Airport, which are the 4th, 18th and 26th busiest airports in the UK respectively by passenger volume. Connecting these international gateways to the rest of the UK supports strategic movements. All have significant growth ambitions, which is likely to increase both freight and passenger traffic on the route.

The route also provides access to the coasts of Essex, Norfolk and Suffolk. Key tourism hubs within the UK, these areas rely heavily on seasonal trade, and as a result traffic on the route is typically at its highest in August (sometimes by as much as 25% compared to the lowest months).

The east coast is key to the energy economy of the UK. This is particularly true now with expanding offshore wind sites along the coast, and towns operating as hubs for offshore development in wind, oil and gas. There is high car dependency on the route, as many movements cannot be easily made on public transport and freight is predominantly transported via road. A shift towards public transport (such as the potential rapid transit network proposed in the Transport East Strategy) and rail freight would support improved connectivity.

Tourism is a key provider of jobs in the region, and there are goals to develop the established coastal tourism into a year-round industry.

Our network considerations

Currently the route suffers from several limiting factors that inhibit the east coast from fulfilling its potential:

- Inconsistent route and junction standards, with changes between single and dual carriageway, leading to capacity constraints and delays on the route
- Delay on the A47, A12 and A120, as well as the A11 near Thetford, limits the movement of goods and people to and from the east coast, and has subsequent effects for freight and tourism
- The delivery of the Lower Thames Crossing may affect traffic flows on the A12.
- The route will provide a link from the midlands to Lower Thames Crossing and onwards to the south coast

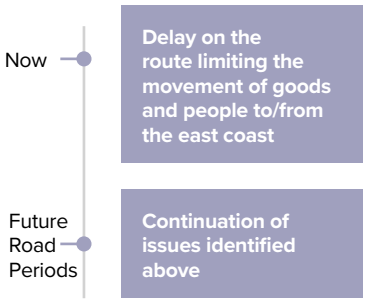
Outcomes

- More reliable and faster journey times to access the east coast
- Increased growth in the tourism and energy sectors
- Increased growth in east coast ports

DfT's Strategic objectives

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

Timeframe based on the issues and constraints identified



F. Support sustainable growth and levelling up for deprived areas and coastal communities

Objective

Improve connectivity to key developments including proposed housing and business growth around Norwich, Thetford, Ipswich, Kings Lynn and the proposed garden communities of Easton Park, North East Chelmsford and Tendring-Colchester Borders, enabling residents to better connect to jobs and services and supporting the continued economic growth of more deprived areas like Tendring, Great Yarmouth, King's Lynn, West Norfolk, Southend and Peterborough

Context

The East of England contains a number global gateways with significance to the UK's national assets, such as ports and airports. Despite this, the region also has many deprived areas, particularly in rural and coastal communities. As part of the government's levelling up agenda, there is an aspiration to improve economic opportunities within these areas. A number of districts within the region are in Levelling Up Fund category 1, meaning the highest priority for funds, including Tendring (particularly Clacton and Harwich), Southend, Great Yarmouth, King's Lynn, West Norfolk, and Peterborough.

Therefore, there is the need to greater connect these areas of low deprivation and areas identified with a need for levelling up with economic opportunities for sustainable growth on the coast.

The region plays a key role in food production and processing as such efficient movement of people and goods would greatly support the further development of the agri-food industry. Due to the high reliance on private car for travel, as well as the high volumes of freight traffic, the East of England has among the highest per-capita carbon emissions in the UK, with transport responsible for 42% of the region's carbon emissions (relative to a national average of 28%). As such, regional growth ambitions must coincide with rapid reductions in carbon emissions from transport in order to meet the government's commitment to net zero by 2050.

Our network considerations

- The international gateways and Freeport sites rely on efficient east-west freight movements along the route, particularly the A11, A12, A120 and A14, as well as north–south movements for connectivity between areas along the coast.
- Significant growth sites near Norwich, Thetford, Chelmsford, Colchester and Braintree are close to and their associated traffic and usage has potential to impact on the SRN

Outcomes

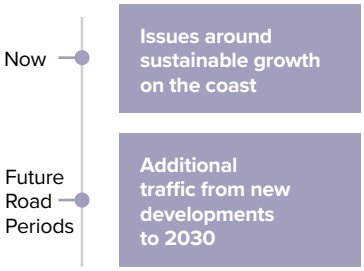
- SRN able to accommodate additional traffic, supporting sustainable growth in housing and employment
- Deprived communities are supported through levelling up, providing improved access to skills and employment opportunities
- Freight movements better supported, accommodating growth in freight traffic to and from international gateways

DfT's Strategic objectives

Improved environmental outcomes

Growing the economy

Timeframe based on the issues and constraints identified



G. Be a better neighbour by protecting environmentally sensitive sites and improving environmental conditions for residents impacted by the SRN

Objective

Minimise impacts at environmentally important locations like Thetford Forest (A11), the Broads (A47) and Dedham Vale (A12), and support improved air quality and noise conditions along the A47, A12 and A120.

Context

The East of England is home to a number of environmental assets of special significance, including a National Park, Areas of Outstanding Natural Beauty (AONB) and rare and protected habitats.

There is heavy traffic on the route and high volumes of freight traffic on sections accessing international gateways. This means noise pollution and emissions are high along many sections of the route, which can impact the health of local communities. There are a number of receptors along sections of the route which may be more sensitive to air quality and noise issues. There are also a large number of Noise Important Areas (NIAs) immediately adjacent to most parts of the route, as well as an Air Quality Management Area (AQMA) next to the A47.

Our network considerations

The A47 passes through the Broads National Park West of Great Yarmouth. This is a very flat coastal landscape with unique habitats. The A47 is visible from a large number of viewpoints across the Broads due to the flat terrain, particularly around Breydon Water and the River Yare. The A11 passes through the Thetford Forest, which is a Special Protection Area. In addition, traffic travelling between the A14, A11 and A47 will tend to use the A134 through Thetford Forest rather than remain on the SRN, due to the limited north-south connectivity in the area. The route also passes through the Dedham Vale AONB on the A12.

There are a number of receptors along sections of the route which may be more sensitive to air quality issues, which include:

- A12 to the North of Chelmsford and near Colchester
- A120 around Braintree
- A47 to the West of Dereham
- A47 between Great Yarmouth and Lowestoft
- A11 around Attleborough

There are a number of receptors along sections of the route which may be more sensitive to noise issues.

These sections include on the A12 near Chelmsford and towards Colchester, as well as on the A120 around Braintree.

The A47 passes in very close proximity to the Wisbech AQMA, which currently has exceedances for air quality (concentration of a pollutant is greater than, or equal to, the appropriate air quality criteria). There are a large number of NIAs immediately adjacent to the A12 between the M25 and Ipswich, the A120 between Braintree and Colchester, and the A47 between Great Yarmouth and Lowestoft. Smaller clusters of NIAs are also present adjacent to the various locations along the A47 and A11 where the route passes through settlements or close to residential properties, such as Dereham, Elveden and Narborough. These demonstrate existing noise pollution issues which may be more likely to impact nearby communities at these locations in these locations.

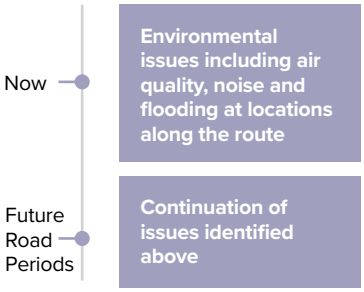
Outcomes

- Protection of sensitive landscape assets
- Biodiversity net-gain, with sensitive and protected ecological assets better supported
- Reduced impact on residents caused by road traffic noise and emissions
- Improved sense of community through reduced severance

DfT's Strategic objectives

Improved environmental outcomes

Timeframe based on the issues and constraints identified



H. Increase the resilience of the A47 and A12 to adverse weather events

Objective

Support reliable journeys for road users through reducing the impact of adverse weather events on the route. In particular, coastal flooding at Great Yarmouth (A47) and on the A12 between Colchester and Ipswich, and surface flooding on the A12 at Chelmsford and the A47 between Peterborough and Kings Lynn

Context

The East of England route passes through the flood plains of a number of rivers and low-lying regions of East Anglia. In these areas, the route is vulnerable to disruptive impacts from adverse weather events, which are expected to increase in frequency and become more severe due to climate change.

These include surface water flooding (either from surface watercourses or due to insufficient drainage), storm and wind damage, coastal flooding from rising sea levels, and storm surges. As the East of England is low-lying and predominantly flat, some parts of the route already experience surface water flooding during adverse weather due to insufficient drainage.

The severity, frequency and extent of these adverse weather events is expected to increase. Future economic growth will be dependent on national infrastructure, including the route being resilient to disruption from adverse weather events.

Closures to the route will impact on freight, commuting and business travel, causing cost increases for businesses that could result in declines in economic activity and harm aspirations for future growth.

Our network considerations

Interested parties have highlighted where flooding occurs along the route, including on sections of the A12 and the A47. The A12 is known to experience surface water flooding south of Chelmsford during adverse weather. The A47 West of Great Yarmouth is at high risk of both surface water and coastal flooding, and this risk will be significantly increased in the future. The A47 at this location is less than half a metre above present sea levels. Future sea level rises are predicted to occur towards the end of the century. The A12 between Colchester and Ipswich is vulnerable to surface water and coastal flooding in Dedham Vale. The A47 between Peterborough and Kings Lynn is vulnerable to surface water flooding from the River Nene in multiple locations.

Local roads in the region (including diversion routes for the SRN) also travel through areas prone to flooding, meaning disruption off the route could still cause significant disruption if these vehicles are diverted onto the SRN. This could prevent access to or from the route, result in significant additional local traffic using the route due to closures of surrounding roads, or lead to long diversions for users of the route.

Outcomes

- Improved resilience to disruption from adverse weather events

DfT's Strategic objectives

- Network performances
- Improved environmental outcomes
- Managing and planing the SRN for the future

Timeframe based on the issues and constraints identified

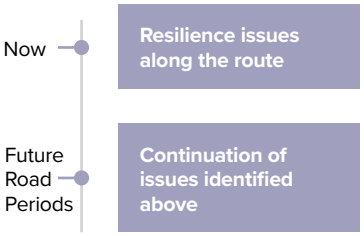


Table 2: Evidence used to inform objectives

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	**Provision of a safer, more resilient and consistent network** that improves road user experience of safe and reliable journeys through provision of a more consistent network.	Sections of the route where the road changes between single and dual carriageway between Peterborough and Great Yarmouth on the A47 and on the A12, A120 and A11.	Concerns of interested parties related to road safety on: • The need for improved resilience of the network around safety, congestion and flooding allowing consistent travel year round • Inconsistent road standards particularly on the A47 and A120 • Low safety ratings along the route	Transport East's Priorities include: • Connecting growing places that enhances links between our fastest growing places and business clusters • Unlocking international gateways for better connected ports and airports to help UK businesses thrive and boosting the nation's economy England's Economic Heartland priorities identify the need for: • Efficient movement of people and goods through the region and to/from international gateways. • Improving quality of life and wellbeing through a safe and inclusive transport system	**Key challenges and issues related to this objective are:** **Improving Safety for All:** There have been a number of collisions along the route with sections of the route with an iRAP star rating of 2 or lower. There are also sections of the route involving collisions with walkers, cyclists and horse riders, which make up over 25% of collisions between Great Yarmouth and Lowestoft. **Network Performance:** Average delays along the route including: • A12 approaching Copdock Interchange • A120 between Braintree and Marks Tey • A47 between Norwich and Lowestoft
B	**Support improved connectivity across the route** that supports local accessibility for residents near the route and other areas that experience high volumes of collisions involving walkers and cyclists limiting connectivity within local communities.	Communities through which the route passes through including on the A47 at Great Yarmouth and Lowestoft, as well as other sections on the A47 and A11 where pedestrian and cycle routes are divided by the route.	Concerns of interested parties related to road safety on: • Greater integration with public transport, walking and cycling to support more sustainable travel modes • High accident rates for pedestrians	Transport East's priorities include: • Decarbonisation to net zero by working to achieve net zero carbon emissions from transport • Connecting growing places that enhances links between our fastest growing places and business clusters England's Economic Heartland priorities include: • Improving quality of life and wellbeing through a safe and inclusive transport system • Achieving net zero carbon emissions from transport no later than 2050	**Key challenges and issues related to this objective are:** **Improving Safety for All:** Pedestrian, cyclist and horse rider safety is shown to be a particular issue in Great Yarmouth and Lowestoft as the A47 divides the community. More than 25% of accidents on this section of the A47 include a vulnerable road user. Pedestrian and cycle routes, including the National Cycle Network are divided by the A47 and A11, requiring the need for either signalised or unmarked crossings of vulnerable road users.

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	**Improve conditions and facilities for freight drivers travelling between the region's international gateways** that supports economic growth associated with the region's major ports, airports and distribution centres through providing safe and regular facilities.	The extent of this objective is route wide.	Concerns of interested parties related to road safety on: • Greater provision needed for alternative HGV parking and freight facilities • Lack of suitable diversions, particularly for HGVs on A47 and A11 • A12 Diversion routes travel on unsuitable roads through urban areas	Transport East's priorities include: • Connecting growing places that enhances links between our fastest growing places and business clusters • Energising coastal and rural communities by providing a sustainable coast for the 21st century and supporting the region's productive rural communities and attracting visitors all year round • Unlocking international gateways for better connected ports and airports to help UK businesses thrive and boosting the nation's economy England's Economic Heartland priorities include: • Efficient movement of people and goods through the region and to/from international gateways • Supporting the regional economy	**Key challenges and issues related to this objective are:** **Improving Safety for All:** Freight driver facilities and laybys are infrequent on the route and in a 'critical' state. **Network Performance:** With four major ports located on the East Anglia coast making up 10% of national freight by volume and two international airports freight plays a major role on the route, with some sections of the route (such as the A47 near Wisbech and the A12) seeing HGVs make up nearly 15% of total traffic. **Growing the Economy:** Over recent years the number of HGV drivers in the UK has fallen (dropping 53,000 nationally in four years), this is due to a number of reasons but among those given is the reduction in facilities for drivers, such as designated rest stops
D	**Improve communications to better inform drivers** of incidents to reduce delay and uncertainty surrounding journey time reliability to drivers and improve their end-to-end journey experience to support the regional and national economy	The extent of this objective is route wide.	Concerns of interested parties related to road safety on: • Work with local Highway Authorities for improved communication regarding information signage provision and real time information/ network management	Transport East's priorities include: • Connecting growing places that enhances links between our fastest growing places and business clusters • Unlocking international gateways for better connected ports and airports to help UK businesses thrive and boosting the nation's economy England's Economic Heartland priorities include: • Efficient movement of people and goods through the region and to/from international gateways • Improving quality of life and wellbeing through a safe and inclusive transport system	**Key challenges and issues related to this objective are:** **Network Performance:** There are unreliable journey times at sections on the route including: • A12 approaching Copdock Interchange • A120 between Braintree and Marks Tey • A12 around Chelmsford • A47 between Norwich and Lowestoft **A Technology Enabled Network:** The technology provision on the route is a known issue, plans to implement and upgrade the technology on the A12 are currently on hold, but there are currentlyno schemes in the pipeline that would address this issue. Most technology provision on the route is not connected to the National control system. the lack of technology on the route doesn't show customers their options if there is an incident, some sections of the route are shown to have unreliable journey times as a result.

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 sustainable growth of the East Anglian Coast and International Gateways** that supports the development of international gateways (including the ports of Felixstowe, Ipswich, Harwich, Great Yarmouth and Lowestoft and Stansted and Norwich airports), offshore energy and year round tourism	The route provides access to key global gateways with significance to the UK's national economy, including Stansted Airport and the ports of Felixstowe, Ipswich, Harwich, Great Yarmouth and Lowestoft. The SRN also help to provide access to the coasts of Essex, Norfolk and Suffolk, key tourism hubs within the UK.	Concerns of interested parties related to sustainable growth on: • Need to improve connections to the international gateways in the region (ports and airports) • Inconsistent route standards with single carriageway sections causing major capacity constraints	Transport East's priorities include: • Connecting growing places that enhances links between our fastest growing places and business clusters • Energising coastal and rural communities by providing a sustainable coast for the 21st century and supporting the region's productive rural communities and attracting visitors all year round Unlocking international gateways for better connected ports and airports to help UK businesses thrive and boosting the nation's economy England's Economic Heartland priorities include: • Efficient movement of people and goods through the region and to/from international gateways • Supporting the regional economy	**Key challenges and issues related to this objective are:** **Network Performance:** Congestion issues identified at various sections of the SRN along the route, particularly on the A47, A12, and A120 as well as A11 near Thetford which causes issues for the movement of goods and people to/from the east coast and has knock on effects for freight and tourism. **Growing the Economy:** There are inconsistent route stands along the route, particularly on the A47, causing capacity constraints. Seasonality flows up to 25% higher in Summer compared to January
F	**Support sustainable growth in key areas and levelling up for deprived rural and coastal communities** that improves connectivity to key developments including proposed housing and business growth enabling residents to better connect to jobs and services and supports the continued economic growth of more deprived areas.	The East of England is home to nearly 6.3 million people and supports over 3.2 million jobs. The route will play a key role in supporting growth particularly in key areas such as international trade, tourism, offshore.	Concerns from interested parties re: • Improved connectivity for rural communities to support	Transport East's priorities include: • Connecting growing places that enhances links between our fastest growing places and business clusters • Energising coastal and rural communities by providing a sustainable coast for the 21st century and supporting the region's productive rural communities and attracting visitors all year round • England's Economic Heartland priorities include: • Supporting the regional economy	**Key challenges and issues related to this objective are:** **Growing the Economy:** The East of England contains a number global gateways with significance to the UK's national economy, including Stansted airport and the ports of Felixstowe, Ipswich, Harwich, Great Yarmouth and Lowestoft. The region also contains areas of significant deprivation (IoMD and Levelling up index supports this), particularly in rural and coastal communities. **Improved Environmental Outcomes:** According to Transport East, the East of England has among the highest per-capita carbon emissions in the UK, with transport responsible for 41% of the region's carbon emissions.

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	**Be a better neighbour by protecting environmentally sensitive sites and improving environmental conditions for residents impacted by the SRN** that minimises impacts at environmentally important locations and supports improved air quality and noise conditions.	The route passes through or is in close proximity to a number of sensitive and protected environmental assets, including ecological assets in the Thetford Forest Special Areas of Conservation and Special Protection Areas, as well as protected landscapes in The Broads National Park and Dedham Vale Area of Natural Beauty (AoNB).	Concerns from interested parties re: • Ensure the network responds to net zero carbon and environmental ambitions	Transport East's priorities include: Decarbonisation to net zero by working to achieve net zero carbon emissions from transport England's Economic Heartland priorities include: Achieving net-zero carbon emissions from transport no later than 2050, with an ambition to reach this by 2040	**Key challenges and issues related to this objective are:** **Improved Environmental Outcomes:** The East of England route passes through or in close proximity to a number of sensitive and protected assets. The route also passes in close proximity or through a number of populated areas, where roads can have negative impacts on residents. The A47 passes in very close proximity to the Wisbech AQMA. There are a large number of Noise Impact Areas immediately adjacent to the A12 between the M25 and Ipswich, the A120 between Braintree and Colchester, and the A47 between Great Yarmouth and Lowestoft.
H	**Increase the resilience of the A47 and A12 to future adverse weather events** that supports reliable journeys for road users through reducing the impact of adverse weather events on route.	The route passes through or is in close proximity to a number of sensitive and protected environmental assets. Areas affected include: • A12 South of Chelmsford • A47 through Broads National Park • A47 through Great Yarmouth and Lowestoft • A47 through Fen flood plains • A12 through Dedham Vale	Concerns from interested parties re: Improved resilience of the network around safety, congestion and flooding allowing consistent travel year round	Transport East's priorities include: • Decarbonisation to net zero by working to achieve net zero carbon emissions from transport • Connecting growing places that enhances links between our fastest growing places and business clusters England's Economic Heartland priorities include: • Enabling the efficient movement of people and goods through the region and to/from international gateways	**Key challenges and issues related to this objective are:** **Network Performance:** The East of England route passes through the flood plains of a number of rivers and low-lying regions of East Anglia. Some parts of the route already experience issues with surface water flooding during adverse weather due to insufficient drainage. Locations with flooding along route include: • A12 South of Chelmsford • A47 through Broads National Park • A47 through Great Yarmouth and Lowestoft • A47 through Fen flood plains • A12 through Dedham Vale

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 East of England 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 they will be refined in our final Route Strategy Overview Report, published alongside our RIS3 *Strategic business plan* and *Delivery plan* for 2025-2030.

Alignment with government objectives

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

Improving safety for all

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

Network performance

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

Improved environmental outcomes

We are continuously working to ensure our roads work more harmoniously with the communities that live alongside them and the environments that surround them. We embed environmental considerations into all our activities, ranging from infrastructure design to scheme delivery and ensuring we meet our statutory obligations, and the way we manage and operate our network. In developing our intervention programmes, we will consider a broad range of interventions including technology enabled solutions and integration with other operators' networks as we understand the gravity of the climate situation and are committed to playing 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 a properly maintained, future-ready road network, that is fit to support the transition to electric vehicles, is key to reducing emissions from transport
- This programmatic coordinated delivery approach will act as a catalyst for: production management, off-site construction, reducing network disruptions, unlocking economies of scale, and supporting delivery of Net Zero targets
- It will also help us understand how interventions should be delivered, either through grouping or as standalone projects
- We expect this approach will create opportunities for increased efficiencies, enabling us to deliver more within our funding. We also expect this approach to help us support 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 (SRN) is a significant economic asset for the UK and is essential for people to access jobs, and for businesses and logistics firms moving goods around the country. Our regional planning teams continue to work closely with local planning authorities to support sustainable growth and development aspirations, including integration with other modes. We also continue to work with businesses to understand their needs such as quality lorry parking facilities and ensuring reliable and resilient integration with ports, airports and rail terminals through which we access global markets. The SRN also has a role in achieving the government's moral, social and economic programme of levelling up the United Kingdom. Our forward intervention programme will seek to support the growth agenda where possible and appropriate.

Managing and planning the SRN for the future

We recognise that our network is complex and varied and requires careful stewardship to keep it in good condition. Our ongoing maintenance programme is essential to safety and keeping our roads open, while our renewals activity allows us to maintain, safeguard and modernise all our assets, and provide increased resilience in relation to extreme weather. Research and data help us to understand what our network needs over the short and long term and to inform our planning. We continue to be 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 strategic road network 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 which 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 22 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.

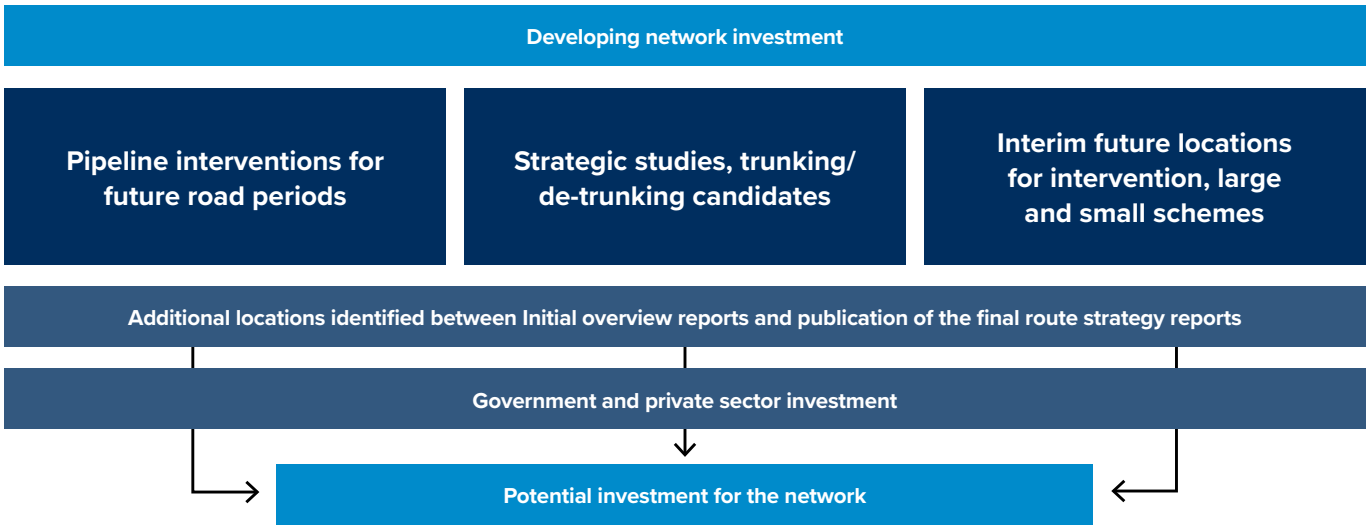


Figure 22: Process to identify potential investment on the network

Types of investment and funding sources

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

- RIS Funding – a funding stream administered by National Highways, set by the Government's publication of the RIS:
  - RIS2 Committed Schemes are committed by DfT to be delivered over 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 (2015-2020) 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 that may be made available to National Highways during the third road period as part of the wider RIS settlement, focused on making improvements that will make the biggest difference and deliver lasting benefits
- Other external sources of funding for delivering infrastructure enhancements on, or close to, the SRN including government, third parties, private sector developments, and inward investment

RIS2

The following schemes are committed for the second road period (2020-2025) on the East of England route:

Scheme number	Scheme	Description	Start of works	Open for traffic
Committed for the second road period (2020-2025)				
1	A12 Chelmsford to A120	Widening the A12 to three lanes between junction 19 (Chelmsford) and Junction 25 (A120 Interchange) to ease congestion and cope with increasing traffic demands. Through this scheme we aim to improve safety, reduce congestion and improve journey time reliability. We aim to support planned economic and housing growth and provide a safer alternative for walkers, cyclists and horse riders.	2023-24 Q4	Road Period 3
2	A47 Blofield to North Burlingham	Upgrade of the A47 between Blofield and North Burlingham to dual carriageway to ease congestion and support economic growth in the area. Through this scheme we aim to improve safety and reduce collisions, reduce delays and improve journey time reliability as well as help sustainable economic growth. We aim to improve amenities for walkers and cyclists.	2022-23 Q4	2024-25
3	A47 Great Yarmouth Junctions	Improvements of the Vauxhall and Harfrey's roundabouts in Great Yarmouth to reduce congestion and improve safety in the area. Through this scheme we aim to improve safety and reduce collisions, reduce delays and improve journey time reliability. We aim to increase the junction's resilience and improve amenities for walkers and cyclists.	2023-24 Q4	2024-25
4	A47 North Tuddenham to Easton	Upgrading the A47 between North Tuddenham and Easton in Norfolk to a dual carriageway. This will complete the dual carriageway between Norwich and Dereham, supporting economic growth and easing congestion in the area. Through this scheme we aim to improve road safety, reduce congestion and delays, whilst also improving journey time reliability. We also aim to support sustainable economic development and help the road to cope with incidents.	2022-23 Q4	2024-25
5	M25 Junction 28	Upgrading junction 28 of the M25 between the M25 and the A12 in Essex. Through this scheme we aim to increase capacity and reduce congestion whilst improving safety and traffic flow. This scheme also aims to improve reliability and minimise the impact of air and noise pollution, whilst supporting development and economic growth.	2023-24 Q1	Road Period 3
6	A47 Thickthorn Junction	Improvement of the junction between the A47 and the A11 by adding two new connections to ease congestion. Through this scheme we aim to improve road safety, reduce congestion and support road resilience. We also aim to support regional housing and economic growth, consider local communities and their access and provide a safer route between communities for walkers, cyclists, horses riders and other non-motorist groups. This improvement will aim to help the environment by minimising adverse effect, and where possible, deliver benefits.	2022-23 Q4	2024-25
7	A47 Wansford to Sutton	We're upgrading the A47 between Wansford and Sutton to dual carriageway to improve safety and ease congestion. Through this scheme we aim to improve road safety, including a safer route between local communities for walkers, cyclists, horse riders and other non-motorised users, reduce congestion, improving journey time reliability and contribute to sustainable economic growth.	2022-23 Q4	2024-25

RIS4 pipeline

The following uncommitted schemes are in the pipeline for consideration for inclusion in the fourth road period (2030-2035) on the East of England route:

Scheme number	Scheme	Description
1	A11 Fiveways Junction	Upgrading the A11 Fiveways junction, a roundabout where the A11 meets the A1065 and the A1101 near Barton Mills in Suffolk.
2	A120 Braintree to A12	A newly improved route which would create a modern dual carriageway connecting Braintree and the A12. No decision has been made on the A120 Braintree to A12 scheme and any updates will be set out in due course.
3	A12 / A14 Copdock Interchange	We are considering the proposed improvement of the A14 Junction 55 Copdock Interchange as part of National Highways' continued investment in the East of England.
4	A47 / A1101 Elm Road Junction	In development.

Other notable schemes

On the East of England route, in addition to the committed schemes listed above, there are other notable schemes as follows:

- Safety Improvements on A47 for North Lowestoft Garden Village
- A47/Broad End Road Project, which forms part of the Wisbech Access Strategy by Cambridgeshire and Peterborough Combined Authority[33]
- The Tendring/Colchester Border Garden Community will be connected to the A120 via a new junction and link road, and rapid transit system
- The Norwich Western Link which proposes a new section of dual carriageway to connect the Broadland Northway (formerly known as the Northern Distributor Road) between the A1067 and the A47 in the west of Norwich. This has been identified for potential acceleration as result of the Government's Growth Plan 2022

33 Cambridge and Peterborough Combined Authority, Wisbech Access Strategy. https://cambridgeshirepeterborough-ca.gov.uk/what-we-deliver/transport/roads/wisbech-access-strategy/

Strategic studies, trunking and de-trunking

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

There are no strategic studies identified within the East of England route.

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[34]. 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 has produced a shortlist of 18 trunking and two de-trunking candidates, identified following the draft RIS2 public consultation in 2018, for us to assess desirability and viability of asset transfer. De-trunking is the process of returning a National Highways road to the local highway authority control and vice versa for trunking. These candidates were put forward by a range of external stakeholders including Local Authorities, Local Enterprise Partnerships and Chambers of Commerce, then shortlisted by DfT. There is ongoing work to review the assessment evidence and recommendations. By autumn 2022, government ministers are expected to announce which candidates will progress to the detailed development stage, which will be led by National Highways and incorporated in the forward study programme and wider RIS 3 process.

Locations identified through route strategies for future investigation

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

To supplement this, as part of the route strategies process outlined in this document, National Highways has used cluster analysis to identify further locations for future investigation and undertaken an exercise to align these locations to the route objectives for the East of England 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 reports, additional data from the regional traffic models will also be considered to enable the identification of locations for further investigation in future roads periods.

Further development of any proposed intervention 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.

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

Route strategies and regional traffic models

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

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

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

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

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

Identified locations for future investigation and collaboration

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

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

Potential non-road interventions:

- Supporting wider network initiatives to improve the customer experience, such as provision and enhancements of facilities for the freight industry; and electric vehicle charging
- Exploiting technology to improve safety and network operation, including roll out of connected corridors
- Delivering a portfolio of measures to encourage active travel
- Making environmental enhancements to minimise the impact of the SRN on surrounding communities.
- Encouraging modal integration and influence 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[35] that will not be in construction at the end of RP2, as well as the RIS4 pipeline
- 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 low safety performance (International Road Assessment Programme 1-star and 2-star roads) along selected all-purpose trunk road corridors.

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

Table 3 and Figure 23 show the areas identified for further investigation, where interventions at these locations have the potential to help us achieve the majority of route objectives.

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

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

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

Table 3: Areas of interest for further investigation

Area location	Area of interest	Area issues	Now	Future road periods
		A47		
A47 between Wansford, Peterborough and Wisbech	**A**	This section of the A47 experiences issues with **collisions, reliability** as well as locations with higher **peak hour, seasonal and average delay,** particularly around Peterborough and Wisbech. This is forecast to worsen by 2031. Receptors along the A47, particularly this section and around Peterborough, may experience adverse air quality and noise impacts.	✓	✓
A47 between Tilney High End and Swaffham	**B**	This section of the A47 to the south-west and east of Kings Lynn has **localised problems with collisions,** as well as higher peak hour and average delay. This is forecast to worsen by 2031.	✓	✓
A47 between Swaffham and Dereham	**C**	There are a mix of **safety concerns and collisions** as well as **peak hour, average, non-recurrent, seasonal and total delay** concerns on this stretch of the A47 particularly near Dereham. Receptors in close proximity of the A47, may experience adverse air quality and noise impacts. Issues are compounded **by local growth aspirations** in Dereham which are in the vicinity of the A47.	✓	✓
Acle Straight	**D**	There are a mix of **safety concerns and collisions** as well as **peak hour, average, non-recurrent, seasonal and total delay** concerns around on this stretch of the A47. This impacts receptors which may also experience adverse noise and air quality impacts in close proximity to the A47. Issues are compounded by **local growth aspirations** which are in the vicinity of the A47.	✓	✓
A47 between Great Yarmouth and Lowestoft	**E**	There are **safety concerns** throughout much of this section of the A47, with higher collision rates near Great Yarmouth, Gorleston-on-Sea, Hopton-on-Sea and Lowestoft which typically involve a higher proportion of motorcyclists. There are also **peak hour, average, non-recurrent, seasonal and total delay** issues on this section, between Great Yarmouth and Lowestoft. Receptors along the A47, particularly this section including Gorleston-on-Sea and Lowestoft, may experience adverse air quality and noise impacts. There may be **elevated incidences of flooding** along the route, issues which are compounded by local growth aspirations in the vicinity of the corridor along the coast.	✓	✓

Area location	Area of interest	Area issues	Now	Future road periods
		A11		
A11 Thetford	**F**	There are **peak hour, average, non-recurrent, seasonal and total delay** issues on this section of the A11 around Thetford. This is forecast to worsen by 2031. Receptors along this section of the route may experience adverse impacts on **air quality and noise,** notably in Thetford. There is also an **elevated incidence of flooding** along the route. Issues are compounded by local **growth aspirations** in the vicinity of Thetford, with **severance issues** between Thetford and Thetford Forest Park.	✓	✓
		A12		
A12 Stanway, Colchester to Langham	**G**	This section of the A12 experiences issues with **reliability** as well as locations with **higher peak hour, seasonal and average delay,** particularly around Colchester and Dedham, and East Bergholt. Adverse **air and noise quality** impacts may be experienced along the A12 where it passes **close to large numbers of receptors** around Colchester.	✓	✓
A12 Around Chelmsford	**H**	There are a mix of **safety concerns and collisions** as well as **peak hour, average, non-recurrent, seasonal and total delay** concerns on this stretch of the A12 around Chelmsford. This impacts on **local communities** and may experience **noise and air quality issues,** particularly where there are a **higher number of receptors** within proximity of the A12. Issues are compounded by **local growth aspirations** in Chelmsford which are in the vicinity of the A12. *Note M11 Junction 8 to the west of Chelmsford is encompassed by the London to Leeds Route Strategy Overview Report.*	✓	✓
		A120		
A120 Colchester to Harwich	**I**	This section of the A120 experiences issues with **reliability** as well as locations with **higher peak hour, seasonal and average delay,** particularly around Colchester and Dedham and East Bergholt. This is forecast to worsen by 2031 particularly with Free Port East traffic. Adverse **air and noise quality** impacts may be experienced along sections of the A120 where it passes close to a **large number of receptors** around Great Bromley, Great Oakley and Dovercourt near Harwich.	✓	✓
A120 Braintree Bypass	**J**	There **is peak hour, average, seasonal and total delay** issues on the A120 around Braintree. Receptors along this section, particularly around Braintree, may experience adverse air quality and noise impacts. There is also an **elevated incidence of flooding** along the route. Issues are compounded by **local growth aspirations** in the vicinity of Braintree.	✓	✓

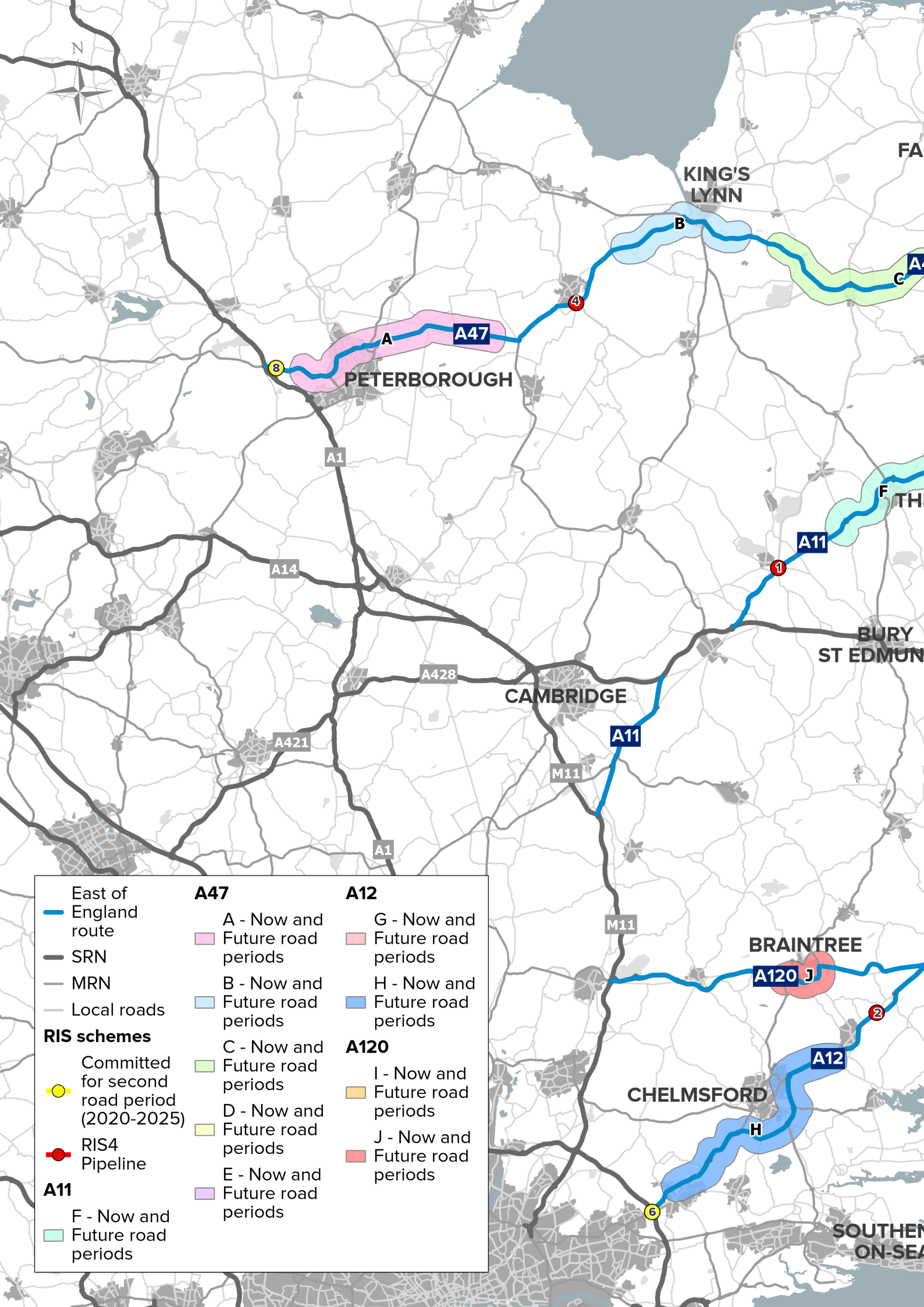

N
KING'S LYNN
PETERBOROUGH
A47
A
B
C
A1
A14
A428
A421
M11
CAMBRIDGE
A11
F
BURY ST EDMUN
BRAINTREE
A120
J
A12
CHELMSFORD
H
East of England route
SRN
MRN
Local roads
RIS schemes
Committed for second road period (2020-2025)
RIS4 Pipeline
A11
F - Now and Future road periods
A47
A - Now and Future road periods
B - Now and Future road periods
C - Now and Future road periods
D - Now and Future road periods
E - Now and Future road periods
A12
G - Now and Future road periods
H - Now and Future road periods
A120
I - Now and Future road periods
J - Now and Future road periods

Figure 23: Areas of interest for further investigation

What happens next

08 Next steps

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

Alignment

They also align with the National Highways *Connecting the country: Our long-term strategic plan to 2050*[36] 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/

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

Glossary of terms

Term	Acronym	Description
Active users and active modes of transport		Active users and active modes of transport refers to walkers, cyclists and horse riders.
Air quality management area	AQMA	If a local authority identifies any locations within its boundaries where the Air Quality Objectives are not likely to be achieved, it must declare the area as an Air Quality Management Area (AQMA). The area may encompass just one or two streets, or it could be much bigger. The local authority is subsequently required to put together a plan to improve air quality in that area - a Local Air Quality Action Plan.
Area of Outstanding Natural Beauty	AONB	An area of outstanding natural beauty (AONB) is one of the classes of land protected by the Countryside and Rights of Way Act 2000 (CROW Act). It protects the land to conserve and enhance its natural beauty.
All Lane Running	ALR	All Lane Running (ALR) motorways apply controlled motorway technology, permanently converting the hard shoulder as a running lane, and feature emergency areas.
A-roads		Major roads intended to provide large-scale transport links between regional towns and cities.
Assets		National Highways assets include our infrastructure such as pavements, structures and tunnels
At-Grade Junction		An at-grade junction is a junction where two or more roads converge, diverge, meet or cross at the same height, as opposed to an interchange, which uses bridges or tunnels to separate different roads.
Clean Air Zone	CAZ	A clean air zone (CAZ) defines an area where targeted action is taken to improve air quality, and resources are prioritised and co-ordinated to deliver improved health benefits and support economic growth.
Collisions		The severity of a collision is based on the severity of the most severely injured casualty and is broken down into: • Slight collision: One in which at least one person is slightly injured but no person is killed or seriously injured • Serious collision: One in which at least one person is seriously injured but no person (other than a confirmed suicide) is killed • Fatal collision: A collision in which at least one person is killed

Term	Acronym	Description
Department for Transport	DfT	Department for Transport (DfT) plan and invest in transport infrastructure to keep the UK on the move. DfT work with agencies and partners to support the transport network that helps the UK's businesses and gets people and goods travelling around the country.
Design-Build-Finance-Operate arrangements	DBFO	With a design-build-finance-operate arrangement, the private party provides financing and design, then builds and operates the facility. The public partner provides funding while the project is being used or is active.
Diversionary Routes		National Highways agreed diversion routes represent the recommended routes for road users when a section of road has been closed.
Dynamic Hard Shoulder	DHS	Dynamic Hard Shoulder Running (DHS) motorways apply the controlled motorway technology and temporarily increase capacity by utilising the hard shoulder, and feature emergency areas. The hard shoulder is some of the time, but not always, used as a live running lane, with electronic signs to guide drivers when it is safe to use for live running.
Economic opportunity areas	EOAs	EOAs were developed to give us a more refined understanding of the types of priority economic growth opportunities that exist around the SRN and around the wider road and broader transport network. They are defined in terms of their common economic function and the spatial features of the location. These key growth areas are grouped by broad 'theme' (such as international gateways, multi-modal transport hubs, tourism destinations and housing locations) and their relative reliance on the SRN.
Freeport		Freeports are special areas within the UK's borders where different economic regulations apply. Freeports in England are centred around one or more air, rail, or seaport, but can extend up to 45 kilometres beyond the port(s)
Heavy Goods Vehicle	HGV	A heavy goods vehicle (HGV) is a large vehicle intended for the transportation of heavy loads.
Growth Boards		Growth Boards have been established by some counties as a joined-up way of managing local future growth and supporting economic recovery.
International connectivity		Transport connectivity of the United Kingdom with Europe and the rest of the world.
In-vehicle Technology		This can be in-car systems that typically take the form of a touchscreen or display that is mounted on the dashboard. It can be a collection of hardware and software, which can provide information, data and connectivity to infrastructure to support the customer experience. It can also be the data and technology capability to enable the operation of the car (this might be connected services, autonomous capability, parking sensors, cameras etc.). It can be any technology within a vehicle.

Glossary of terms

Term	Acronym	Description
Levelling up		Levelling up is a moral, social and economic programme for the whole of government. It places emphasis on ensuring no community is left behind.
Local Road Network		England's road network consists of motorways, major 'A' roads, and local classified and unclassified roads. The vast majority of motorways and major 'A' roads for the strategic road network (SRN) and are managed by National Highways. All other roads are managed by local authorities and make up the local road network (LRN)
Major Road Network	MRN	The major road network (MRN) is the middle tier of England's road network, comprising the busiest and most economically important local authority A-roads.
National Highways Licence		The Licence sets out the Secretary of State's statutory directions and guidance to National Highways.
Noise Action Plans		Noise action plans provide a framework to manage environmental noise and its effects. They also aim to protect quiet areas in agglomerations (large urban areas) where the noise quality is good. Noise Action Plans provide a framework for the local management of the Important Areas.
Noise Important Areas		Noise Important Areas (NIAs) for roads and railways are based upon the strategic noise maps results and are produced in line with the requirements set out in the noise action plans.
Office of Rail and Road	ORR	The Office of Rail and Road (ORR) is the independent safety and economic regulator for Britain's railways and monitor of National Highways
Park and ride		A park and ride offers parking with public transport connections that allows commuters and other people heading to city centres to leave their vehicles and transfer to bus, rail or car share for the remainder of the journey.
Platooning		Heavy Goods Vehicle (HGV) platooning is the use of technology to allow HGVs to travel safely in close proximity at speed with the driver of the lead vehicle controlling the speed, acceleration and braking of the whole 'platoon'.
Receptor (Air quality and Noise)		Location which is sensitive to noise/air quality issues
Regional Traffic Model	RTM	National Highways has a suite of five regional traffic models (RTMs) covering England's SRN. The models allow us to identify future performance and delay on the network, assisting with the development of the route strategies
Reliability		Reliability is the difference between the typical travel time, allowing for recurring delays, and the observed travel time. This measures the amount of variation due to unexpected variations or unplanned events. Like delay, it is measured in seconds per vehicle per mile. It is a concern for most drivers, but particularly affects just-in-time freight traffic and other strategic journeys.
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.

Term	Acronym	Description
Road period		The defined period of time over which the Government gives a funding commitment. The length of a road period will be specified at the beginning of the RIS development process. Road periods will be multi-year in order to provide the supply chain with increased certainty of investment and intent. Based on current practice within the other infrastructure sectors, it is expected that road periods will continue to be five years in length, though the actual length will be decided by the Government of the day.
Route objectives		Objectives for each route, informed by engagement and analysis, to support the current and future needs of customers and neighbours.
Safe System approach		The Safe System is the current best practice safety culture in road safety, developed over many years and derived most notably from the Swedish Vision Zero and Dutch Sustainable Safety strategies. A best practice road safety culture approach based on the principles that humans make mistakes which could lead to serious injury or death for which it is a shared responsibility of the road user, road managers, vehicle manufacturers, etc. to take appropriate actions to ensure road collisions do not lead to serious or fatal injuries.
Seasonal delay		Seasonal delay refers to the difference between the average afternoon peak delay for Fridays in August 2019 (high demand in summer holidays) and the average delay during very low demand periods (in this case, Christmas day is used). This measure is designed to reflect the parts of the network that do not appear to have a problem on average over the year but have seasonal peaks. Seasonal delay is of interest to tourist traffic, particularly people travelling to airports, or other destinations where arriving later than intended could have significant implications.
Severance		The separation of people from facilities and services they use within their community.
Sites of Special Scientific Interest	SSSIs	A Site of Special Scientific Interest (SSSI) is the land notified as an SSSI under the Wildlife and Countryside Act (1981), as amended. SSSI are the finest sites for wildlife and natural features in England, supporting many characteristic, rare and endangered species, habitats and natural features.
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

Glossary of terms

Term	Acronym	Description
Spatial planning		Spatial planning decides how land should be used or protected. It also organises, designs and makes decisions on where new homes, roads and other infrastructure should be built. Spatial planning aims to make places attractive, safe and environmentally friendly. National Highways is a statutory consultee in the planning system and we encouraged others to seek early advice from us if their development proposal is likely to impact the strategic road network.
Special Areas of Conservation	SACs	A Special Area of Conservation (SAC) is the land designated under Directive 92/43/ EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora.
STATS19		Data on road traffic casualties on the roads in Great Britain are collected via the STATS19 process. These statistics are collected by police forces, either through officers attending the scene of incidents, from members of the public reporting the incident in police stations after the incident, or more recently online and then validated and published annually by DfT. STATS19 road traffic collision and casualty data is published annually by DfT in the Autumn and provides details of the previous calendar year. These reports have used the data available at the time of analysis, 2015-2018.
Statutory consultee		Statutory consultees are those organisations and bodies, defined by statute, which local planning authorities are legally required to consult before reaching a decision on relevant planning applications.
Strategic Rail Freight Interchange		A large multi-purpose rail freight interchange and distribution centre linked into both the rail and road system.
Strategic Road Network	SRN	The strategic road network (SRN) covers more than 4,500 miles of motorways and major A-roads.
Strategic Traffic / Strategic journeys		Long distance traffic / journeys
Sub-national Transport Bodies	STBs	Sub-national Transport Bodies (STBs) have a key role in formulating transport strategy and identifying investment priorities at the sub-national level, including for highways. There are seven STBs in England, which are tasked with developing transport strategies and studies for their region. Through the development of their evidence bases with their constituent local authorities and Local Enterprise Partnerships, their work highlights multi-modal issues, need and opportunities, with investment priorities provided to the Secretary of State for Transport.
Transport-related social exclusion		Where limited access to transport or other issues with the transport system means that people cannot fully participate in society in the way they would like
Trunking / De-trunking		De-trunking is the process of returning a National Highways road to the local highway authority control and vice versa for trunking
UNESCO World Heritage Site		Inscription as a UNESCO World Heritage Site is an acknowledgement of the global significance of such places.

Term	Acronym	Description
Union connectivity		Transport connectivity between the nations of the United Kingdom.
Variable Messaging Signs		The Traffic Signs Regulations and General Directions 2016 (TSRGD) define a variable message sign as a device "...capable of displaying, at different times, two or more aspects...". These aspects may take the form of a sign prescribed by the TSRGD, a legend in accordance with Schedule 16 to TSRGD, a non-prescribed temporary sign or a blank grey or blank black face. Thus, the expression "variable message sign" (VMS) encompasses all types of variable sign from simple flap-type signs to complex light-emitting panels
Vulnerable Road User		Walkers, cyclists and horse riders

national highways

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