Department for Transport

Road Investment Strategy 2: 2020–2025

March 2020

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Presented to Parliament pursuant to section 3 of the Infrastructure Act 2015

This publication is available at https://www.gov.uk/government/publications.

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ISBN 978-1-5286-1678-2

CCS0919077812

Printed on paper containing 75% recycled fibre content minimum.

Printed in the UK by the APS Group on behalf of the Controller of Her Majesty's Stationery Office.

Photographic acknowledgements:
Department for Transport and Highways England.

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Ministerial Foreword

This Road Investment Strategy is not a blueprint for pouring concrete, laying tarmac or welding steel.

This is first and foremost a document with people at its heart.

If we are to invest £27.4 billion over the next five years on our strategic road network, it is crucial that we use this funding to improve the lives of all.

That's why a central principle in the development of this strategy was to create a road network that is safe, reliable and efficient for everyone – whether they are cyclists or drivers, passengers or pedestrians.

This document lays out how we will achieve that goal and use road investment to meet the needs of modern society – from helping businesses get their products to market smoothly, to ensuring commuters can arrive at work on time.

In doing so, our first priority is to fix the strategic roads we have today – ensuring that they are well designed, well maintained, well connected, and will continue to serve all road users well into the future.

Only where existing roads are simply not up to the job the country asks of them are we asking Highways England to develop wider, realigned or, in a few cases, wholly new roads to keep people and goods moving.

But this Strategy is not just focused on road users – it also focuses on fulfilling our obligations to communities living close to major routes and towards the natural, built and historic environments.

There is no doubt that balancing these needs with the demands of the 21st century will at times require compromise and difficult choices. But I am confident that this Strategy targets funding in a way that supports all these objectives.

This document also explores how we can use our road network as a way of levelling up the UK's economic performance and addressing social inequalities.

By carefully focusing investment to improve transport links, while ensuring we get the basics right, we can open up new educational, health, work or social horizons for people living across the country.

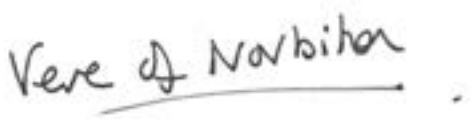
The publication of this Strategy lays out our plans for strategic road investment over the next five years.

But it also looks much further ahead as well. It sets out an ambitious vision for the shape of the network in 2050, along with the practical steps we plan to take with Highways England to turn it into a reality.

Of course, there is no crystal ball to show what the future may hold.

But by acting today we can be more confident of seizing the opportunities of tomorrow to the benefit of road users, taxpayers and the country as a whole.

Rt Hon Grant Shapps MP
Secretary of State for Transport



Baroness Vere of Norbiton
Parliamentary Under Secretary of State

Introduction

What is the RIS?

In 2014, the Government reformed the way that England's strategic roads were funded and managed. While safety remained the number one focus, the new arrangements also gave new emphasis for customer service and delivery.

Highways England was established as the steward of the strategic road network (SRN), with a remit to operate, maintain, renew and enhance our motorways and main 'A' roads to the benefit of road users, people who live next to or depend on the network, and the natural, built and historic environment.

Government committed to a five-year funding settlement, the first Road Investment Strategy (RIS1), which allowed Highways England and its supply chain to plan their work efficiently and provided the confidence needed for them both to invest in people and equipment, growing the skills and capability necessary to deliver the scale of improvements planned to the network. RIS1 invested some £17 billion in our strategic roads – not only in upgrades, but in maintenance and measures to address the effects that old roads have on nearby communities.

The Office of Rail and Road (ORR) and Transport Focus were given specific roles as independent highways monitor and watchdog respectively to ensure that Highways England does what it should, and does so efficiently, and that the interests of the road user are taken fully into account.

Now, five years later, the Government is building on the foundations of this reform with a plan to achieve more for road users, residents and businesses, natural habitats and wildlife, townscapes and landscapes.

Funding for this plan is directly linked to the money road users pay. For the first time since 1926, a new National Roads Fund (NRF) will dedicate a sum equal to all receipts from Vehicle Excise Duty for use on our most strategically important roads. Not only does this provide the security of a long-term funding stream, the link reinforces our ambition for greater customer service and responsiveness to users.

This second Road Investment Strategy (RIS2) sets a long-term strategic vision for the network. With that vision in mind, it then: specifies the performance standards Highways England must meet; lists planned enhancement schemes we expect to be built; and states the funding that we will make available during the second Road Period (RP2), covering the financial years 2020/21 to 2024/25.

In total, RIS2 commits the Government to spend £27.4 billion during RP2. Some of this will be used to build new road capacity, but much more will be used to improve the quality and reduce the negative impacts of the existing SRN, so that every part of the country will benefit.

Through this investment we want to make the network safer, more reliable, and more

sensitive to the places through which it runs. With a stronger focus on the differing needs of road users and adoption of new working practices and technologies, we want people using the network to enjoy smoother, more consistent journeys. By making the most of green infrastructure and good design, we want people living alongside the network to experience less noise, light and air pollution. And this RIS must support the Government's wider plans for decarbonising road transport.

The NRF will also provide funding to enhance the Major Road Network (MRN), the most important roads owned and operated by local highway authorities, and contribute to large local major road schemes. This investment complements the funding the Department provides for maintenance of local roads, and will help secure a consistent and coherent network of regionally-important roads that are seamlessly integrated with the SRN.

Roads are, and will remain, vital to our way of life and our SRN encompasses the roads that are most important for people to get around the country and for businesses to receive supplies and get their goods to market. Our plan will help ensure that they continue to deliver for the country.

How has RIS2 been developed?

RIS2 has been developed on the back of an extensive round of public engagement and consultation, research and evidence gathering begun in 2016. It has been the biggest exercise ever undertaken to inform national road investment and has enabled us to build a well-informed picture of the current performance of the network, future pressures on it, and the opportunities available for improvement.

While not all the issues facing the SRN can be resolved in any single RIS, the information we have gathered is helping us to build a pipeline of activity into the future so that, over time, we can realise our strategic vision.

Significant steps in the process have been Highways England's route strategies, strategic studies, *Road to Growth* and *Connecting the Country* plans; Transport Focus's research into road user priorities; and the Department's public consultation on Highways England's proposals in their Initial Report.[1] The Draft RIS published in October 2018 set out the Government's objectives for RIS2 based on the consultation and engagement at that point.[2]

During this process the sub-national transport bodies have emerged as important partners, whose strategies and studies are providing robust information on the priorities for each part of the country. We recognise the aspirations of these bodies as they progress in maturity to work even more closely on the development of the next RIS and that is something we will explore with them in the coming months.

Since publishing the Draft RIS, the Department has been working with Highways England to develop an affordable, deliverable strategy that meets the Government's objectives. ORR has provided advice on whether the emerging plans were challenging and deliverable, and the level of efficiency they represented. Our final decisions set out in RIS2 are the culmination of this work.

1 At: www.gov.uk/government/consultations/shaping-the-future-of-englands-strategic-roads-ris2
2 At: www.gov.uk/government/publications/draft-road-investment-strategy-2-government-objectives

Part 1
Strategic Vision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Sheffield (SE)
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In a changing world, where the demands on our SRN and the opportunities provided by new technology to meet those demands are developing rapidly, our strategic vision seeks to ensure that the SRN is 'future ready', whatever may emerge.

In this section we define the purpose of the SRN and the strategic role it has to play in serving the needs of road users, the communities and environmental setting through which it passes, and the country at large.

It then describes a long-term vision for what the SRN should be like in 2050 and the steps that will help us achieve it. This will give Highways England, along with its customers, suppliers and other stakeholders, a clear sense of the Government's objectives for the SRN, and a direction of travel for the way ahead across future road periods.

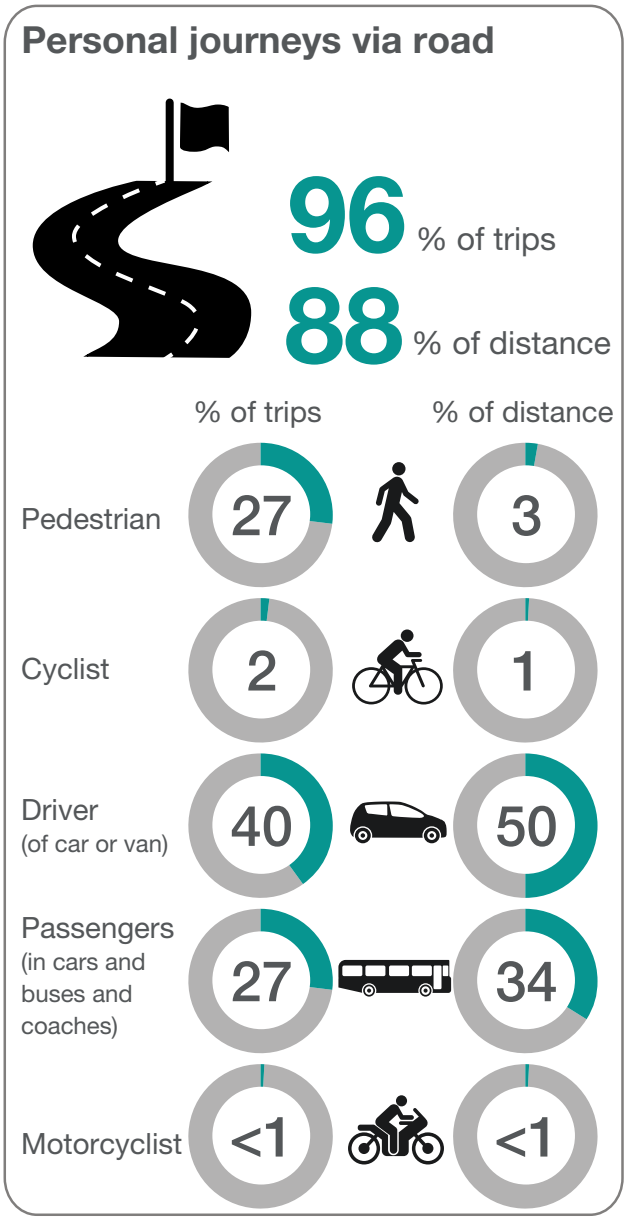
a. Making transport work

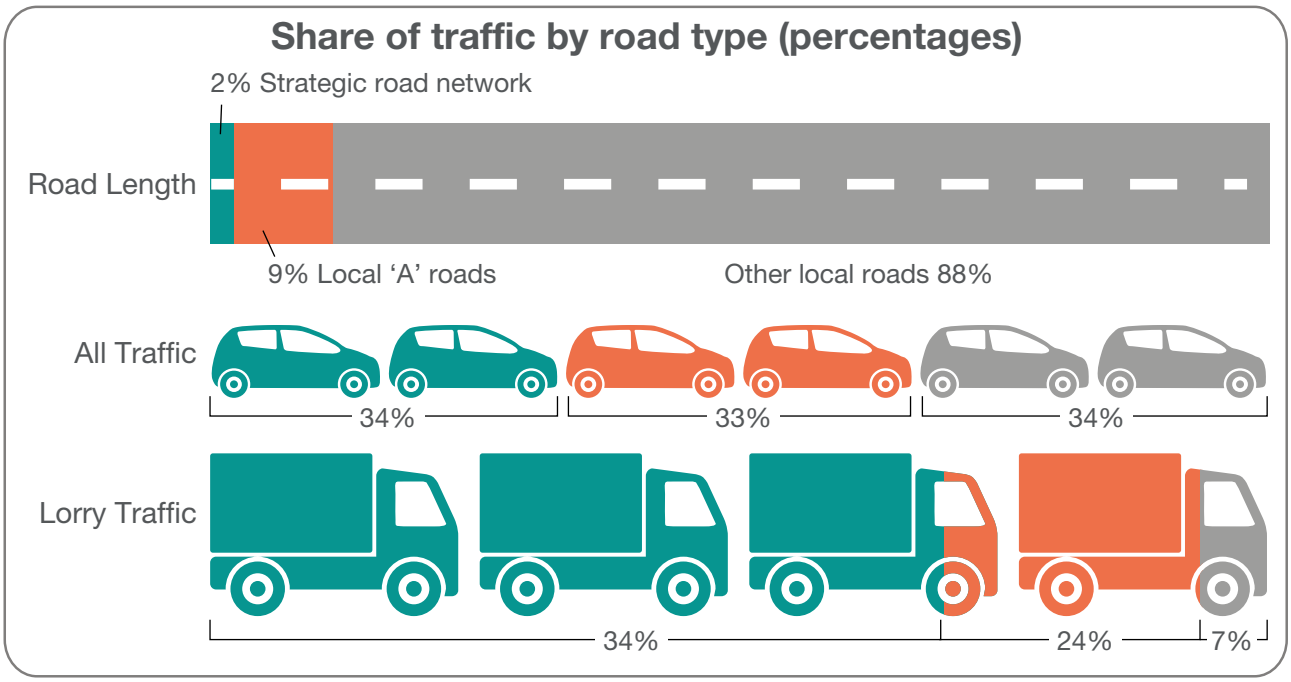
Why roads?

A good transport network is not an end in itself, rather it is the means through which people and businesses live their lives and achieve their ambitions. The provision of a safe, reliable, resilient, responsive and efficient transport network can significantly expand the opportunities for success and encourage greater ambitions. Conversely, a failing network that lacks capacity and performs poorly will limit what people can achieve.

The dramatic expansion of railway, road and aviation networks over the last two centuries each transformed the way people thought about the world and its possibilities. Containerisation and new ways of doing business have revolutionised maritime and land-based logistics. Urbanisation and modern lifestyles have inspired a resurgence in urban transit systems and cycling for work and leisure. Rapid developments in technology are changing patterns of demand for transport, but are not reducing the need or the desire to travel.

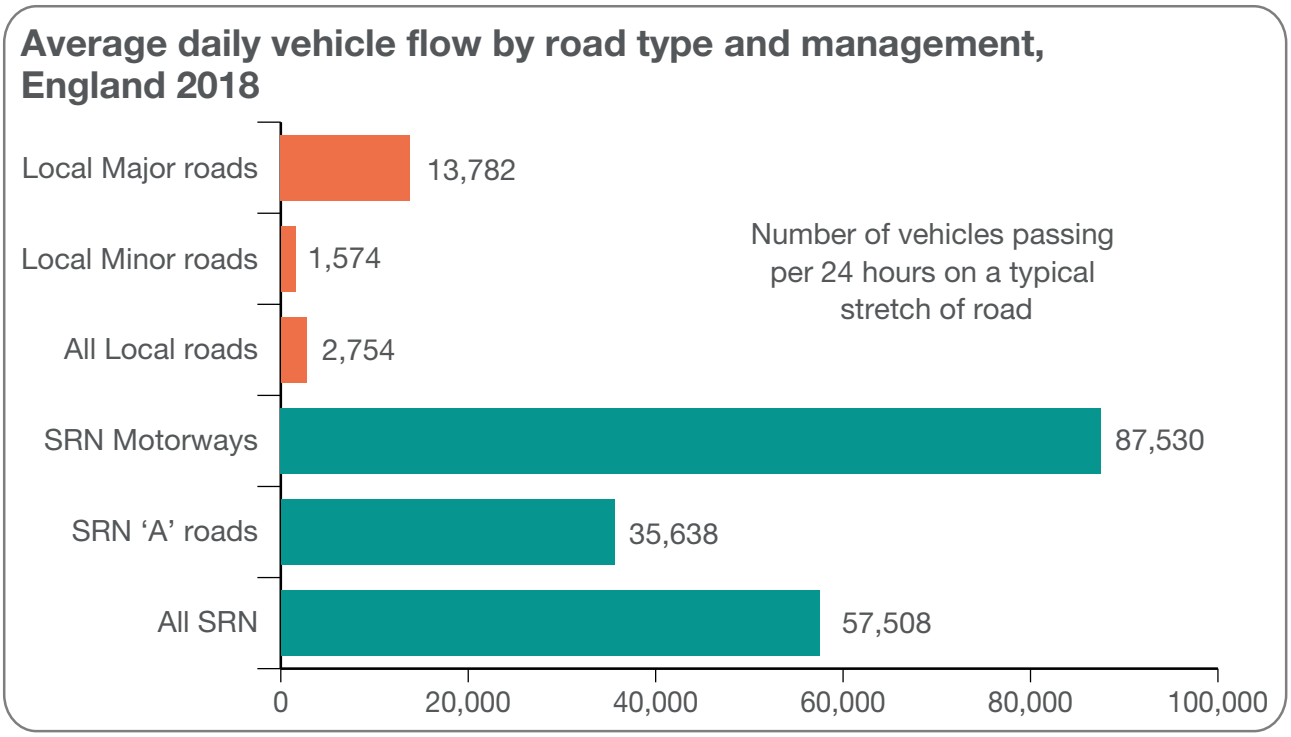
The Government is providing substantial investment across the country and across transport modes to sustain safe, reliable, resilient, responsive and efficient networks that can unlock economic and social benefits. Roads are an important part of the mix, used as they are by pedestrians; cyclists; horse-riders; motorcyclists; drivers of cars and vans; and passengers in cars, buses and coaches. In total, 96% of all personal journeys are made by these modes, amounting to 88% of distance travelled. Businesses and heavy goods vehicle (HGV)





drivers also depend on roads, with over three times the amount of goods moved by road than by rail and water combined. Put simply, we depend on roads for our way of life.

Within these totals, the SRN plays an important role for long-distance traffic, especially freight. One-third of all motor vehicle miles are made on the SRN, and that rises to two-thirds for HGVs. Traffic flows on these roads average 57,500 vehicles per day,



compared to 2,800 on local roads. Even on major local roads, average traffic flow is a quarter of that on the SRN. These journeys represent significant value for the country, enabling efficient freight logistics and underpinning many people's choices of where to live and work.

Like any transport mode, roads have an impact on the people and places around them arising from both the infrastructure itself and the vehicles using it. Investment and innovation in the use of green infrastructure[3] and new technology open up opportunities for minimising the impacts of both these elements. These include the use of modern road surfaces and place-sensitive planting of vegetation, adoption of low emission and connected vehicles, encouraging vehicle sharing and active travel modes and, in some cases, avoiding the need for travel altogether.

Roads and particularly the SRN will continue to have a significant role in enabling people and goods to move around the country, so we have to make them work for everyone, including road users and communities. Roads Reform in 2014 and our decision to hypothecate Vehicle Excise Duty raised in England from 2020, both provide a long-term commitment to investment in our most strategically important roads and a link to the money that road users pay, and will ensure that the SRN is able to play that role successfully now and into the future.

Ready for whatever the future holds

Demand for the SRN is affected by a range of demographic, economic, lifestyle, technological, and resource factors. We have to think about how these factors may affect patterns of use when deciding where to prioritise investment to ensure the SRN meets today's demands, not those of the past, and is ready for a range of possible future scenarios. In appraising RIS2, we have used Highways England's Regional Traffic Models and our most recent assessment of future demand scenarios, *Road Traffic Forecasts 2018* (RTF18).[4]

Traffic growth on the SRN is forecast to be strong and positive in all scenarios considered by RTF18, ranging between growth of 29% and 59% by 2050, driven by forecast increases in the number of car trips and trip distances, as well as increasing Light Goods Vehicle traffic. This follows a recent growth of approximately 11% in vehicle numbers on the SRN between 2013 and 2018.

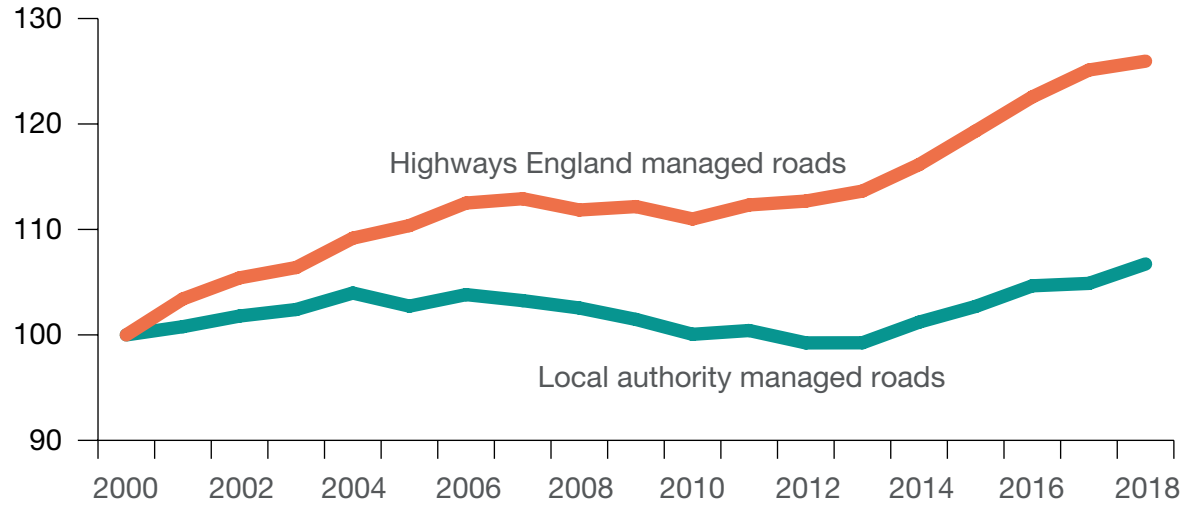
We recognise that overall trip rates for the majority of trip purposes have been declining and there is a trend of more young people not learning to drive. Thus we have explored a scenario where these trends continue out to 2050. However, these changes that would reduce demand are outweighed by the increase in journeys made by older drivers, and the expectation of a continued rise in total population. In addition, holiday trips are forecast to more than double by 2050, resulting in longer average distance car trips. As longer trips are more likely to be routed on the SRN, demand is likely to continue to grow faster than on local roads.

RTF18 also considered the possible impacts of new technology on demand. There is much uncertainty about how fast and deep new technologies will be adopted in the transport sector, and how people and

3 Strategically planned and managed green spaces and other environmental features; detailed guidance is at: publications.naturalengland.org.uk/publication/35033?category=49002

4 At: www.gov.uk/government/publications/road-traffic-forecasts-2018

Motor vehicle traffic in England by road management, 2000-2018
(Index of vehicles miles 2000 = 100)



businesses will react to them. A number of exploratory tests have been conducted around the possible impacts of Connected and Autonomous Vehicles (CAVs), but all would still produce increased road demand relative to 2015 levels, with a range of growth between 5% and 71% by 2050.

This suggests that even much greater levels of ride sharing will not outweigh the impacts of economic growth and demographic change. The rise of electric vehicles, while essential to achieving the target of net-zero carbon emissions by 2050, has the potential to encourage increased travel on our road network as the costs of driving fall. Taken together, these findings suggest that although the character of road demand is changing, it is plausible that the SRN will continue to experience traffic growth.

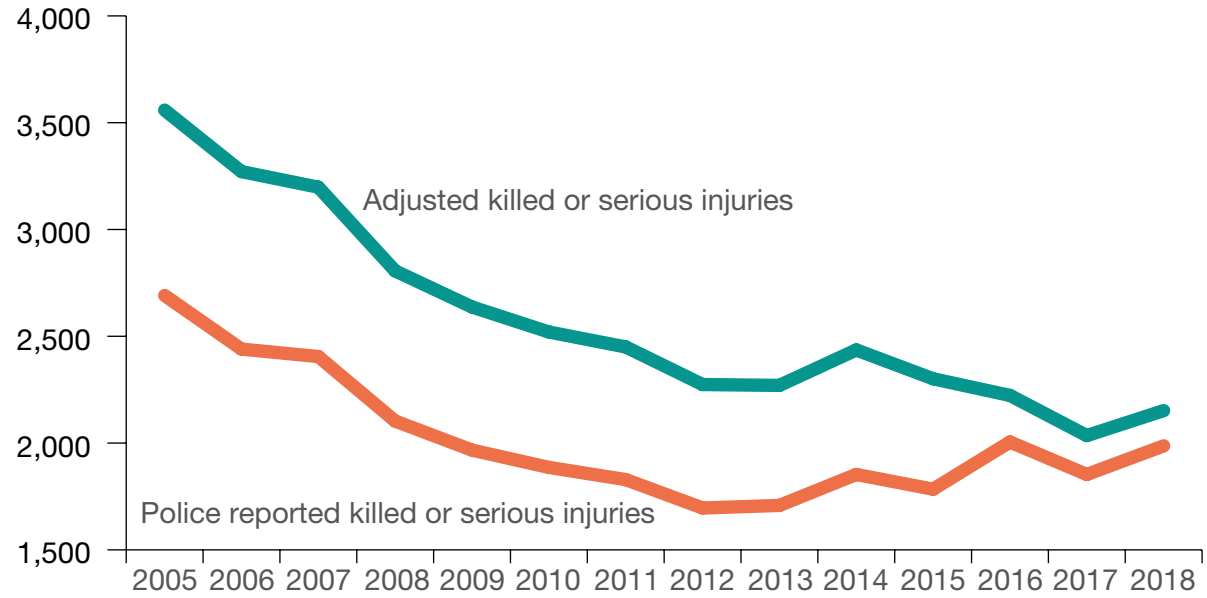
Our investment decisions need to respond accordingly if we are to maintain a network that meets what users want, in particular in terms of safety, reliability and reasonable journey times. It means that the existing network needs to be kept in good condition, with the impact of roadworks and incidents minimised, so that it is resilient. It means taking action on existing pinchpoints which will become even more congested given growth. And it means considering expansions in capacity where that is the best option to meet demonstrable need.

Our strategic vision for the SRN both responds to current traffic demands and also seeks to shape the future use of the network to support the Government's wider policy aims: promoting the importance of place; achieving net gains for the environment and contributing to a wider climate change strategy; and being at the forefront of technological change.

Progress on delivering the RIS1 Strategic Vision

This is an evolutionary process, building on good work that is already underway. The Strategic Vision in RIS1 set aspirations for a smoother, smarter, sustainable SRN. So far during the first Road Period (RP1):

People killed or seriously injured on the SRN, 2005 to 2018



- The number of people killed or seriously injured on the SRN has fallen by 6% from 2015 to 2018 (using adjusted severity figures to account for changes in reporting systems). That represents many more people alive and well today, and families not living with the trauma of loss.
- Free-flowing traffic has been supported by 98.3% lane availability and 88% of motorway incidents cleared within an hour, both ahead of target.
- Road user satisfaction has remained nearly 90%, as measured by the National Road Users' Satisfaction Survey (NRUSS)[5]. Though it is just below target, it has been achieved despite the increasing amount of work being undertaken on the network.
- The global survey of businesses about road quality presents a mixed picture. On quality of road infrastructure, the UK's rating and ranking both improved in the early years of RP1, but fell back in 2019. However, on the new wider measure of road quality and connectivity, the UK ranks 23rd and is on an upward trajectory.[6] A further round of SRN improvements, scheduled to start later this year or early in RP2, should produce improved ratings.
- Highways England has reported £848 million of efficiencies, the equivalent of all the work in RP1 and committed through RIS2 on the A1, and that it is on track to meet its target to achieve £1.2 billion of efficiencies by the end of RP1.

5 At: www.transportfocus.org.uk/research-publications/publications/national-road-users-satisfaction-survey-2018-19/

6 At: http://reports.weforum.org/global-competitiveness-report-2019/competitiveness-rankings/#series=ROADINF

- 951 Noise Impact Areas have been mitigated, which means more than 40,000 people are benefitting from reduced road noise at home.
- Ten air quality pilot studies have been completed and published on Highways England's website. Mitigation measures around the 86 pollution links are being progressed.
- Progress has been made against the Biodiversity Action Plan[7] and annually reported. A biodiversity metric was developed and trialled internally in 2018/19.
- The *Design Manual for Roads and Bridges*[8] is on track to be updated by the end of RIS1; an external sustainable development and environment action plan was released in 2018; and flagship schemes such as the £3 million Stover Park water/biodiversity project have been delivered.

This represents a solid start, especially considering 5 billion more miles are travelled on the SRN than in 2015 – more than the furthest distance from Earth to Pluto – and it is one which we aim to build on in terms of both breadth of ambition and achievement during RP2.

7 At: http://www.standardsforhighways.co.uk/ha/standards/dmrb/index.htm
8 At: www.standardsforhighways.co.uk/ha/standards/dmrb/index.htm

b. Defining the SRN

The principal purpose of the SRN is to enable safe, reliable, predictable, rapid, often long distance, journeys of both people (whether as drivers or passengers) and goods in England between our:

- Main centres of population;
- Major ports, airports and rail terminals;
- Geographically peripheral regions of England; and
- Chief cross-border routes to Scotland and Wales.

The value of the individual journeys on this network combine to deliver extensive benefits, without which life in the UK would be fundamentally poorer, for example:

- Facilitating economic growth and international trade by enabling businesses to move their goods efficiently to their customers and receive the supplies they need to maintain lean production processes.
- Helping people to choose where they want to live and work, in both rural and urban areas, giving them easier access to a wider range of homes, jobs, education, healthcare and recreation opportunities and a greater chance of enjoying a fulfilling life with friends and family.
- Strengthening the United Kingdom as a union of nations and an international trading economy, with high quality internal and external links and all parts of the country able to enjoy prosperity.

However, the SRN does not stand alone; to fulfil its purpose it must support and be supported by other transport networks. Only the busiest and most important locations, such as international gateways, will have direct access onto the SRN. Design and operation of the SRN should recognise this fact and seek to achieve seamless integration of strategic roads with these other networks.

This means that connections to the local road network, in particular the MRN, are critical for allowing access for most SRN users to or from specific locations. Such connections must balance the needs of local access and the wider ability of the network to function safety and effectively for long-distance traffic. The local road network should enable local journeys to be made efficiently and avoid creating conditions where road users hop on and off SRN routes unnecessarily.

As demand patterns change, and where new infrastructure is constructed, it is important to be ready to amend the geographic extent of the SRN, so that roads best managed at a local level to meet a communities' needs are in the hands of local highway authorities. The establishment of the MRN means that roads transferred from Highways England

control do not necessarily lose access to the NRF for enhancement funding. Similarly, where a road's strategic significance suggests it should be managed by Highways England, the Department is willing to examine the case for adding it to the SRN with the relevant local highway authority.

Working in partnership

Getting the best out of the SRN requires Highways England to cooperate with a wide range of partners, in particular those with expertise and understanding of local and regional priorities so that decisions are respectful of place. We envisage Highways England cultivating close working relationships, building on those established during the delivery of RIS1 and the research phase for developing RIS2, in particular with:

- Sub-national transport bodies (STB), local authorities (in particular those with local transport responsibilities), and local enterprise partnerships (LEP) to help align activities with local plans for growth, housing and transport provision.
- Devolved administrations in Scotland and Wales, Transport for London, and city region mayors and combined authorities, joining up the road networks across borders where appropriate.
- Police and other emergency services, working to clear up incidents more quickly and promoting safety.
- The Environment Agency and other bodies working to improve the environment, reduce flood risk, and increase resilience to extreme weather and other climate impacts.
- Community organisations, especially those representing neighbourhoods strongly affected by the presence of the SRN and enhancement schemes.
- User groups, in particular those representing users who have specific needs that must be met if they are to enjoy safe, smooth and reliable journeys.


Crendon

c. Vision of the network in 2050

Our vision for an SRN that is fulfilling its purpose in 2050 envisages:

A network that supports the economy

- The SRN remains the main network through which the nation does business, carrying more traffic per mile than any other part of the transport network. It has evolved and adapted to meet the changing shape of the economy, and its high quality is one of the reasons that businesses choose to invest in the UK.
- The SRN has been 'levelled up' across the nation, so that the SRN and MRN connect all areas well, including those where poor quality links are currently a barrier to growth. This not only includes the technology of today, but also the equipment needed to create the road of the future, so that no part of the country is left in a 'not spot' with gaps in physical or digital infrastructure.
- The SRN supports the freight and logistics industry and continues to carry more freight and more business than any other part of the transport system. It works well to connect together people who are keen to do business and ready to compete in the global economy. It is also a good workplace for those who spend their day on the road.
- The SRN is a reliable way for millions of people to get to work, and gives people the opportunity to look for a job in places that would otherwise be unreachable.
- Provision of strategic road capacity, developed together with wider transport provision, has mirrored the growth in housing so that new journeys can be accommodated without worsening conditions for existing travellers.

A greener network

- The majority of all vehicles using the SRN, including almost all cars and vans, are zero emission at the tailpipe, transforming the impact of the SRN on air quality and carbon emissions.
- The SRN makes extensive and effective use of environmentally and visually sensitive 'green infrastructure', modern materials and careful planting, including trees. Together, these minimise and mitigate the air, light, noise, visual, and water quality impacts of the SRN on those living or working near to it, and sustain habitats and enhanced biodiversity.

- Enhancements to the network create roads that fit with their surroundings, and which keep negative consequences to a minimum. In particular they have employed high standards of design, responding to place-specific issues and in keeping with the natural, built and historic environment.
- The 'soft estate' (the verges and open spaces adjoining the network) is well designed and maintained.

A safer and more reliable network

- The SRN is designed and operated in response to what road users want, while also taking into account the impacts that it has on people and places.
- Continued improvements in safety technology, coupled with intelligent management of the network, result in reductions in the numbers of people killed or injured on the SRN. It may be possible to create roads that are entirely collision-free, both for users and for people working on the road.
- Users of the SRN experience reliable journeys, with predictable journey times across the network.
- The condition of road surfaces and other infrastructure around the road is of a consistently high quality, and problems are fixed early before they become an inconvenience. Day-to-day operation of the SRN is treated as equally important to capital enhancements, and the need for disruptive roadworks is minimised.
- Better information is provided for people planning or making journeys at the point they need them, and the power of data has been unlocked to optimise the management of the network and to help people make good choices about how to make their journey.
- The SRN is resilient to climate change and incidents, such as flooding, poor weather conditions, blockages on connecting transport networks.
- Supporting capacity has been added to provide resilience and ensure people and businesses have a greater choice of options that meet their needs. This can mean better roads, other modes of transport, or options that provide alternatives to travel.

A more integrated network

- The SRN is designed and managed as an integral part of a wider transport network. Users of the SRN do not encounter friction at the points where it joins other networks when planning or undertaking journeys, be they local, regional, national or international. SRN operations are managed in cooperation with other transport providers to help users with their journeys.
- High-quality routes have been provided for cyclists, pedestrians and equestrians, so that they can make their journeys safely, physically separated from motorised traffic on the SRN. These use a variety of methods appropriate to the needs of users, are attractive both for work and leisure travel, and are respectful of place.

A smarter network

- A 'roads revolution' based on a range of new vehicle technologies has transformed the SRN visibly and powerfully. Highways England is recognised as a global pioneer in the adoption of new technology, and has used this to drive better performance on its network, and shared its expertise to help local highway authorities achieve the same.
- The benefits of artificial intelligence and connectivity enabled by the secure use of the latest technology maximise the efficient use of road space, enabling more journeys to be accommodated and providing the highest standards of user experience.
- A new approach to thinking about mobility, supported by the use of 'big data' and highly-functional transport applications, has transformed people's thinking about journeys, resulting in reductions in costs, emissions and congestion.

Delivering what users want

The work of Transport Focus has been invaluable for developing our vision of the future of the SRN and the content of RIS2. In particular, we have been guided by Transport Focus's *Road users' priorities for the Road Investment Strategy, 2020-25* research,[9] which organised into nine themes the things that SRN users want to see funded. Examples of how the content of RIS2 addresses each theme are:

User priority	RIS2 statement
Enhanced safety	This remains Highways England's first imperative and informs everything it does from design principles, road standards, operational procedures and investment decisions. We will strengthen this ambition through our investment plan, performance specification and targeted safety improvements through the small schemes fund.
Improving journey times	We will keep up the momentum to reduce the impact of incidents and roadworks via the performance specification, ensuring that Highways England work to minimise time lost to improve travel time reliability. Major improvements will tackle longstanding bottlenecks.
Improved surface quality, signage and lighting	Highways England's maintenance approach will focus on safety and surface condition to enhance the quality of journeys. New measures of the ride quality experienced by users will track the effectiveness of this approach.

9 At: www.transportfocus.org.uk/research-publications/publications/road-users-priorities-for-the-road-investment-strategy-2020-25/

User priority	RIS2 statement
Better information	Highways England will explore how its data can inform users about incidents when they occur, and help freight operators schedule their journeys. Variable Message Signs and in-car information will be used more flexibly and effectively.
Improved roadside facilities	We will work with Highways England to explore supporting the provision of lorry parking in the right locations to help address shortages of facilities. We are also working with industry to ensure the existing network of rapid and higher powered chargepoints along the SRN continues to expand to support ultra low emission vehicles.
Better integration with other roads	Better working across organisational boundaries between Highways England and local highway authorities will provide seamless journeys and greater resilience.
Meeting the needs of bus and coach passengers	The Users and Communities designated fund will support investment in bus stops and park and ride sites across the network.
Improved provision for non-motorised users	As well as short-term action to make it easier for these users to travel along or across the SRN, in the longer-term good quality alternative routes for non-motorised users will be an integral part of the design of the SRN.
Future proofing new investment	Highways England will consider how to protect the current and future interests of the SRN during the design and delivery of major infrastructure projects, monitor developing technologies, and make provision to future proof the network for emergent technologies where it represents value for money.

d. Delivering the vision

In order to achieve this vision for the SRN, the Department, Highways England and other partners must take action across multiple areas. Some parts of this task are matters best handled through operational experts with a detailed understanding of conditions on the ground. Others, such as decarbonising road transport, can only be dealt with at a society-wide level. All of these actions must proceed together, in order to achieve the outcomes that the Government aspires to.

1. A network that supports the economy

Our strategic infrastructure must support growth and match the way our nation has and will change. To deliver what the nation needs, the SRN must cater to the ways in which our nation changes, and provide entrepreneurs and businesses with the opportunity to innovate and expand our economy. With two-thirds of all HGV miles travelling on the SRN, we cannot afford for the network to provide a second-class service.

It is therefore essential that the management of the road network is linked up with all those working to support growth and deliver the housing the nation needs. The process through which infrastructure supports growth does not occur in a vacuum, but only succeeds when it joins up with the plans and proposals of a wide range of people. Developers, businesses, local authorities, LEPs and STBs are all vital contributors to this process.

The Government is determined to help local places grow sustainably, so that people can have homes in communities where they feel they belong and can access the jobs, goods and services that they need. The SRN must be the ally of this growth, helping local places to absorb change sustainably by supporting people as they seek to lead fulfilling lives and creating the conditions in which businesses can thrive, whether they are serving local residents and tourists, or engaged in international trade and commerce.

Places where people want to live

The Government has an ambition to deliver an average of 300,000 homes a year by the mid-2020s and the *Fixing our broken housing market* strategy set out the plan to boost the supply of new homes.[10] As new housing and commercial areas are developed, it is important that the SRN is ready to enable that growth, and that a lack of critical capacity does not act as a barrier. Where the SRN passes through existing residential areas, it is important that its impact on the people who live there is carefully managed, with steps taken to reduce air, light and noise pollution, and to

10 At: www.gov.uk/government/publications/fixing-our-broken-housing-market

ensure that the road network is not a barrier for people going about their lives. Therefore, we will:

- Unlock new areas for housing growth, working closely with other government departments and local authorities to understand their needs. For example developments at Northstowe in Cambridgeshire, a new town on the site of an old barracks that will eventually have up to 10,000 homes, have been unlocked by the RIS1 upgrade to the A14.
- Join up investment so that RIS2 works in partnership with government programmes to support the delivery of housing and other investments in our national productivity. This includes linking the existing expertise developed through the RIS1 Growth and Housing designated fund so it can support the Government's £5.5 billion Housing Infrastructure Fund (HIF). This means that as the RIS2 programme is developed it will be mindful of the funded commitments of programmes such as HIF and that their delivery programme will be considered as the delivery plan for RIS2 is developed.
- Help local partners explore ways in which land value capture can be used to support new infrastructure.
- Be ready to explore investment with developers who want to enhance capacity on the SRN to help their activities.

Economic growth and productivity

As we seek to support economic growth across all parts of the country, and exploit new international trading opportunities, our core national transport networks require investment to provide businesses with good connections. Not all parts of the country possess world-class roads, and the Government is committed to a levelling up of Britain's infrastructure.

Through RIS2 we aim to facilitate delivery of the Government's strategy by supporting ambitious and innovative transport projects that will increase productivity and reduce congestion, as we are doing for urban areas through the Transforming Cities Fund. We also want to build on the transformational investment being delivered through RIS1, and on the ideas set out in Highways England's Strategic Economic Growth Plan, *The Road to Growth*.[11] We will seek to be responsive to development in areas as local industrial strategies are created, led by mayoral and combined authorities or LEPs. On the SRN, we will:

- Tackle congestion and improve the reliability of journeys, to help increase productivity.
- Invest in new corridors to improve service from the SRN and to support economic growth and support economic growth; reduce barriers to movement and cooperation; and help to support levelling up of the economy across the country.
- Better connect sites of high growth (for example Enterprise Zones and major developments) and around potential drivers of growth, including rail freight terminals and HS2 stations.

11 At: www.gov.uk/guidance/highways-england-supporting-growth

- Better connect ports and airports to support exporters and develop new business opportunities. This will be partly through major improvements, as we have done in RIS1 with the upgrade of the A14 between Cambridge and Huntingdon. The Port Infrastructure Fund has contributed £13 million to the development costs of further improvements that would improve access to ports in Dover, Felixstowe and Southampton. In addition, we will continue to work with local highway authorities to identify ways in which we can better manage the whole of these important routes to ports.
- Take into account the strategic importance to the economy of freight moved by road by supporting the specific needs of HGV traffic on the SRN, including consideration of the need for sufficient parking facilities.
- Continue linking geographically isolated rural areas and towns through the SRN and also the local highway authority operated MRN, so that communities are not left behind.

Enterprise and skills

Highways England will operate in ways that support the Government's agenda for investing in skills and supporting small and medium sized enterprises, seeking innovation and using new technology. Highways England will work closely with its supply chain, and with academic and community organisations, to secure opportunities to boost skills, apprenticeships, graduate schemes, women in engineering, local businesses, and getting people into work.

Highways England will continue to collaborate with government, clients, and other interested parties to deliver the Transport Infrastructure Skills Strategy.[12]

2. A greener network

Road transport makes possible many important things in our lives: working, commuting, supplying the food and goods that we need, and accessing education, healthcare, and leisure. However, as the system has grown in the past, in many places it affects the environment, air quality, and communities surrounding it.

We recognise that the need to fix those negative impacts which also matter greatly to people and the combination of work being funded through RIS2 and wider government activity, will vastly improve the SRN's environmental performance.

Tackling emissions

The Government has adopted one of the most ambitious plans in the world to decarbonise road transport. *The Road to Zero*[13] strategy set out a commitment to end the sale of new conventional petrol and diesel cars and vans by 2040 and steps to decarbonise freight. In February 2020, we launched a consultation on bringing this date forward to 2035, or earlier if a faster transition appears feasible. Other plans to improve the environmental performance of transport can be found in the Government's *Clean Air*,[14] *Clean Growth*[15] and nitrogen dioxide (NO_2) strategies[16].

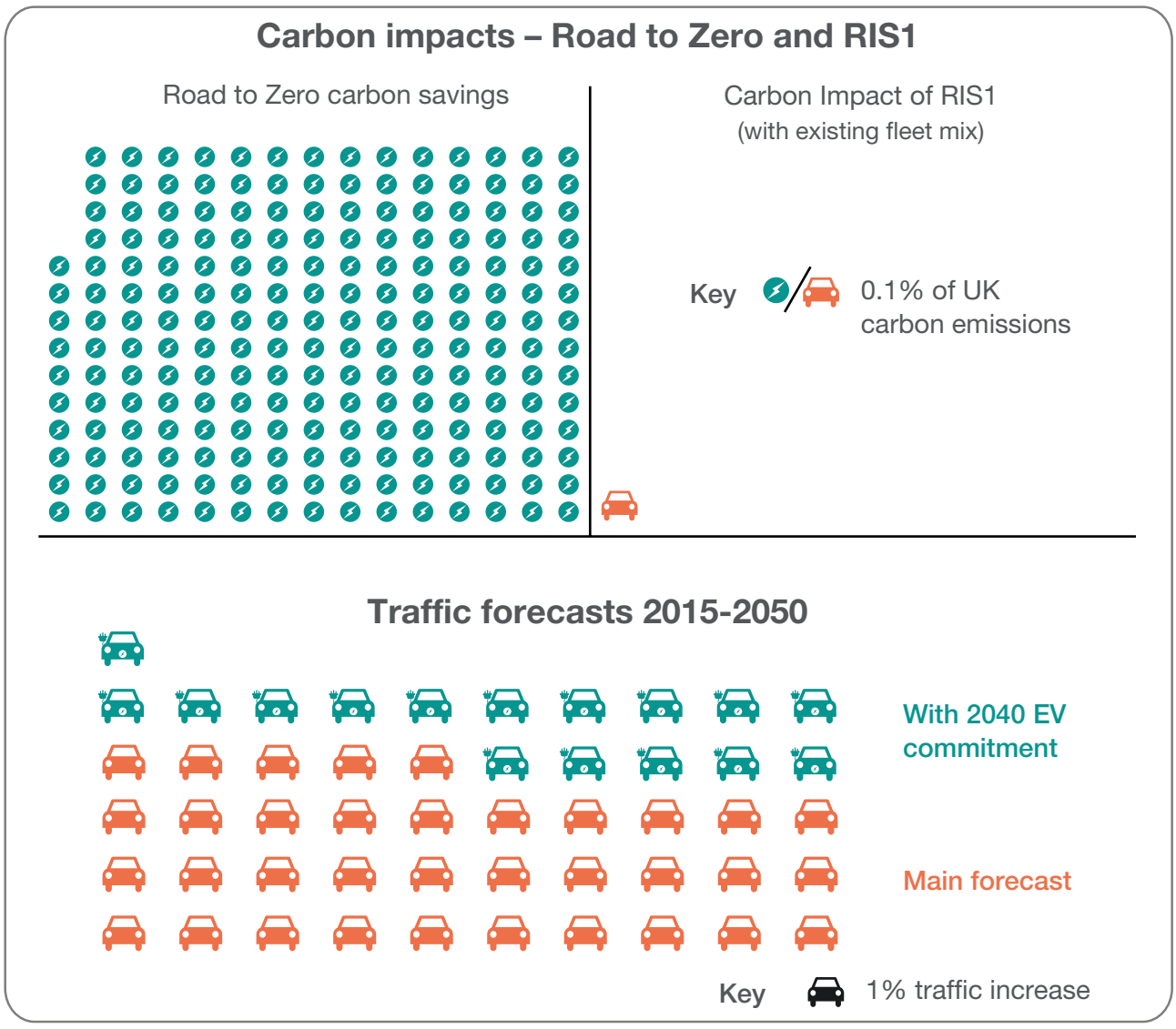
12 At: www.gov.uk/government/publications/transport-infrastructure-skills-strategy-three-years-of-progress
13 At: www.gov.uk/government/publications/reducing-emissions-from-road-transport-road-to-zero-strategy
14 At: www.gov.uk/government/publications/clean-air-strategy-2019
15 At: www.gov.uk/government/publications/clean-growth-strategy
16 At: www.gov.uk/government/publications/air-quality-plan-for-nitrogen-dioxide-no2-in-uk-2017

With transport accounting for a third of all UK greenhouse gas emissions, it is clear that all modes need to take urgent action to scale up their efforts to tackle climate change. The UK's first Transport Decarbonisation Plan, due to be completed later this year, will bring together a bold and ambitious programme of coordinated action needed to reach net zero emissions by 2050.

Achieving this will make our towns and cities better places to live, help to create new jobs and improve air quality and our health. Our *The Road to Zero* strategy put us on track to make substantial reductions in road transport emissions, but we now intend to go further and faster.

One of the associated benefits of this is that the costs of travel are expected to fall, as electric vehicles are cheaper to drive per-mile than their conventionally-fuelled equivalents.

One of the consequences of this, alongside transformational environmental improvements, is that there may be a greater incentive for people to drive. The effects of a 2040 changeover were modelled as part of



our latest road traffic forecast, and this showed that as conventionally fuelled vehicles were retired, we would expect to see a rise in traffic above other scenarios.

This is not to say that the decarbonisation of transport will lead to congestion. Our forecasts only show what would happen if all other factors surrounding transport remain equal, and the Government is committed to embracing many changes as part of the future of mobility.

Across England (outside London), we are investing £2.5 billion through the Transforming Cities Fund that seeks to improve intra-urban connectivity in city regions, and £5 billion to overhaul bus and cycle links. For bus users, this funding will support higher frequency bus services and bus prioritisation schemes as well as new zero emission buses. Cyclists can look forward to new high quality separated cycle routes and safe junctions.

We are also taking a range of other steps to support public transport, encourage shared travel and to make walking and cycling the default choice for many shorter journeys. The Department continues to invest in the National Cycle Network which already helps almost 4.5 million people make car-free journeys each year. But nevertheless, changes to the vehicle fleet mean that we should expect pressures on our roads to be higher than they would be if we did nothing to tackle climate change.

Overall, *The Road to Zero* strategy is the most ambitious plan the UK has ever had to improve the environmental performance of transport. Sensible investments in our SRN form a necessary and important ally to that plan. If we insist that the driver of 2050 is in a zero-emission vehicle, we also need to make sure the road network is ready to meet their needs. This is not a question of reverting to an outdated approach of predict and provide, but of modernising our whole transport network in a coordinated way that recognises and manages the pressures upon it, including the pressures on the roads.

In the coming years, the Department will prepare the SRN for a host of transformative policies that will deliver radically improved outcomes for the environment, including:

- Supporting the decarbonisation of freight, overcoming the particular difficulties associated with finding approaches to allow the freight sector to move away from diesel.
- Developing the UK as one of the world's leading hubs for zero-emission vehicles, both in terms of research and manufacturing.
- Tackling congestion hotspots – which cause emissions now and frustrations in the future if traffic rises above trend.
- Supporting the development of a network of rapid and higher powered chargepoints along the SRN.

Many of these steps have already been outlined as part of *The Road to Zero* and the Future of Mobility strategies published by the Government. RIS2 is a fully-integrated part of this wider effort to reach net zero emissions.

As a result of these measures, we also expect that all locations within within Highways England's control will meet air quality targets before the end of RIS2, and emissions of the key pollutants will keep falling.

Improving the environment now

In addition to preparing for the future, there are environmental impacts that demand action now. RIS2 contains an ambitious and

fully-costed plan to manage and reduce the impacts of the SRN, and where we invest in the network we aim to make positive environmental improvements. Where impacts are unavoidable, we will minimise them. Over the years covered by RIS2, Highways England will increasingly mainstream environmental considerations across its everyday business activities and will continue to seek to exploit new thinking and technology to achieve more environmentally beneficial outcomes. This includes upholding statutory obligations relating to the protection of the environment and cultural assets, and

Case study: A30 Chiverton to Carland Cross

The A30 is Cornwall's primary trunk road and connects the county to the motorway network via the M5 at Exeter. The route between Carland Cross and Chiverton Cross is the only single-carriageway stretch from the M5 to Camborne. This existing stretch passes close to a number of important environment and heritage areas; including a World Heritage Site, a Registered Park and Gardens and a number of Sites of Special Scientific Interest. One of the primary environmental concerns faced by the project is the risk of severance of species crossing through these areas.

A green bridge over the A556 constructed during RP1

As part of Highways England's commitment to better environmental outcomes, the A30 Chiverton to Carland Cross project team will be implementing initiatives to help ensure that the construction of the scheme does not harm the local environment, particularly the risk of severance. One of these initiatives is the construction of a 20 metre-wide 'green bridge'. This will serve as a both habitat and crossing for a huge variety of species whilst also enabling greater connectivity and biodiversity across the area as a result of the scheme.

Schemes such as this build on the environmental success of past projects, such as the A3 Hindhead and the A30 Goss Moor, to tackle the environmental damage of today's traffic.

playing an important role responding to wider government strategies.

A £345 million Environment and Wellbeing ring-fenced fund will invest in measures to improve environmental outcomes, including on air quality, biodiversity, flood risk, and retrofitting existing roads with modern environmental standards and green infrastructure solutions. And RIS2 makes clear how a sensitivity to the environment will run through all aspects of Highways England's work in delivering better outcomes for road users. For example:

- **Green Infrastructure**: Location-appropriate planting can improve biodiversity, mitigate emissions and reduce noise pollution, as well as helping infrastructure sit more sensitively in treasured landscapes.
- **Operations**: Support for cycling and public transport users will help people make more active and sustainable travel choices on our roads. Work to reduce congestion will help the network perform more smoothly and in turn reduce emissions from motor vehicles idling in traffic.
- **Investment**: We are ramping up spending on the operation, maintenance and renewal of the network, to bring the country's roads to a more modern, fit-for-purpose standard, and only adding capacity where it is needed to keep the network moving smoothly. In this work, environmental impacts will be avoided, mitigated against and minimised wherever possible.

All of this means that our ageing SRN will be primed to adapt to emerging technologies, and will be rejuvenated to improve outcomes for the environment.

The Government's *25 Year Environment Plan*[17] sets a vision that will embed an 'environmental net gain' principle for development, including infrastructure, and a 'natural capital' approach to making choices and long-term decisions, recognising the environment as an important economic asset.

The Plan also seeks to improve: the management of litter (an area where Highways England has both statutory obligations and those in the *Litter Strategy for England*[18]), noise and light pollution; water and air quality; the control of risks arising from surface water flooding; the condition of sites of special scientific interest; and the quantity and quality of green infrastructure. All these matters will require Highways England's input.

The environment has many facets. Specific actions in RIS2 will include:

- On reducing the impact of noise pollution, continue with the Noise Important Area improvement programme and consider the opportunities provided by new road surfaces and design of the soft estate, especially in sensitive areas such as National Parks and areas of high population density.
- On biodiversity, ensure no net loss across Highways England's activities in RP2 and continue progress towards the target of delivering a net gain in biodiversity by 2040. New planting will be appropriate to local habitats.

17 At: www.gov.uk/government/publications/25-year-environment-plan
18 At: www.gov.uk/government/publications/litter-strategy-for-england

- On air quality, work to identify and implement measures to address NO_2 exceedances on the SRN and supporting the work of local authorities to develop and implement their clean air plans, where there are interactions with the SRN.
- Address severance issues, (the negative effects arising from the way busy infrastructure routes can divide people, places and species because of their relative impermeability), both as part of the design of new schemes and through improvements where existing problems are severe.
- Continue to respect ancient woodlands and protected wildlife sites. Mitigations will be considered as part of scheme design, such as the translocation of trees and soil, wherever such areas are unavoidably affected.
- Ensure measures are put in place to address heritage assets at risk, or those negatively impacted by the SRN, whilst seeking to avoid and minimise harm to heritage assets, or put heritage assets at risk as a result of works to the SRN.
- Support efforts to tackle the shortage of lorry parking. This will help to remove the pressure of drivers to park inappropriately and the negative environmental consequences of fly-parking for local residents and drivers.

We will hold Highways England to account on its environmental performance with challenging targets. We will also continue the process of post-opening evaluation that confirms whether mitigation measures have been as effective as they are meant to be.

Air Quality
Ambition to eliminate all NO_2 links in exceedance during RP2, supported by the delivery of a programme of activity to eliminate those links in exceedance within Highways England's control. In addition, Highways England will investigate and assess incorporating into new and existing contracts air quality standards for supply chain vehicles.

Highways England Carbon
Highways England will reduce its carbon emissions (as a direct result of electricity, fuel use and their day-to-day operational activities) during RP2 (from 2021/22).

Biodiversity
No net loss of biodiversity from Highways England's activities, both from new schemes and its operational estate

Noise
7,500 households mitigated from excessive noise through a combination of barriers, targeted resurfacing to reduce road noise, and noise insulation for individual households

3. A safer and more reliable network

The SRN is a part of daily life for millions of people. When it works well, it enables people to get to where they need to be, and to do what they want to do. But every day, this requires Highways England to work hard to make sure that every journey is as safe and reliable as it can be.

This is the core of Highways England's operational business. Traffic Officer patrols work around the clock to resolve incidents and protect road users, while their colleagues in Highways England's regional control centres watch and manage the network minute-by-minute. At the same time, the longer-term decisions taken to upgrade the network must have at their core the ambition to reduce danger and improve journey quality. This affects the strategy and the design philosophy that influences longer-term design and planning.

Increased transparency will be important in driving improved performance here. Much of the data used in monitoring and reporting on Highways England's performance originates within the organisation. This data is currently provided at an aggregated level, but with some limited granularity providing additional detail in performance across regions which contributes to reported position.

ORR relies on regional data to gain greater insight into Highways England's performance. For example, its annual benchmarking report includes a range of comparisons across Highways England's regions using such data. Over time we want Highways England to publish more regional data and expect it to work with ORR to do so.

The scale of Highways England means that it is a natural leader in innovation of contract management, asset management, network operation, and construction techniques. It already sets standards for highways assets in the *Design Manual for Roads and Bridges*, and is the competent authority in technical matters for roads. Its work on innovation will continue to be supported by a designated fund in RP2.

Given the potential to achieve significant benefits for road users and taxpayers from the exploration and adoption of modern and innovative working practices, and for establishing the UK's position as an innovation hub, it is important that Highways England shares what it learns. Its procurement frameworks already encourage innovation sharing by the supply chain, and we expect Highways England to share innovative practices, and the lessons learnt from early adoption of those measures, with local highways authorities.

Safety

Safety is the first responsibility for both the Department and Highways England, informing all aspects of our strategic vision for the SRN. The approach to safety is based on the 'Safe System' approach to road safety management,[19] which recognises that people will make mistakes which can lead to collisions. The safe system approach looks to first prevent these mistakes from occurring and, where they do, to prevent the severity of any injuries through a holistic package of inter-related activities covering safer roads, safer people, safer vehicles and post-collision response.

19 Adopted in England as part of the British Road Safety Statement at: www.gov.uk/government/publications/road-safety-statement-working-together-to-build-a-safer-road-system

We will continue towards the goal of 'Zero Harm', aiming to bring the number of people killed or seriously injured on the SRN to a level approaching zero by 2040. As mentioned earlier, technology will be an important factor in achieving this vision, but there are other measures that can help, some more achievable in the short-term. Highways England will deliver a safety programme that secures improvements beyond business as usual, for example by:

- Achieving a better understanding of the causes of collisions through improved investigation and the use of data.
- Continuing to invest creating a forgiving network, whose design anticipates and accommodates human error, through our major planned investments and targeted improvement programmes at high risk locations. This includes applying the findings of the of the of the smart motorway stocktake.
- Using the new small schemes fund to support safety measures at known collision hotspots.
- Enhancing all-weather resilience of the SRN, to minimise the risk of incidents and their impact for road users.
- Supporting users who are affected by an incident and implementing measures that enable them to continue their journey.
- Working with partners to improve driver behaviour and reduce risky behaviours which may lead to incidents, including through engagement and education activities.
- Providing improved facilities for non-motorised road users through the provision of infrastructure separated from motorised traffic and safe and direct crossing facilities over the SRN, in particular where layouts require the use of the SRN for short distances to access rights of way on either side of the road.

- Providing better information to customers during their journeys on potential hazards and the need for speed compliance.
- Focusing on high-risk groups and identify what further measures could reduce their likelihood of incidents, i.e. motorcyclists, new and older drivers.
- Addressing safety of its staff and those of contractors working on the SRN.
- Supporting the activities of partner organisations such as the driver and vehicle agencies and the police to improve vehicle safety and compliance, i.e. vehicle checks.
- Working with organisations like the Samaritans to determine what steps can be taken to minimise suicide attempts on the SRN.

Reliable and resilient

Highways England, as steward of the SRN, is responsible for the effective operation, maintenance and renewal of the network. While government does not seek to specify how Highways England should approach these matters in a RIS, effective maintenance through the use of proven management techniques such as Lean, reduces costs and delays, and provides users with more reliable journeys.

Changes in climate are forecast to bring greater challenges to the network, which will need to be able to cope with a wider range of climactic conditions and extreme weather events. The National Infrastructure Commission is examining the resilience of the UK's infrastructure currently, and is expected to provide recommendations in spring 2020 which will inform future thinking in this area.

In RP2, Highways England will continue to improve road condition and:

- Proactively address maintenance problems, so that those emerging on vulnerable sections of the network can be resolved before they inconvenience users.
- Use Lean techniques to manage programmes of work and operations processes, improving efficiency of delivery.
- Consider the whole life impacts of decisions on the maintenance of road infrastructure and the soft estate, where faults are found, balancing potential increased initial costs of maintenance with reductions in repairs that disrupt traffic and cost more in the long-term.
- Use new technology to bring down maintenance costs, for example through the use of drones and self-healing roads. Opportunities in this area can be tested through the Innovation and Modernisation designated fund.
- Take on greater responsibility for the content of Variable Message Signs, which provide roadside communications, to better inform road users.
- Continue to provide traffic officers for motorways, with a focus on the most congested parts of the SRN.
- Improve their effectiveness in keeping roads open during bad weather and, working with partners including the Environment Agency, prepare the network so that it is able to withstand more extreme weather conditions and flooding.

- Protect network resilience by better understanding the asset and making more use of data; and encourage effective use of that data to provide the information about their journey that users need.

We will measure the condition of the network through users' experience of ride quality, as well as more conventional measures of asset status.

Designing wisely

By their nature, journeys on the SRN will often be long-distance. The network needs to be designed accordingly, addressing in a consistent way safety, reliability, and users' experience both when traffic is flowing well and when there is disruption. Its design also needs to take into account the SRN's relationship with other roads and modes, enabling seamless integration for users, and with the wider environment, encompassing natural, human and built environmental factors.

Infrastructure design must always be respectful of place, and where roads pass through areas of substantial environmental and cultural value, design work must take extra care to incorporate the road and roadside furniture sensitively into the landscape, potentially using a wider footprint for tree-planting, landscaping and the like. Highways England's ten principles of good road design[20] provide a useful framework which should guide design work in specific locations, responding appropriately to the local context. Highways England's Strategic Design Panel will continue to provide both

20 At: www.gov.uk/government/publications/the-road-to-good-design-highways-englands-design-vision-and-principles

general advice and independent design reviews of individual Highways England projects.

Yet, there are some general ambitions that should, over time, be applied across the SRN reflecting its principal purposes. Consistency of standards can benefit users, both when using the road and when planning journeys. Where practicable within environmental, affordability and value for money constraints, and working with partners, our vision is for the SRN to develop progressively to reflect eleven ideals.

Given that free-flowing networks are crucial for the long-term health of the economy, it is important to protect the long-term health of the SRN. This is particularly relevant in the provision of new junctions, where a poorly-placed connection can hinder other users. Therefore, we will consider proposals for new junctions on the SRN that open up new areas for housing or commercial development in

conjunction with local roads where these can demonstrate that they would not adversely affect the safety, predictability or reliability of journeys on the SRN. Where this is not possible, we will expect Highways England to work with local partners to find alternative ways of providing high quality access to the SRN through existing connections, and look to leverage third-party investment for such work.

Road standards

There are two principal road standards operated by Highways England: motorway and all-purpose trunk road (APTR). It is important that drivers remain clear and confident about the rules that apply on the roads that they use. Consequently, we do not intend to create additional standards with separate branding, signs or rules that have the potential to confuse or overload drivers.

Within these two standards, Highways England has defined specific sub-products with their own technical definitions. These include smart motorways and expressways.[21] Defining products in this way is helpful for decision-makers, procurers and suppliers, but it is not necessary for road users. As more roads are upgraded to improved standards more users will simply experience the benefits they bring in an easy and intuitive way.

Where it offers benefits to road users and the wider community, some APTR routes may be upgraded appropriately to operate as motorways. No APTR will have motorway restrictions applied until there is a good quality alternative route in place for non-motorised users and slow vehicles. The design of these alternative routes will reflect local needs, but a set of general principles will be developed in association with representative user groups.

Smart motorways

The safety of our roads is of paramount importance, and it is also important that people who use our roads feel safe and confident in how to use them. In 2019, the Department commissioned an evidence stocktake to gather the facts on the safety of smart motorways and make recommendations.

The stocktake is expected to conclude shortly. Highways England will need to deliver its recommendations and assess what they mean for the delivery of enhancement projects involving smart motorways that had been included in the RIS1 investment plan or recommended for future development.

Geographic extent

The Department has been working with Highways England to explore possible changes to the geographic extent of the SRN so that the network's shape better matches its purpose as outlined earlier.

Our thinking has been informed by the Department's public consultations on the SRN Initial Report and MRN proposals, research commissioned by Highways England, and recommendations from on-the-ground operations staff. In particular, we have focused on changes that would:

- Connect more of England's principal international gateways directly to the SRN by trunking the 'last mile' to the entrance to remove variability of service experience for users.

21 The technical definition for expressways (GD300) was published in May 2019 at: www.standardsforhighways.co.uk/ha/standards/dmrb/vol0/section2.htm

- Ensure the largest conurbations in England are served by the SRN so they can benefit from high quality connections into the national network.

We are currently in discussion with the relevant local highway authorities and Highways England with a view to making some changes during RP2. In all cases this will require agreement about the precise extent of the change, and the completion of assessments of road condition, drainage, and so forth so that the receiving authorities are aware of the detailed nature of the assets they are gaining before we can proceed with the statutory processes. These are:

- Trunking: The A453 from the M1 to East Midlands Airport (the UK's second-busiest airport for freight traffic), and the A13/A1014 from the end of the trunked A13 through to the recently-opened London Gateway Port, with a view to transfer to Highways England.
- Detrunking: The A585 from the M55 to Fleetwood, following completion of its RIS1 improvement project, the A40 from the Gloucester Ring Road to Boxbush, and the NEC Eastway, with a view to transferring these roads to Lancashire County Council, Gloucestershire County Council and Solihull Metropolitan Borough Council respectively.

Other discussions with local highway authorities are at an earlier stage, including potentially trunking the M65 between Junctions 10 and 14 pending the findings of the Central Pennines study described later. We will explore these and further changes to the extent of the network that could be implemented for the start of RP3. For example, we recognise that the plans for the Lower Thames Crossing will have an impact on the road networks of Kent and Essex and we will consider what that means for the shape of the SRN in those areas.

As mayoral and combined authorities develop strategies and working arrangements for their transport and environmental activities in many of our urban centres, an important question emerges about how the SRN and Highways England can play their part most effectively in those places. In RP2, Highways England will undertake a study into the role of the urban SRN, balancing the desire to better integrate these roads with local planning and transport operations while not adversely impacting on their national strategic role. This study will consider options such as improved collaboration on operations and changes in road ownership.

Also during RP2, the Department and Highways England intend to make use of data to identify locations where long-distance journeys regularly use local roads to connect parts of the SRN. In addition, Highways England will consider making minor alterations to the network's boundary at a location-specific level to improve the operation and maintenance of junctions and connections in and out of service areas. In both cases changes should minimise the number of ownership boundaries crossed by users, with a view to achieving smoother, more reliable journeys.

4. A more integrated network

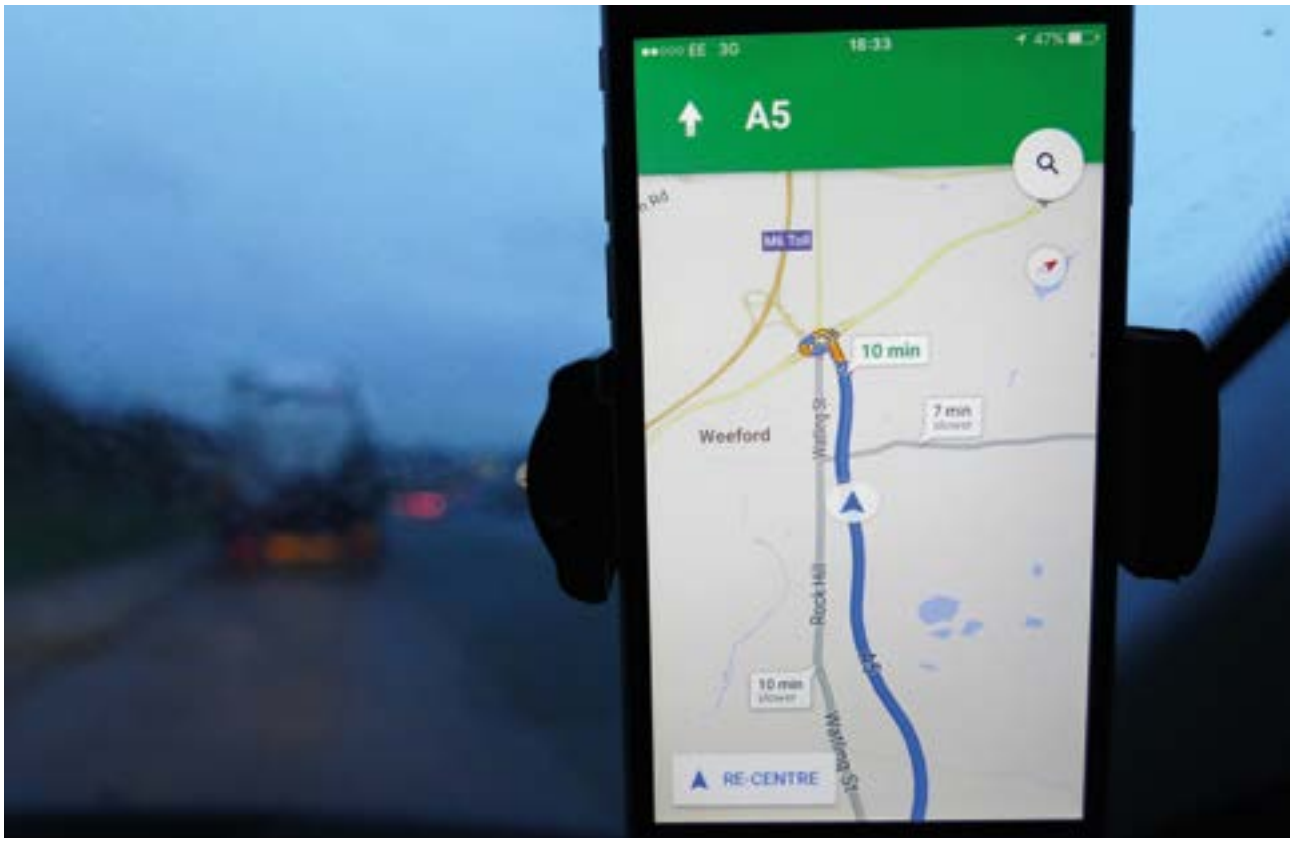
The SRN is a vital part of the wider transport network. More than two-thirds of all HGV traffic travels on the SRN and three times as much freight is moved by road than by rail and water combined. 95% of people living in England travel on the SRN at least once a year. But it is not the right network for all transport needs: it needs to be designed and operated to draw on its strengths and be well

connected into other roads and modes that can better meet other transport needs, including urban journeys and international travel. And, of course, very few journeys start or end on the SRN.

Highways England is already working with local highway authorities, Network Rail and bus and coach companies to improve integration by developing closer working arrangements and sharing data. This is especially important for day-to-day operations where problems on one mode can quickly spill over to affect the performance of another, and for planning future roadworks and managing diversion routes that minimise impacts on road users and local communities. There are also opportunities to reduce demand for the SRN by collaborating on the provision of local and active transport options. In relation to the local planning process, Highways England will continue to discharge its statutory role.

We expect these relationships to continue to develop. Through RIS2 and Highways England's activities, as well as via other mechanisms and partners, we will:

- Ensure the SRN is fit-for-purpose for long-distance traffic, and where possible provide alternatives for local traffic that can reduce the pressure on the SRN. This could include supporting local road improvements and public transport in places where the SRN is already under heavy pressure.
- Strengthen the resilience of the whole transport network, seeking to reduce situations where people are dependent on a single SRN link, and instead find other transport options, whether other roads or modes, to address this.



  - At the biggest scale, this will be dealt with by working with STBs, which can take a fully multi-network perspective across a large area. This would suit the toughest transport problems, building on the approach we have taken in RP1 looking at the M60 north-west quadrant and M25 south-west quadrant.
  - For smaller, location-specific enhancements, this may mean investing off the SRN as is being done in Glossop; and it may mean putting money into things like park and ride facilities where this will lead to demonstrable benefits for motorists.

- Help people consider their transport choices or need to travel through use of data and journey information, for example car-share schemes, promotion of public transport alternatives and fast broadband.
- Make good quality connections with the local road network, and support for local authorities, more central to the operations of Highways England, with some aspects of performance accountable to ORR.
- Support growth, by both improving connections between regions, for example by dualling the A66, and helping areas meet their growth potential, for example the A46 corridor.
- Aid modal integration at our most important ports, airports, and rail terminals, through a policy of trunking roads to their boundary wherever practical. We will also help improve integration by including major related works within RP2 (for example upgrades at rail freight interchanges) subject to the developer's funding of works. We will also ensure that the SRN and work on it integrates well with the design, construction and operation of HS2 and other transport projects.
- Review the geographic extent of the SRN as part of the process for setting each RIS, and seek to agree alterations with the relevant local highway authorities, to: reflect changing economic, social and demographic patterns; ensure the SRN continues to meet its principal purpose; and improve the experience of those using those roads.

Meeting the specific needs of user groups

In line with the principal purpose of the SRN, many of our ambitions seek to focus the SRN's design to better accommodate the needs of motorised users, recognising that these are the vast majority of users overall. However, this is not at the expense of other road users such as cyclists, and we also recognise that different groups of people using motor vehicles have particular priorities which we aim to address.

Freight and logistics

Freight logistics businesses depend on the SRN working effectively, and their ability to move goods efficiently is vital to the country's economy. Therefore, they are important customers for Highways England and its engagement with the sector will be strengthened so that it understands the sector's needs and is ready to respond. This will be crucial to building confidence, as evidenced in Transport Focus's *Logistics and Coach Manager Survey*.[22]

22 At: www.transportfocus.org.uk/research-publications/publications/logistics-coach-manager-survey-englands-strategic-roads/

The sector benefits from our investment to support reliable, predictable journeys and improved provision of travel information for all users. There are additional, specific needs for the operators and drivers of HGVs employed by the sector, for example: the provision of sufficient and optimally-located parking and rest facilities; approved diversion routes that can accommodate their vehicles; and making available Highways England data that can help freight operators schedule their journeys better. Highways England will expand its work with the sector through RP2 to address these challenges, in conjunction with the private sector.

Disabled users

The private car is vital for many disabled people: it enables a level of freedom and independence that is greatly valued. Transport Focus research into the experiences of disabled drivers and passengers using the SRN found that, when driving, disabled people felt temporarily 'non-disabled'. [23] In other words, that societal barriers had been removed and that they had what they needed to travel where they wanted. This level of accessibility is an objective for roads and other transport modes in the Government's *Inclusive Transport Strategy*.[24]

For disabled users, rest breaks are especially important to avoid fatigue and the need, of some, to access toilet facilities on a regular basis. We recognise the importance of making sure these facilities are present and accessible for disabled users so they can have a positive experience on the SRN.

We have already provided £2 million funding to improve the provision of facilities at motorway service areas. Highways England will work with partner organisations to ensure that the needs of disabled users are incorporated into our thinking about managing operations and roadworks to improve their overall journey experience.

Public transport users

Coach and bus passengers will benefit from safer, smoother journeys in the same way as drivers or car passengers. However, they will have specific requirements at the points where they board or alight, which may sometimes be on the SRN or connected to it (for example a service area). Transport Focus has recently published some research on the needs of bus passengers, which should inform future thinking in this area.[25] Highways England, working in collaboration with local authorities and service providers, will:

- Help bus and coach companies offer efficient, attractive services by smoothing access to and from the SRN.
- Where they remain on the SRN, seek to make bus passenger facilities safe and accessible, with appropriate footpaths, lighting and design features, for example provision for users to cross the road nearby.
- Consider park and ride or park and share facilities at junctions near urban centres to help reduce traffic flow in major towns and cities.

23 At: www.transportfocus.org.uk/research-publications/publications/accessible-road-network-disabled-user-experience-englands-motorways-major-roads/
24 At: www.gov.uk/government/publications/inclusive-transport-strategy
25 At: www.transportfocus.org.uk/research-publications/publications/buses-on-highway-englands-roads-meeting-the-needs-of-passengers-and-bus-companies/

Cyclists, pedestrians and equestrians

The Department and Highways England take the needs of cyclists, pedestrians and equestrians (non-motorised users) seriously. Encouraging people to opt for active modes of travel is both an effective means of reducing congestion on our roads and offers health benefits for all by improving air quality and developing fitness. This is particularly welcome at a time when there are growing demands on both our transport and health services. Easing these pressures will benefit both communities and the economy: it offers major benefits through connecting communities and making street environments more liveable and attractive.

The Department's *Cycling and Walking Investment Strategy*[26] and Cycling and Walking Safety Review highlight the importance placed on making these modes of travel more attractive for people so they become the first choice for short journeys. Transport Focus research has identified the priorities of non-motorised users and recommended steps that can help the network better meet their needs.[27]

Investment in the SRN can support this agenda by improving cycling and walking provision along trunk 'A' roads, and reducing severance effects where local cycling and walking routes cross the SRN or are separated completely by it. Together with the Department's new future of mobility strategy, they are designed to promote mode shift and assist the transition to a greener and cleaner society.

The designated funds will enable Highways England to continue investing in making the SRN more accessible for non-motorised users. They will work with local highway authorities and other off-road network providers to deliver seamless connections for non-motorised users between paths and routes, including and especially where MRN and Large Local Major investments result in improved local infrastructure adjoining the SRN.

In the long-term, our vision will mean that non-motorised users will be able to access good quality routes for their journeys segregated from an SRN that primarily serves long-distance, higher speed traffic. Provision for these users will be considered in plans for enhancements and major renewals to the network from the start, ensuring that all current users of the SRN benefit from investments.

In the immediate future, non-motorised users will in many places continue to share the same all-purpose trunk roads as other road users. While this remains the case, Highways England will:

- Maintain routes and facilities for non-motorised users to be high quality, safe and direct.
- Make targeted improvements at problem locations, for example at junctions or other locations where there is a need to address safety issues, or where non-motorised users are required to use the SRN for short distances to access rights of way on either side of the road.

5. A smarter network

As we seek to make the SRN work better to meet today's demands, we also need to make

26 At: www.gov.uk/government/publications/cycling-and-walking-investment-strategy
27 At: www.transportfocus.org.uk/research-publications/publications/cyclists-pedestrians-equestrians-summary-priorities-highways-englands-network/

allowance for the range of ways in which road users and their vehicles may interact with the SRN infrastructure in the future. We have an opportunity to lead the world in responding to this technological progress.

Highway's England's *Connecting the Country*[28] report and our *Technology and RIS2* discussion paper[29] have examined the technology and data trends that could transform the roads sector and help us address the challenges brought by increasing demand and the drive to have a more positive environmental impact.

In our *Industrial Strategy*[30] we have identified the Future of Mobility as one of four Grand Challenges that will prepare us to prosper in the modern global economy. Managing this potentially disruptive change effectively can allow us to maximise the benefits for people's quality of life and our economic productivity, whilst consolidating our leading role in the global industries of the future. For example, more intelligent vehicles and infrastructure open up the possibility for achieving much safer conditions for drivers, passengers and maintenance workers.

Highways England and the Department have commissioned a discovery project to consider the user need for data exchange between the SRN and the local road network. The areas of focus include formalising communications arrangements, improving transport and planning data and system integration to enhance network operation and incident and event management, and the requirements for ensuring the highway network is digitised and enables seamless use of CAVs.

We believe that regulations must be shaped in ways that actively encourage innovation, and Highways England will need to play its part in this rapidly-developing environment to ensure that the SRN is ready to support new forms of mobility. The Government has published its future of urban mobility strategy which sets out the guiding principles for how we will respond to emerging technologies and business models.[31]

The technology which will drive these changes is still developing, and the future is uncertain. It is still too early to say exactly how Highways England's role will evolve,

A2M2 Connected Corridor

We have built and operated a connected corridor that delivers trial services that demonstrate the possible benefits that could be unlocked with larger scale deployment of digital roads and which work with UK and other countries equipped vehicles. As well as learning about possible impacts, we have also gathered evidence about user perceptions and how to improve technical delivery.

Through this work we have demonstrated the potential for 20% or more journey time improvements in some scenarios, and improved flows possible even with less than 10% of fleet connected to infrastructure.

28 At: www.gov.uk/government/publications/highways-englands-strategic-road-network-initial-report
29 At: www.gov.uk/government/publications/technology-and-ris2
30 At: www.gov.uk/government/publications/industrial-strategy-building-a-britain-fit-for-the-future
31 At: www.gov.uk/government/publications/future-of-mobility-urban-strategy

whether it becomes even more involved in system operations for example. But it is not too early to prepare and plan, on the basis that technology will become a more integral part of driving during RP2 and beyond. Therefore, through RIS2:

- Highways England is empowered to develop the infrastructure standards of the connected and autonomous era, by identifying how new technology can be effectively rolled out across the network in a way that is both safe and speedy. This is likely to include:
  - Working with vehicle manufacturers to create the right flows of data and information to and from CAVs.
  - Ensuring motorways are suitable for regular use by automated vehicles to meet government's wider policy objectives.
  - Ensuring trunk 'A' roads are suitable for regular use by automated vehicles without the need for major upgrades to their physical infrastructure.
  - Creating guidance or standards that local authorities can use to bring autonomy to their network.
- Highways England will continue with existing provision of data, and ensure an open architecture that allows software developers to provide users with new services.
- Recognising that network management will become more important, we will evolve Highways England's performance specification to start considering efficient management in controlled conditions, such as smart motorways and roadworks, as a prelude to the sorts of work that may be important in the future.
- We will continue to invest in connectivity, for example:
  - Highways England will continue fitting cabling alongside its network with capacity for future needs.
  - Depending on the lessons of the 5G West Midlands study, we may look to take work forward with private operators to bring 5G connectivity to the motorway network.
- In terms of other specific adaptation, we will not attempt to pre-judge the winning technology now. The continuing Innovation and Modernisation designated fund will be a stimulus for identifying technologies that are essential that can then be rolled out as part of ordinary business. Continued research and trialling will ensure that the UK remains ready to adopt cutting edge technology.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Part 2
Performance Specification

This performance specification sets out the Government's high-level expectations for Highways England and the SRN during RP2.

It draws on specific aspects of the Government's long-term vision for the road network and how it supports mobility and the economy, safety, and the environment. Highway's England's Connecting the Country report reflects many of these themes in considering how the SRN might evolve, and what this could mean for road users and the country's economy.

The performance specification also identifies where there is a need to develop improved measures of performance for future road periods.


Be SAFE
Be SAFE

a. Overview

The performance specification is focused on, and designed to emphasise, the needs of those who use and rely on roads, and who live and work near the network. We have six outcome areas, which we set out in the Draft RIS, upon which we require Highways England to focus:

- Improving safety for all;
- Fast and reliable journeys;
- A well maintained and resilient network;
- Being environmentally responsible;
- Meeting the needs of all users;
- Achieving real efficiency.

Rather than setting out how Highways England should deliver the performance specification, we want it to work in the most effective way possible, delivering value for money and taking the actions that it deems necessary to achieve our long-term aims and balanced outcomes across the six outcome areas detailed above. The performance specification is itself part of a wider Performance Framework, which includes the delivery of the enhancement schemes, maintenance and renewals set out in the RIS2 investment plan.

We expect Highways England to align its final Strategic Business Plan and Delivery Plan with these expectations, and embed the performance metrics across its business units. ORR will monitor Highways England's compliance with the Performance Specification, and will hold it to account for its delivery.

We have set out seven principles for developing the performance specification, using ORR's experience of RIS1 monitoring, the development of the overall framework for Network Rail in Control Period 6, and the approach taken in other sectors. These principles have been used to develop the metrics. Some metrics do not meet all these principles completely, but attempt to strike a balance between them, for example metrics where Highways England has a lesser degree of control but are of high importance to road users.

Principle	Definition
Realistic, yet challenging	Targets are challenging but achievable, and are based on evidence (see next point).
Evidence based	There is evidence that we're focusing on the right things and that both government and customers value what we are prioritising. There is evidence to determine the value of the outcomes being measured.
Control and influence	Outcomes and associated measures can be influenced by Highways England. Highways England are unlikely to have complete influence over all outcomes and measures, but this should not preclude their inclusion in the performance specification. Measures incentivise the right behaviours by Highways England.
Measurable	The outcome can be measured either directly or indirectly by the indicator. Measures follow good practice: they are SMART,[32] meaningful and directly relevant to the outcome area they need to measure. The data source is reliable and robust and has been analytically assured.
Forward looking (future-proof)	Outcomes and measures should largely stand the test of time and be relevant throughout a RIS period. A clear plan should be in place to replace measures which could be improved, or to be removed where there is evidence that there is little value in them continuing in the specification.
Aligns with what customers and government want	Customers recognise the outcomes as their priorities: they are written in a way that can be understood by them and which they have confidence in. Priorities will differ between user groups. For example, drivers prioritise journey time; vulnerable users, safety; and logistics, businesses reliability. Outcomes align with the Government's vision for the network and wider objectives, for example reducing carbon dioxide emissions and achieving value for money.
Accessibility	It is important that stakeholders are able to understand and engage with the metrics that are published. This can include the process used to reach them.

32 Specific, Measurable, Achievable, Relevant and Time-bound.

b. Measuring success

In each outcome area, the performance of Highways England and the SRN will be assessed against:

- Key Performance Indicators (KPIs);
- Performance Indicators (PIs); and
- Commitments that will provide additional context to Highways England's performance or help develop future performance measures.

Key Performance Indicators

KPIs focus on activities or outcomes which are seen as most important, either by road users or communities that live near to the SRN, or which support wider government objectives. For each outcome area, there are a small number of KPIs. This ensures that Highways England can optimise performance through its investment plans, and its operational priorities for the network.

Most KPIs measure outputs where Highways England has a high degree of control; however, for some Highways England has less direct influence. An example is the KPI for the Improving Safety for All outcome area, which measures the number of people killed or seriously injured on the SRN each year. Highways England can influence safety on its network through how it maintains the condition of the roads, the way it manages roadwork and deals with incidents, and the design standards to which roads are built and maintained. But it has limited influence on driver behaviour and traffic demand levels, and none over factors such as vehicle design.

KPIs have targets attached to them and ORR will monitor Highways England's performance against these. Where targets are set for a metric over which Highways England has limited control, ORR will look at Highways England's performance in the round and whether it has taken appropriate steps in influencing components of the metric where it does have control.

Performance Indicators

The KPIs by themselves do not, and cannot, fully reflect how Highways England and the SRN are performing. PIs offer trend-based measures to customers and stakeholders, and provide additional context to KPIs or cover areas of specific focus to inform ORR's monitoring. Performance on KPIs and PIs will be reported to ORR and Highways England will publish the data annually.

Commitments

This covers other priorities which are not suited to metrics. For example, commitments to develop new metrics for future road periods; publish annual reporting on specific aspects of performance; or put in place the building blocks for improved performance and reporting transparency in the future.

Where these are not actions to be delivered in the first year of RP2, we require that progress in delivering these commitments is reported annually to ORR. Highways England should clearly set out its delivery timetable for any new metrics, along with interim milestones, so that progress can be monitored.

The Department for Transport may choose to replace or supplement an existing KPI, or PI, with a newly developed metric during RP2 or wait to include it in the RIS for RP3 depending on the time needed to establish it. In the event that the Department, Highways England or ORR wishes to change or add a KPI, PI, or Commitment, this will need to be agreed through a process of change control.

Disaggregated reporting of performance metrics

Producing performance metrics in a disaggregated form, for example at a regional or corridor level can help assess Highways England's performance and efficiency and identify opportunities for improvement. Some regional reporting has been developed during RP1. The Strategic Roads User Survey (SRUS) accessed through Transport Focus's data hub provides road user satisfaction by region and by individual road.[33]

ORR publishes an annual benchmarking report[34] which assesses regional performance of five metrics against Highways England's performance specification targets. During RP2 we want to see further development and use of disaggregated reporting. Where this is possible, regional data and comparative performance data by road type will be provided for information and to support benchmarking. As with new metric development, this should be clearly set out in a delivery timetable by Highways England.

33 At: transportfocusdatahub.org.uk/

34 At: www.ORR.gov.uk/highways-monitor/publications/benchmarking-highways-englands-performance-and-efficiency

Performance specification coverage

The performance specification is intended to represent the performance of England's SRN. But where roads are currently covered by Design, Build, Finance and Operate (DBFO) contracts, some metrics – in particular asset condition and litter – are not captured by the performance data reported to ORR, as performance reporting is part of long-standing contracts with different reporting arrangements.

During RP2 we want to see Highways England investigate including DBFO roads more fully within the performance specification for future road periods. Some DBFO roads, including parts of the M40 and A1(M), will come under Highways England control and reporting during RP3 as contracts come to the end of their life. For these roads, Highways England will naturally start collecting data in good time and ensure that those roads coming into the scope of performance reporting do so seamlessly. Other roads, such as the M25 will remain as DBFO, with the last of these coming under Highways England control in 2039-40. Highways England will investigate the cost and practicality of addressing inconsistent reporting for DBFOs with a longer lifespan.

Data quality

The quality of data produced by Highways England is important in monitoring operational and financial aspects of the performance specification and the delivery of the investment plan. In many cases, the Department and ORR are reliant on this data to undertake its client management and monitoring activities. Highways England itself also needs good quality data that it can rely on to support management decision making.

We want Highways England to continue to maintain progress on improving data in RP2 to support metric development, and collaborate with ORR as part of ongoing work to improve the understanding of existing data and identify opportunities for improvement, including embedding lessons from RP1.

Operating the performance regime

We intend to continue to use broadly the same governance framework as was developed for RIS1. This has allowed Highways England's performance to be assessed, and provided the sanctions and incentives to encourage the right behaviours. Nevertheless, we will look for opportunities to review and improve the current arrangements where appropriate. This framework includes ORR and Transport Focus as well as Highways England and the Department. As the parties have different roles, for example monitoring performance or assessing customer satisfaction, a high level of collaboration between all four will be required.

The work of ORR and Transport Focus has been important in developing the performance specification for RIS2. In addition to providing insight into what road users want (*Measuring performance of England's strategic roads: what users want),*[35] joint work by ORR and Transport

35 At: www.transportfocus.org.uk/research-publications/publications/measuring-performance-englands-strategic-roads-users-want/

Focus has guided the focus of the performance specification[36] for a future road period.

Through its Efficiency Review, ORR has provided advice on whether the outcomes sought through the performance specification are achievable based on the funding available and the profile and balance of the investment plan, and whether Highways England's proposals deliver these outcomes in an efficient manner.

Transport Focus will continue to gather the views of all road users and use these to formulate advice for the Secretary of State, as well as assisting ORR in assessing the performance of Highways England during RP2.

We require Highways England to collect data to report on the KPIs and PIs and to evaluate the extent to which its activities have driven changes in performance. ORR will continue to independently examine the efficiency and performance of Highways England, taking into account any analysis and supporting evidence provided.

ORR sets out how it monitors the operational and financial performance of Highways England through its Monitoring Framework document, which is currently being updated for RP2.[37] Transport Focus will also gather views of road users on performance to provide advice to the Secretary of State.

The rules on how the data relating to the KPIs and existing PIs will be gathered and analysed are set out in the *Operational Metrics Manual*[38] and *Efficiency and Inflation Monitoring Manual*.[39] Highways England will update and re-issue these shortly, following discussion and (where relevant) agreement with the Department, ORR and Transport Focus.

ORR has a range of tools to encourage and where necessary enforce compliance with the performance requirements of the RIS. Its enforcement policy is currently being updated in advance of RP2.[40]

In certain circumstances, the Department has the power to vary Highways England's statutory directions and guidance ("the Licence")[41], make statutory interventions, or change governance. We intend to consider whether the Licence requires any clarification amendments in the light of experience from the first five years of the arrangements established by the Roads Reform in 2014.

36 *Measuring Highways England's performance 2020-25: the road user view*, available at: www.transportfocus.org.uk/research-publications/publications/measuring-highways-englands-performance-2020-25-road-user-view/
37 At: orr.gov.uk/highways-monitor/road-consultations/all-road-consulations/monitoring-highways-england
38 At: www.gov.uk/government/publications/highways-england-operational-metrics-manual
39 At: www.gov.uk/government/publications/highways-england-efficiency-and-inflation-monitoring-manual
40 At: orr.gov.uk/highways-monitor/road-consultations/all-road-consulations/enforcement-policy-for-highways-england
41 At: www.gov.uk/government/publications/strategic-highways-company-licence

c. Indicators and requirements

This part of the chapter sets out the KPIs and PIs that will be used to monitor and understand the overall performance of Highways England and the SRN, as well as the requirements made of it during RP2.

Outcome 1: Improving safety for all

Safety of everyone who uses or interacts with the SRN is the first responsibility for both the Department and Highways England, informing all aspects of the design of RIS2. Highways England applies the "Safe System" approach to road safety management, which recognises that people will make mistakes which can lead to collisions. This approach looks to first prevent them from occurring and where they do to prevent injuries or minimise their severity through a holistic package of any injuries through a holistic package of inter-related activities covering safer roads, safer people, safer vehicles and post-collision response.

There has been a long-term downward trend in the number of people killed or seriously injured on the Network. However, as collision hot-spots are addressed, vehicles get safer, operating conditions on the road are more closely managed, and traffic levels on the SRN increase, opportunities to maintain this rate of progress get harder and as a result the rate of decline has slowed.

Measuring success

Highways England's focus is on reducing fatalities and serious injuries on the SRN, and has a 'Zero Harm' goal of bringing the number of people killed or seriously injured to a level approaching zero by 2040. In RIS1 it has a KPI to reduce the number of people killed or seriously injured on the SRN by 40% by 2020, compared to the 2005-09 average baseline.

Reducing the number of people killed or seriously injured on the SRN will continue to be the lead safety KPI in RIS2, and the trajectory set for the next five years means Highways England remains on course for zero people killed or seriously injured by 2040. The target is therefore based on a 50% reduction against a 2005-09 average baseline, keeping Highways England broadly on the same trajectory as RIS1.

Highways England's activities and influences on performance will continue to concentrate on safer roads, safer people and safer vehicles. The Safety and Congestion designated fund will support specific smaller safety interventions, in addition to any safety benefits from schemes in the investment plan. However, we have also set a stretch element to the target, going beyond what can be achieved by these outputs alone, which continues to encourage Highways England to consider how every aspect of its business can improve safety for users. It must report against this target, including

variances to the trajectory, and evaluate and demonstrate how activities have contributed towards the outcome.

A supporting set of PIs will capture performance in relation to:

- the total number of people killed or injured on the SRN
- the number of non-motorised and motorcyclist users killed or injured on the SRN
- the number of injury collisions on the SRN
- the number of serious workplace injuries suffered by Highways England's employees and contractors.

During RP2, Highways England will work with Transport Focus to consider whether a rate-based measure of vulnerable road user casualties would provide a better measure of safety on the network for this group.

The safety rating of the SRN will also form part of the Improving Safety for All outcome area. Using the latest version of the International Road Assessment Programme (iRAP) model which has been developed to better reflect the SRN, Highways England will assess the network in 2021 determining a 'star rating' baseline and forecast for 2025 based on its investment plan. This assessment will provide an understanding of the level of use of the safest roads (3-star roads or above).

Outcome 2: Providing fast and reliable journeys

Transport Focus's research into measuring performance of the SRN highlights that journey time is the most important influence on satisfaction among drivers according to its ongoing SRUS. It is often even more important to logistics and bus and coach businesses, as evidenced in Transport

Improving safety for all	
KPI	***The number of people killed or seriously injured on the SRN.*** **Target:** Ongoing reduction in the number of people killed or seriously injured on the SRN to support a decrease of at least 50% by the end of 2025 against the 2005-09 average baseline.
PIs	● The total number of people killed or injured on the SRN. ● The number of non-motorised and motorcyclist users killed or injured on the SRN. Disaggregation will be provided by road user group to assist understanding of the PI, but are not considered PIs in their own right. ● The number of injury collisions on the SRN. ● The accident frequency rate for Highways England staff and supply chain staff based on RIDDOR[42] incidents and normalised by the number of hours worked in a year. ● The % of traffic using iRAP 3* or above rated roads.
Commitments	● Work with Transport Focus to investigate a rate-based measure for non-motorised user casualties. ● iRAP baseline to be established in 2021, and 2025 forecast developed, based on latest iRAP methodology.

42 Reporting of Injuries, Diseases and Dangerous Occurrences Regulations.

Focus's *Logistics and Coach Manager Survey*. In practice, and as highlighted in *Measuring performance of England's strategic roads: what users want*, journey time is viewed in different ways by users (which often blend together), and include actual journey time; arriving when you estimate you will; and not having wide variations day-to-day for the same journey.

Whilst journey time is heavily influenced by factors outside Highways England's control, such as traffic growth and extreme weather, we know from the SRUS that of the six key components of a journey that are measured, roadwork management scores most poorly. Highways England can and should work to tackle the congestion that can be predicted, such as cyclical increases in demand levels (for example, continuing to plan to avoid roadworks during peak periods, or at the start or end of holidays). It can also minimise disruption through planned roadworks by effective management that keeps traffic flowing smoothly.

Unpredictable congestion caused by, for example, incidents on the network may be more problematic, owing to their uncertain nature and impact on journey times. While such incidents may be outside the control of Highways England, how it deals with them can affect congestion and journey times.

Measuring success

During RP1 so far, average delay on the SRN has grown from 8.9 seconds per vehicle mile to 9.5 seconds per vehicle mile. This is against the background of a growing economy, increasing traffic volumes, and a steadily increasing volume of roadworks taking place on the network as Highways England's investment on the network has risen, particularly schemes on existing lines of route such as smart motorways and major structures renewals. Network availability has remained consistently above its RIS1 target level of 97% despite the increase in roadworks as Highways England has attempted to keep lanes open where possible. Highways England has also consistently met its KPI target for incident clearance in RIS1, supporting better decision making in response to incidents on the network, and using historic incident data to locate Traffic Officers closer to problematic parts of the network so that they are able to clear incidents more quickly.

In RIS2 we have chosen to retain these headline measures of performance. For average delay we have set an ambition for performance at the end of RP2 to be no worse than at the end of RP1. Highways England will be required to demonstrate how it has acted to achieve this ambition. It will also make publicly available more granular information on delay on the SRN.

The RIS1 KPIs for network availability and incident clearance will continue to be used, with metrics being enhanced or targets raised to provide additional challenge. The network availability KPI will continue in its current form in 2020-21. As part of the development of a new metric to be introduced from year 2 of RP2 to more accurately reflect road user experience, Highways England will fully investigate a range of enhanced options for measuring network availability including taking account of speed restrictions in place owing to roadworks (for example, because of narrow lanes) and penalty weightings for full carriageway closures and, if practical, slip road closures. The incident clearance measure will now cover all 24 hours, and Highways England will report on the distribution of incident clearance times, and continue to provide additional details of long duration incidents.

A supporting set of PIs will capture performance in relation to:

- Delay on smart motorways
- Delay from roadworks
- Journey time reliability
- Delay on gateway (ports and airports) routes
- Average speed

During RP2 Highways England will work with Transport Focus to investigate future opportunities to make more granular information about delay on the SRN publicly available. We anticipate that this might include reporting on a regional basis, journeys between conurbations, and maps showing delay across the network on a link-by-link basis. Highways England will also investigate:

- The development of new metrics on journey time reliability which more

Fast and reliable journeys	
KPI	***Average delay*** Difference between the observed travel time and the speed limit travel time (seconds per vehicle per mile). **Ambition:** Performance to be no worse at the end of RP2 than it is at the end of RP1. Highways England will be required to demonstrate how it has acted to reduce delays in support of this ambition. **Network availability** Percentage of the network free from traffic restrictions owing to roadworks. **Target:** Achieve 97.5% lane availability in 2020-21. Existing metric to be replaced by a new expanded metric with target based on baselining work undertaken during 2020-21. **Incident clearance rate** Percentage of incidents cleared within one hour, based on 24 hour coverage. **Target:** 86% of motorway incidents cleared within one hour.
PIs	● Delay on smart motorways: average delay (seconds per vehicle mile) observed on smart motorways compared to all vehicles travelling at upper limit for variable speed limit sections. ● Delay from roadworks: average additional delay owing to roadworks, compared to a benchmark journey time before roadworks were in place. Calculated as average annual delay (minutes per hour travelled). ● Journey time reliability: measured as the average difference between observed travel time and the profile (normal) travel time. ● Delay on gateway routes: average delay (seconds per vehicle mile) observed on gateway routes compared to all vehicles travelling at speed limit. ● Average speed: average speed (mph) whilst travelling on the SRN.
Commitments	● Working with Transport Focus, investigate the development of new metrics on journey time reliability which reflects more accurately road users' understanding of reliability, and delay in roadworks. ● Investigate new PIs on delays from incidents and delays on the local road/SRN boundary, and an alternative performance measure for smart motorway operation to keep track that these roads are delivering their intended journey-time related objectives.

accurately reflect road users' understanding of reliability, and delay from roadworks. It will do this working in collaboration with Transport Focus and through its existing customer engagement routes. If suitable, these new metrics will be ready for operation at the beginning of RP3.

- New PIs measuring delays from incidents and delays on the SRN boundary with local roads, and improve the PI on delay on smart motorways for the start of RP3 if appropriate.

Outcome 3: A well maintained and resilient network

Much of the SRN was built in the 1960s and 1970s – 57% of structures were built before 1980 – and many assets are now reaching their designed lifespan and require an increasing volume of works, in addition to regular maintenance needs. This activity is essential to keep the SRN running safely and smoothly, meet environmental commitments and ensure the SRN remains serviceable. Maintaining this national asset is also a key component of meeting customer and stakeholder expectations, particularly around performance.

Good practice asset management supports efficient maintenance and renewals delivery, minimises disruption for users, reduces the long-term cost of maintaining the network and ensures it operates effectively. Such an approach considers the whole life impacts of the decisions made and is consistent with Highways England's Licence.

Measuring success

During RP1, Highways England reported against five main classes of asset: pavement (the road surface); structures (e.g. bridges); technology (e.g. overhead message signs); drainage; and geotechnical works (e.g. embankments and cuttings).

Road surface condition was used as a proxy for network condition in RIS1 and monitored against a target of ensuring that 95% of road surface did not require further investigation for possible maintenance. Other asset classes were reported as PIs. At the end of 2018/19, 95.5% of the network's road surface did not require further investigation. This above target performance represents a steadily improving picture following the introduction by Highways England of a recovery plan after pavement condition in the first year of RP1 was below target. Data reported by Highways England shows that the condition of other assets on the network covered by PIs is broadly stable.

Improving the quality of information across all asset classes formed an important piece of work during RP1, and was supported by a comprehensive data improvement plan, so that progress of this work can be monitored. In parallel, the metrics used to report condition were reviewed and improved.

In RIS2 we have chosen to retain road surface condition as a KPI and the headline measure of network condition. Highways England has trialled an improved pavement condition measure in RP1 which captures all lanes (rather than the RIS1 measure where the condition survey was restricted to the inside lane), analyses performance based on outturn condition, and is linked more closely to maintenance requirements. Because of the different datasets used in the new metric, the need to capture a full data baseline and then understand how the datasets behave, it is not currently possible to identify the target which would maintain performance at a level consistent with RIS1. We therefore require

Highways England to continue to target performance of 95% against the RIS1 pavement metric until March 2022, when additional data should allow an unambiguous assessment of the necessary target for a new metric.

A supporting set of PIs will capture performance in relation to:

- Structures condition
- Technology availability
- Drainage resilience
- Geotechnical condition

While this outcome area focuses on technical measures, ride quality will be measured as part of the Meeting the Needs of all Road Users outcome area.

Through RIS1, Highways England has improved its asset management capability and maturity, helping to make better asset investment decisions. Its Informed Asset Management Plan (IAMP) describes the activities and related benefits to improve the asset management approach; it also supports the Licence requirement to be consistent with the international standard on asset management (ISO55000).

The focus of the IAMP (Highways England's first asset management improvement plan) was to improve many key areas, including publication of an asset management policy and strategy and improving asset information to support better asset investment decisions. Building on the IAMP and lessons learned from both RIS1 delivery and RIS2 Business Case development, an updated improvement plan is being developed; the Asset Management Development Plan (AMDP).

The plan will describe improvements to better connect Highways England's activities across the whole asset lifecycle (covering asset creation, maintenance, operation and renewal), resulting in an improved and more consistent level of service to its customers. The AMDP will cover RP2 and will be broken

A well-maintained and resilient network	
KPI	***Pavement condition*** **Target:** Achieve 95% of road surface that does not require further investigation for possible maintenance for years 1 and 2 of RP2, based on the continuation of the current pavement metric. Target for years 3 onwards will be based on the concept of road surface in good condition and determined through parallel running using the new metric trialled in RP1.
PIs	● Structures condition: average structural condition; critical element condition; and structural condition Index. ● Technology availability: percentage of time roadside assets are available and functioning. ● Drainage condition: measure of percentage of carriageway that does not have an observed significant susceptibility to flooding. From 2024/25 it is intended that this metric will be weather normalised. ● Geotechnical condition: percentage length of asset in good condition.
Commitments	● Implement the AMDP for RP2 as described above. ● Investigate an improved structure condition metric during RP2, and an alternative indicator for technology assets.

down and monitored through defined annual deliverables.

Ahead of its implementation, the plan will be mapped against ISO55000 to ensure Highways England continues to meet its Licence obligations. Highways England will engage with ORR and the Department in the development of its five-year plan, including the proposed annual deliverables prior to the start of each financial year in RP2.

Outcome 4: Delivering better environmental outcomes

We recognise that the development and operation of the SRN has environmental impacts, both in the immediate vicinity of the network and further afield. These influences on the environment are multifaceted, but include effects on noise, carbon dioxide and other greenhouse gas emissions, air quality, and biodiversity. Our objective is to secure positive environmental impacts from RIS2, and where negative impacts cannot be avoided that they should be mitigated as far as possible. Highways England is required under its Licence to ensure that protecting and enhancing the environment is embedded into its business decision-making processes and is considered at all levels of operations.

As in RIS1, we will use designated funds to achieve environmental improvements beyond 'business as usual'. In RP1 this approach has facilitated important progress in a number of areas, such as mitigating 1,150 of the Noise Important Areas most affected by road noise from the SRN. However, we also expect Highways England to:

- consider the environmental impact of how it plans, maintains and operates its network, and in its development of major schemes; and,
- cooperate with local authorities to address impacts of the SRN on people and places neighbouring the network.

We also expect that Highways England will build upon its progress in RP1 to achieve a further improvement of environmental outcomes during RP2, in line with, but not limited to, government policy on the environment as set out in the *25 Year Environment Plan* and the *Air quality plan for nitrogen dioxide*, *Clean Growth* and *Road to Zero* strategies.

Measuring success

During RIS1, Highways England reported against two environmental KPIs, related to noise and biodiversity, as well as reporting progress related to improving air quality, reducing the carbon footprint of its activities, and acting to lessen water pollution from the SRN. As part of the RIS1 performance specification, Highways England was also required to develop new metrics to reflect the fuller extent of the environmental impact of the SRN. This activity means that the RIS2 performance specification now monitors more aspects of Highways England's environmental performance.

In RIS2, we have chosen to retain a KPI monitoring Highways England's efforts to mitigate the impact of excessive road noise. The revised RIS2 metric will measure the number of households in Noise Important Areas mitigated, with a target of 7,500 households to be mitigated through a combination of offering noise insulation for affected households, constructing noise barriers, and the use of quieter road surfaces. This activity will be funded from the Environment and Wellbeing designated fund.

The RIS1 performance specification required Highways England to produce a Biodiversity Action Plan, and to make progress against its

delivery. In RIS2, the biodiversity KPI will go further by requiring Highways England to deliver No Net Loss of biodiversity across its soft estate over the course of the road period, using Natural England's assessment approach. This would measure both the contribution of the enhancement schemes under construction in RP2 and the status of Highways England's soft estate.

We also expect Highways England to make further progress on improving air quality around the network. During RP2, Highways England will be subject to a KPI measuring the number of network links which are in exceedance of the legal NO_2 limits agreed with the Department and based on the Pollution Climate Mapping model.[43] The target will be to reduce these agreed links in exceedance to zero in the shortest possible time. This will be delivered through the programme of work already agreed. The findings of phase 3 of this programme will be published shortly and will set out the measures Highways England has identified to address NO_2 pollution levels in the shortest possible time.

Alongside this, Highways England will investigate and assess incorporating into new and existing contracts air quality standards for supply chain vehicles and associated reporting requirements. A more detailed timetable for these investigations will be produced in Year 1 of RP2, as well as potential implementation opportunities identified by that stage.

The fourth KPI in this outcome area will measure Highways England's own carbon emissions: the carbon footprint of heating and lighting its buildings and offices, the fuel consumed by Traffic Officers' patrols and business travel, and the electricity used for roadside signs and lighting. We expect that the associated target will be introduced from Year 2 of RP2 onwards in order to ensure that the data underlying the measure is

43 At: https://uk-air.defra.gov.uk/research/air-quality-modelling?view=modelling

robust. In addition, although outside the scope of this performance specification, Highways England will be expected to reduce its carbon emissions in line with its new Greening Government Commitments, which will be in place from April 2020.

A set of supporting PIs will complement these KPIs relating to the following:

- Supply Chain Carbon emissions
- Condition of Cultural Heritage assets
- Water quality
- Litter

These PIs are intended to offer context to ORR in measuring Highways England's overall environmental performance and increase transparency. We will also require Highways England to produce additional annual sustainability reporting in the form of an update within its Annual Report. This is intended to provide even greater visibility of how Highways England is meeting both its statutory and Licence obligations to ensure the best practicable environmental outcomes across its activities.

During RP2, Highways England will investigate new environmental metric(s) informed by the

Delivering Better Environmental Outcomes	
KPI	***Noise*** **Target:** 7,500 households in Noise Important Areas mitigated using funding from the Environment and Wellbeing designated fund during RP2. Biodiversity **Target:** Achieve No Net Loss of biodiversity over the whole Highways England soft estate by the end of RP2. ***Air quality*** **Target:** Bring links agreed with the Department and based on the Pollution Control Mapping model into compliance with legal NO_2 limits in the shortest possible time. ***Highways England carbon emissions*** **Target:** Reduce Highways England's carbon emissions as a result of electricity consumption, fuel use and other day-to-day operational activities during RP2, to levels defined by baselining and target setting activities in 2020-21.
PI	● Supply Chain Carbon emissions: emissions from Highways England's contractors (including embodied carbon from construction) per million pounds spent. ● Condition of Cultural Heritage assets: aggregate 'quality score' of Highways England's Cultural Heritage assets. ● Water Quality: length of watercourse enhanced through the mitigation of medium, high, and very high risk outfalls as well as through other enhancements, for example river retraining/rewilding ● Litter: percentage of the SRN where litter is graded at B or above under the Litter Code of Practice.
Commitments	● Investigate, and as appropriate develop, new environmental metric(s) informed by the natural capital approach. ● Investigate and assess incorporating into new and existing contracts air quality standards for supply chain vehicles deployed on Highways England work, and associated reporting requirements. A more detailed timetable for these investigations will be produced in Year 1 of RP2, as well as potential implementation opportunities identified by that stage.

natural capital approach to support an understanding of quantity and quality of natural capital and where it is vested.

Outcome 5: Meeting the needs of all road users

User satisfaction reflects the success of Highways England in delivering better performance through its investment and the day to day operation and management of its network. As outlined earlier, Transport Focus's *Road Users' Priorities for the Road Investment Strategy*, identified nine key road user priorities for RIS2 funding. The findings of Transport Focus were reflected in the responses from users and user representative groups received during the Department's public consultation on RIS2.

Alongside the insight provided into the priorities of motorists, Transport Focus has undertaken pilot surveys of satisfaction for non-motorised users,[44] and logistics and coach businesses that use the SRN (the *Logistics and Coach Manager Survey*).

The investment we are making on the SRN in RP2 is unprecedented, and will simultaneously challenge and raise users' expectations of their experience of the SRN. A future-proofed network offering improved ride quality requires maintenance, renewals and enhancements. The resulting roadworks will affect journey time reliability, and the overall time taken to complete journeys. The challenge for Highways England is to mitigate these impacts on road users through roadworks management and coordination, and provide accurate and timely information to help road users plan journeys.

It also means keeping road users aware during evolving situations to allow them to manage their expectations, for example during unpredictable disruption such as incidents or poor weather. We know that road users value accurate and timely information when they encounter unexpected disruption as it helps them to re-plan both their journeys and the activities that depend on them, and are reassured by a clear, well-rehearsed plan to get roads up and running again as quickly as possible.

During RP2, Highways England should continue to maintain and improve facilities for non-motorised users, supported by the Users and Communities designated fund. We also expect that Highways England will continue to consider how the SRN integrates with public transport to meet users' accessibility needs.

Measuring success

The main measure of user satisfaction in RP1 was the NRUSS. Highways England was targeted with improving the overall NRUSS score to 90% by 31 March 2017 and then maintaining it to at least that level over the remaining years of RP1. The disaggregation that the survey has provided, combined with a clear customer service strategic plan has provided the basis for an annual customer plan, formulated after consultation with Transport Focus, that extends across all Highways England's business units.

44 Surveys have been published of users in the North West and East Midlands at: www.transportfocus.org.uk/research-publications/publications/cyclists-pedestrians-equestrians-measuring-satisfaction-journeys-highways-englands-network-north-west-east-midlands/ and in the West Midlands, Berkshire and Hampshire at: www.transportfocus.org.uk/research-publications/publications/cyclists-pedestrians-and-equestrians-measuring-satisfaction-with-journeys-on-highways-englands-network-in-the-west-midlands-berkshire-and-hampshire/tf-cpe-report-september-2019/

RIS1 also included a requirement that Transport Focus develop a more robust measure of road user satisfaction. Transport Focus has developed and is operating the new SRUS measure of satisfaction in parallel with NRUSS, and SRUS consistently tracks between five and six percentage points lower than NRUSS. This is owing to the widely different methodologies of the two surveys.

In setting an SRUS target for RIS2, we have also taken account of the level of disruption to road users resulting from a peak in enhancement schemes under construction during RP2, including works associated with HS2 and other major transport projects affecting the SRN." and insert a paragraph break afterwards. However, we also understand that there are external factors beyond Highways England's control (for instance extreme weather events) that can also affect user perception. We have set an SRUS-based target of 82% for 2020-21 and 2021-22, with year on year increases in following years. Because of the uncertainty in any new metric, we are proposing that road user satisfaction targets for post 2021-22 are reviewed at the end of the second year of RP2.

Highways England can do much to affect directly the experience that road users have when using its network. The management of incidents and management of roadworks are captured as targeted KPIs in the Fast and Reliable Journeys outcome area. However, as Transport Focus research has highlighted, timely and accurate information to road users is important too. In RIS2 we are therefore including an additional user-centric targeted KPI which will measure Highways England's performance in providing advance roadworks information seven days ahead of when work takes place.

A supporting set of PIs will capture performance in relation to:

- Timeliness of information provided to road users through electronic signage
- Ride quality
- Working with local highways authorities

We want Highways England to play its full part in supporting the delivery of the Government's *Cycling and Walking Strategy*. Alongside Transport Focus's cyclist and pedestrian satisfaction survey, we encourage Highways England, using existing insight processes, to work with it to review particular concerns among these user groups and identify hotspots on the network where there are particular issues.

The designated funds will make a contribution to improving the experience of cyclists and pedestrians using or crossing the SRN, and bus and coach passengers using services on the network, as will enhancement schemes where opportunities are identified. Highways England will collate these insights and the work it is doing in a specific section of its Annual Report covering non-motorised users and integration.

Highways England already has a duty within its Licence to cooperate with local highways authorities, and highway authorities in Scotland and Wales to facilitate the movement of traffic and manage its impacts, and to respond to and manage planned and unplanned disruption to the network. Transport Focus's research has highlighted better integration with other roads as a road user priority not covered explicitly in other metrics. The RIS2 performance specification reinforces the existing Licence duty and Highways England will report on its work with local highways authorities to review diversion routes for unplanned events.

Meeting the needs of all road users	
KPI	***Road user satisfaction*** **Target:** Achieve an 82% road user satisfaction score in 2020-21 and 2021-22, with year on year increases in following years. ***Roadworks information timeliness and accuracy*** **Target:** Achieve 90% accuracy of roadworks information seven days in advance of works by 2024-25, with an increasing trajectory of improvement through RP2 from the level of performance achieved by the end of RP1.
PIs	● Timeliness of information provided to road users through electronic signage: measured as the average time taken to set a signal. ● Ride quality: metric to initially be a subset of the pavement condition metric which captures surface quality. Metric to be developed during years 1 and 2 of RP2, and be in place for year 3, in consultation with Transport Focus to provide a user-centric view of ride quality. ● Working with local highways authorities to review diversion routes for unplanned events.
Commitments	● Review SRUS performance in year 2 of RP2 to determine the road user satisfaction targets for post 2021-22. ● Develop with Transport Focus during RP2 a measure of ride quality which reflects road users' experience of the network. ● Investigate expanding the scope of the timeliness of electronic signage information PI to potentially include the time taken to adjust and clear signs. ● Work with Transport Focus to develop satisfaction surveys for cyclists and pedestrians that can be used, if possible, as the basis of a PI later in RP2. ● Work with Transport Focus to develop satisfaction surveys for logistics and coach managers that can be used, if possible, as the basis of a PI later in RP2. ● Investigate expanding the scope of the working with local highways authorities PI to include diversion routes linked to planned roadworks.

Outcome 6: Achieving efficient delivery

Following the establishment of the new governance framework for the management of the SRN and the five-year RIS cycle, created as part of Roads Reform in 2014, it was originally envisaged that at least £2.6 billion of efficiencies and cost savings could be achieved over a ten-year period. For RP2 and beyond, the intent will be to continue to demonstrate a high value of efficiency that benefits taxpayers through effective and productive delivery, and road users through faster, predictable delivery of schemes.

Measuring success

Highways England's efficiency target in RIS1 was to demonstrate £1.212 billion savings on capital expenditure by the end of RP1. It has provided reporting against this target through:

- **Bottom-up description of efficiency achieved** – presenting case study evidence of the actions it has taken to deliver efficiency.
- **Unit cost information** – Highways England has developed efficiency models based on cost movement information covering smart motorway efficiency, renewals and capital enhancements efficiency.
- **Delivery of the Road Investment Strategy** – Highways England received post-efficient funding, in other words funding levels were set after the removal of expected efficiency. It has reported on its delivery of the investment programme outputs, outcomes and scheme progression within the funds provided.

Following the efficiency review advice from ORR, we have set the objective that during RP2 Highways England should demonstrate £2.304 billion of additional savings on operating and capital expenditure.

This target reflects ORR's judgement based on findings from several pieces of analysis including: three capability reviews; targeted studies including efficiency benchmarks achieved by other regulated companies; a sample-based deep dive review of key cost components; and its experience of monitoring Highways England's efficiency performance in RP1. ORR has the role to review the evidence of the efficiency generated by Highways England during RP2.

As well as demonstrating financial efficiency, we want to ensure that the investment plan schemes are delivered in a timely manner. The RIS2 investment plan sets out which enhancement schemes are expected to start construction (start of works), and which schemes are expected to open for traffic during RP2. Highways England will set out commitment dates in its Delivery Plan for each scheme and for ORR will monitor adherence to these dates within its enhancement scheme and investment programme monitoring processes.

A supporting set of PIs will capture performance in relation to:

- Cost Performance Index
- Schedule Performance Index

These will demonstrate whether schemes in construction are being delivered at or below the original project performance (or cost) baseline, and whether key points in the delivery of schemes have been achieved in line with planned timescales.

Achieving efficient delivery	
KPI	***Total efficiency*** **Target:** Evidence the efficiency target of £2.304bn capital and operational expenditure is demonstrated by the end of RP2.
PI	Earned value metrics for projects in construction ● Cost Performance Index: this is commonly used in the construction industry as a measure of earned value. It is the ratio of budgeted cost of work performed to date to actual cost to date. ● Schedule Performance Index: this is commonly used in the construction industry to measure progress against the agreed schedule. It measures the ratio of value actually delivered (budgeted cost of work performed to date) to value scheduled to be delivered to date.
Commitments	● Investigate and look to develop new or improved metrics to monitor cost and schedule for enhancement scheme development and construction, engaging with ORR.

Part 3
Investment Plan


SPARKHILL
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DOMESTIC GAS BOILER
MANUFACTURER

In 2015, the Government announced the most ambitious programme of roads investment in a generation. RIS2 takes this as its foundation, and builds upon it to produce a programme of investment that is larger and even more thorough than its predecessor.

For the first time, the Department for Transport and Highways England have had four years to study the needs of the SRN and prioritise the measures that the country needs. ORR and Transport Focus have provided informed, independent advice to contribute to our evidence base.

This investment plan sets out the Government's expenditure priorities and the details of what that programme is expected to mean in terms of outputs.

a. Government priorities

Maintenance

RIS2 has identified a growing challenge on our strategic roads. The network that we have was predominantly built in the 1960s and 1970s, and is around 50 years old. In our cities, many of the other structures built in this era are now coming down; in the case of our major infrastructure we must ensure that they continue to stand up, notwithstanding the ever-growing volumes of traffic using the network. As age takes its toll, there must be no deterioration in safety or journey quality.

RIS1 has made sure that the SRN remains safe and serviceable, with large scale programmes of repair and resurfacing. Highways England has prepared for RIS2 by making a wide-ranging analysis of the long-term condition that we can expect if current trends continue. This shows that the need for maintenance will increase, and that we can best limit the cost and the disruption to road users by acting now.

Three particular areas have been identified as needing a substantial increase in investment, driven by the ageing of our assets and the particular pressures caused by the high volumes of traffic using these key roads.

- Structures – bridges, underpasses, retaining walls and similar – will need more extensive renewal works.
- Safety barriers will require replacement at a faster rate to make sure that they remain effective
- The oldest type of concrete road surface ("pavement"), with its distinctive ridged construction, will need to be phased out entirely over several road periods.

This will cost £1.2 billion over RP2, some of which will be secured through efficiencies in other parts of the budget to maintain and renew assets. As a result, England's strategic roads will continue to be amongst the safest in the world.

Completing RIS1 enhancements

RIS1 set in train a transformational programme of investment in our strategic roads. The average road project takes around eight years to get from inception to opening, and the newest commitments made in RIS1 were always expected to be under construction during the period covered by RIS2. Government is keeping its promise to deliver these improvements where they remain value for money, some of which have been critical local demands for decades.

- Pinch-points like the Black Cat junction on the A1 at St Neots and junction 6 on the M42 at Birmingham Airport will be brought up to a modern standard.
- Key regional connections, such as the A30 into Cornwall and the A1 north from

Newcastle, will see their disparate sections of dual carriageway linked together into joined-up, high-quality roads.

- Major new high capacity corridors will link together the different parts of England, including extra motorway capacity to link the Midlands to the South East, and a better A14 to link Felixstowe to the Midlands and North.
- Environmental challenges will be addressed. Planned projects to upgrade cycling around the network will go ahead, and major environmental upgrades like the Stonehenge Tunnel on the A303 will start construction.

Over the next two years, we expect over fifty projects to be in construction, representing the biggest concerted upgrade to our road network in a generation.

Tackling congestion

The proposals set out in this investment plan are intended to tackle congestion. It is widely accepted that it is not possible to outbuild congestion across the whole of the road network; but it is equally true that there are many locations where poor road design or outdated infrastructure condemns thousands to avoidable frustration. RIS2 will address more of the most notorious delays, including Simister Island in Manchester, the Air Balloon in Gloucestershire and around Newark in Nottinghamshire.

The congestion-tackling measures of RIS2, coupled with the projects being completed in RIS1, will lead to major improvements at some of the worst hotspots on our network. Their impact is so large that, taken across the network, it will counter the rising demand for our strategic roads and mean that we expect average network performance will be at least as good in 2025 as it is in 2020.

Levelling up

RIS1 set out to tackle longstanding problems on our road network. RIS2 also looks to the future: not only fixing the network we have but helping to create the economic infrastructure that we need in the years ahead.

In particular, RIS2 makes three major commitments to schemes for delivery through coming road periods that can underpin a wider economic transformation.

- Dualling the A66 between the A1(M) and the M6, creating the first new trans-Pennine dual carriageway since 1971. Overall, the projects delivered through RIS2 should add a third to the strategic road capacity across the Pennines.
- Providing a new crossing allowing the Thames Estuary to flourish as an area in its own right and overcome historic problems of deprivation.
- Improving the A46 'Trans-Midlands Trade Corridor' between the M5 and the Humber Ports. Work in RP2 will create a continuous dual carriageway from Lincoln to Warwick, delivering one of Midlands Connect's key priorities.

The North and Midlands will both benefit greatly from the improvements being committed. Thanks to RIS1, Newcastle is connected to the national motorway network for the first time. In addition to new capacity across the Pennines, we expect to improve motorways around Warrington, Wigan, St Helens and Leeds, as well as key upgrades in Sefton, Sunderland and South Yorkshire. In the Midlands, extra motorway capacity should benefit Stoke, Stafford and Solihull. RIS2 also funds delivery or development of work to improve access to the key East Midlands cities of Nottingham, Derby and Leicester.

RIS1 improved access to ten major ports; RIS2 goes further by offering major strategic interventions that will make it quicker and easier to trade globally. Thanks to the Port Infrastructure Fund, announced in September, work has begun on developing schemes that would upgrade the A2 near Dover and the junctions approaching Felixstowe and Southampton ports. RIS2 will ensure more projects exist to support other key gateways.

Unlocking growth and housing

Infrastructure is vital if our economy is to grow and if new housing is to be built across our nation. In many cases, the local road network (including cycleways and footpaths) will be the main link for new employment spaces and homes, but more sizable developments may require enhancement of the SRN too if new traffic is to be accommodated without imposing unacceptable congestion and safety impacts on existing routes.

The projects committed for funding in this document could support the creation of hundreds of thousands of jobs and homes. These arise not just from large-scale enhancements, but also many of the individual junctions and widenings, several of which could help unlock ten thousand or more new homes or enable major new business developments, while safeguarding the SRN's strategic function.

In supporting this goal, RIS2 aligns with the HIF, adding infrastructure where it can do the most good to support extra housing and working with local authorities to deliver the best results. We expect to make sure that HIF commitments delivered by Highways England have as much priority as other commitments in this document.

In some cases, improvements to the road network are closely tied to specific developments, and the individual developer is expected to contribute to scheme costs. As with RIS1, RIS2 is structured to give such projects the same priority as those fully

funded by government, provided that other parties contribute as expected.

This can extend to road projects that might facilitate an increase in the value of development land more generally, over many years and even decades. In line with other types of transformative infrastructure, we will continue to explore funding contributions from third parties based on the increase in the value of development land that the road project unlocks, whether in the short or longer term.

Improving the environment

Much of our road network was built before modern ideas of environmental mitigation were adopted and which are applied when new road capacity is constructed.
The performance specification has set out our ambition to continue improving the environmental performance of the SRN, and the enhancements listed in this document help to realise that vision.

We have streamlined the system of designated funds, so that there is a single, larger fund for dealing with environmental impacts, including air quality. There is also a fund for Users and Communities, which will continue to support the creation of better facilities for walking and cycling around the network, and make it easier for people to get access to public transport where it uses the SRN.

These projects will improve the lives of thousands of people living near the network, and change the environmental management of our existing roads for the better, moving towards what people rightly expect for new roads. The way in which these funds are operated will change as well, so that environmental groups will play a bigger role in how funds are invested for maximum benefit.

Innovative and future-ready

Making progress against all these priorities will demand innovation on the part of Highways England and its supply chain. Highways England's digital ambitions will see approaches to construction, operations and customer interaction transformed during RP2, driving improvements in safety, efficiency and customer experience.

Highways England will continue to collaborate with government, client bodies and other parties to share best practice and drive continuous improvement in these areas through the Transport Infrastructure Efficiency Strategy.[45]

45 At: www.gov.uk/government/publications/transport-infrastructure-efficiency-strategy-one-year-on


NEW ROAD
LAYOUT
AHEAD

b. Maintenance

The SRN is one of our nation's most important physical assets, valued at over £100 billion. Every day, it carries two-thirds of the miles travelled by HGVs, linking every factory and filling every supermarket shelf. Without this network, Britain cannot function.

This means that maintaining our busiest roads is a critical requirement, and failure to do so would have serious consequences. The collapse of the Ponte Morandi in Genoa and the I-35W Bridge in Minneapolis show that there can be tragic consequences from underinvestment. Highways England monitors the condition of structures on the SRN to ensure they are safe to use and, at its most basic level, a five-year strategy such as RIS2 must prevent the situation where roads have to be closed because they fail safety inspections.

Yet a good strategy for maintenance does more than prevent major asset failure. By investing early, it is possible fix problems efficiently and quickly, often at night when few people are using the road. The longer problems are left, the more work is required to correct them. Once problems are big enough, they can only be fixed through more extensive work, which are more likely to require work during the day, or even the full closure of the road. The more emphasis that is placed on maintenance, the less it costs and the less it disrupts the lives of those who depend on the road.

Examples of cost and user impacts from deferred works where assets do not fail

Deferred work example structure (bridge) and Concrete Pavement renewals

The following scenarios have been tested for planned RP2 renewals:

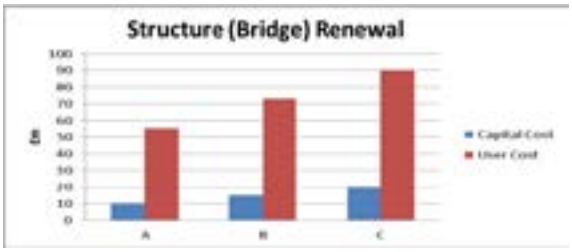
A. **Planned Maintenance** (driven by asset need and best practice Asset Management)

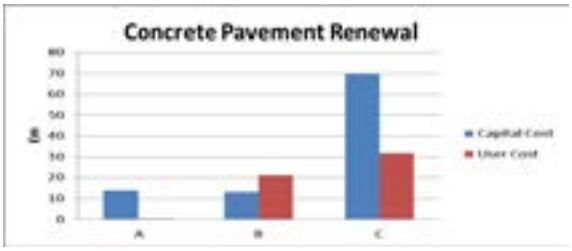
B. **Delayed Maintenance** (still in RP2 but less frequent)

C. **Postponed Maintenance** (push back to RP3) (consider safety implications)

Increasing cost

Scenario	Example Post Tensioned Bridge Renewal (User impact £M)	Example Pavement Renewal (User Impact £M)
A	55	0.4
B	73	21
C	90	32





In preparing RIS2, Highways England has made a detailed assessment of the needs of the road network, and this has highlighted the increasing challenge of an ageing network. On the back of this evidence, we are taking action now to stay ahead of the problems this will present.

The ageing network

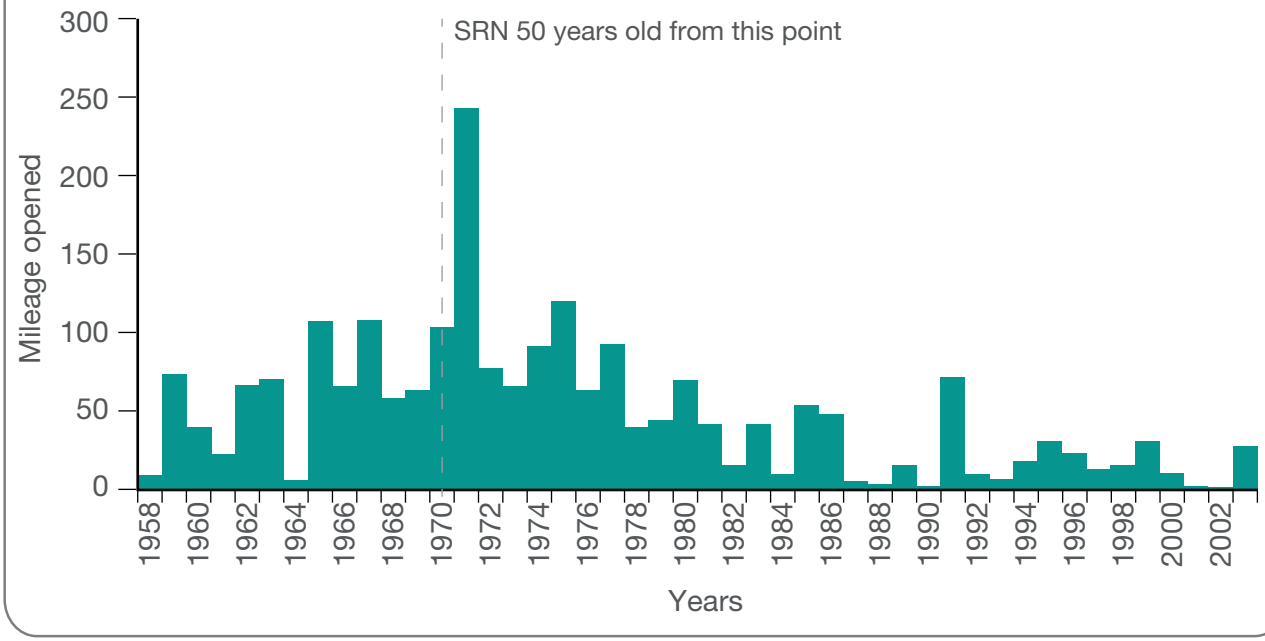
Most of the SRN was built in the 1960s and 1970s, using the techniques available at the time. The development of the motorway network was the greatest civil engineering project of the post-war era, involving roads over mountains and mile after mile of concrete viaducts. But it is only with time that the limitations of some of these techniques has become apparent.

These parts of the network are now around 50 years old, and more elements require maintenance. In addition to regular activities such as resurfacing the road and repainting markings, there is also a need for deeper activity. Waterproofing and bridge bearings must be replaced; salt corrosion must be addressed; and safety barriers reach the end of their design life. These issues become more acute the more heavily trafficked our roads become – and with some sections of the strategic network carrying more than 200,000 vehicles a day, this need becomes acute.

Because Highways England has had almost five years to gather data about its network in preparation for RIS2, we have more information about the extent of this issue than ever before. We can see that a large quantity of additional work will be required within a decade, and that the best way to deal with this is to take action now.

In particular, this analysis has highlighted three key areas where a significant increase in investment is needed, in order to make sure that problems never materialise.

Increasing number of structures requiring remedial work



Case study – Oldbury Viaduct

The M5 Oldbury Viaduct sits at the heart of Birmingham's road network. In 2013, routine pothole filling found unexpected damage to the underlying deck, the structure on which the road itself rests. More than forty years of salt water had seen chlorides percolating into the underlying concrete, meaning that it became much more vulnerable to decay. This meant that this part of the M5 was experiencing potholes at a much higher rate than expected, and also meant that the structure was less able to deal with heavy loads than had been thought.

The damage within the structure had been invisible, but once it was found the scale of the problem became clear. Emergency measures were taken to prop the viaduct up, to ensure there was no risk to the public. Work then began to prepare for one of the largest programmes of structural maintenance ever undertaken on a UK motorway.

Highways England has implemented a comprehensive programme to repair the soffits, decks and deck ends, and to renew the waterproofing whose failure had caused the original problem. Bridge joints were replaced and the pavement resurfaced; and the opportunity was also taken to upgrade vehicle restraint systems, lighting and drainage.

There was no prospect of closing the M5 while this work was done. To enable both the local and motorway network to continue to function, a contraflow system was put in place, with all traffic using either the north or southbound carriageway at a time across two narrow lanes in each direction with a 30mph speed restriction.

The final cost of the work is expected to be over £180 million, making the scheme the largest concrete repair project ever undertaken in the UK.

- Renewing bridges and other structures
- Replacing safety barriers and other forms of vehicle restraint
- Retiring the first generation of concrete pavement

We have made funding this programme the first priority for available resources in RIS2. We will use Lean techniques, coupled with the most effective technologies available, to make best use of these resources.

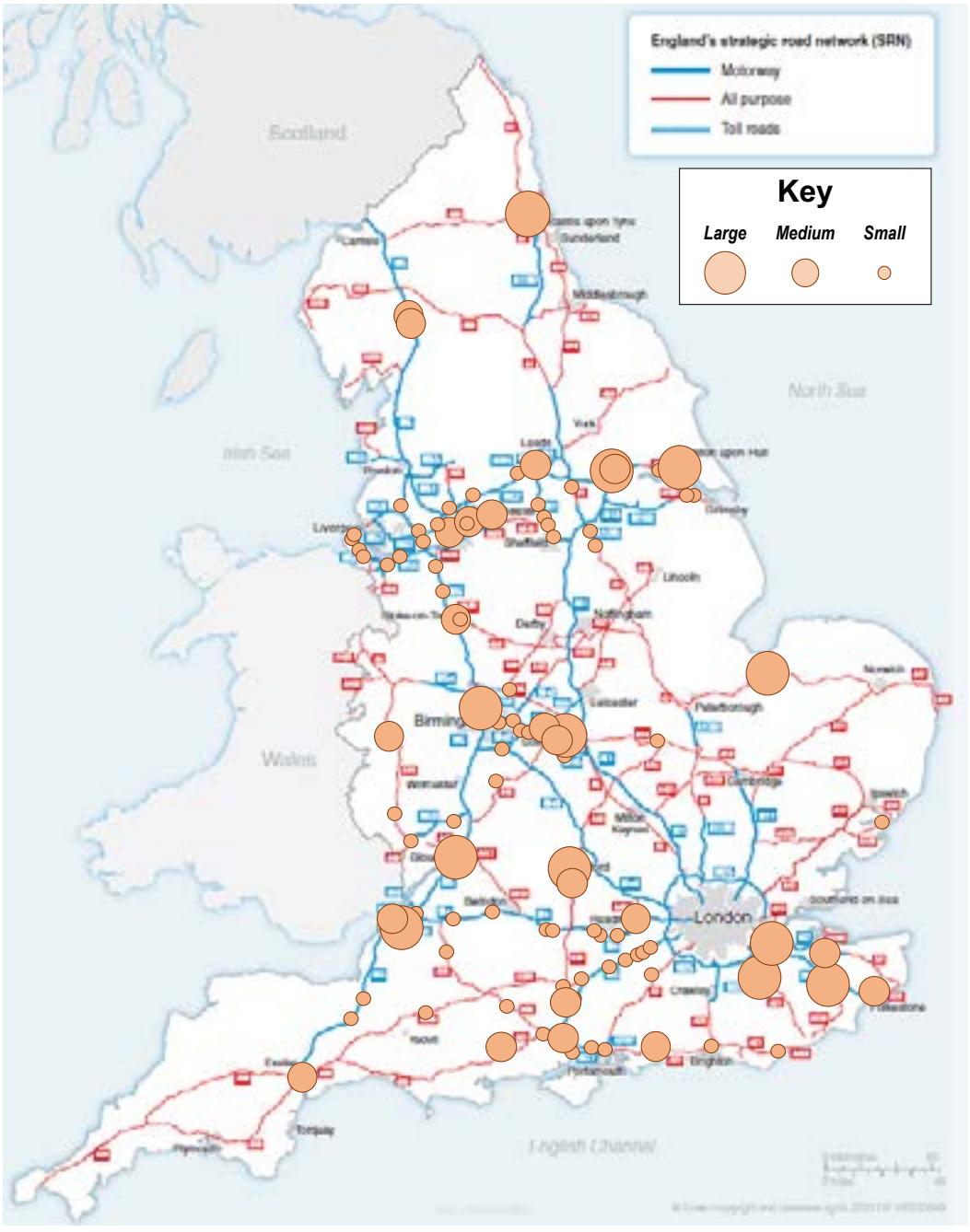
Maintaining bridges and structures

There are over 20,000 bridges, underpasses, retaining walls and other kinds of structure on the SRN. These are the most complex and sensitive elements of the SRN. A single bridge bearing can have to carry a weight of up to 960 tonnes. Given where they are located, many structures are exposed to wind, rain, cold and salt corrosion. Furthermore, many of the largest structures on our network were built in the earliest years of our motorway network, before civil engineers had much experience of what their long-term maintenance needs would be.

When problems develop, it can quickly have an effect on the people using the road: emergency measures can include weight restrictions or lane closures. This can be particularly problematic, since many of the most heavily used structures are on some of the busiest sections of the road network. The Midlands Links in Birmingham, the Exe viaduct in Devon and the Thelwall viaduct over the Manchester Ship Canal are three very large structures that are essential to the communities around them.

Less than 1% of our structures are considered to be in poor condition; and where they are, plans are already in place for action before they become unsafe. But more pre-emptive work is needed to make sure

Indicative mapping of major structures renewed by 2025



that the legacy of 1960s construction does not all materialise at the same time.

We expect to spend in the region of £1 billion renewing structures in RP2, on top of the roundly £500 million required for day-to-day maintenance. This means interventions on an estimated 190 structures. In some cases, this means relatively limited work to nip problems in the bud. In some others, it requires deep intervention, stripping back the structure to its core so that modern solutions can be used to fix sources of risk arising from historic design and construction.

Safety barrier replacement

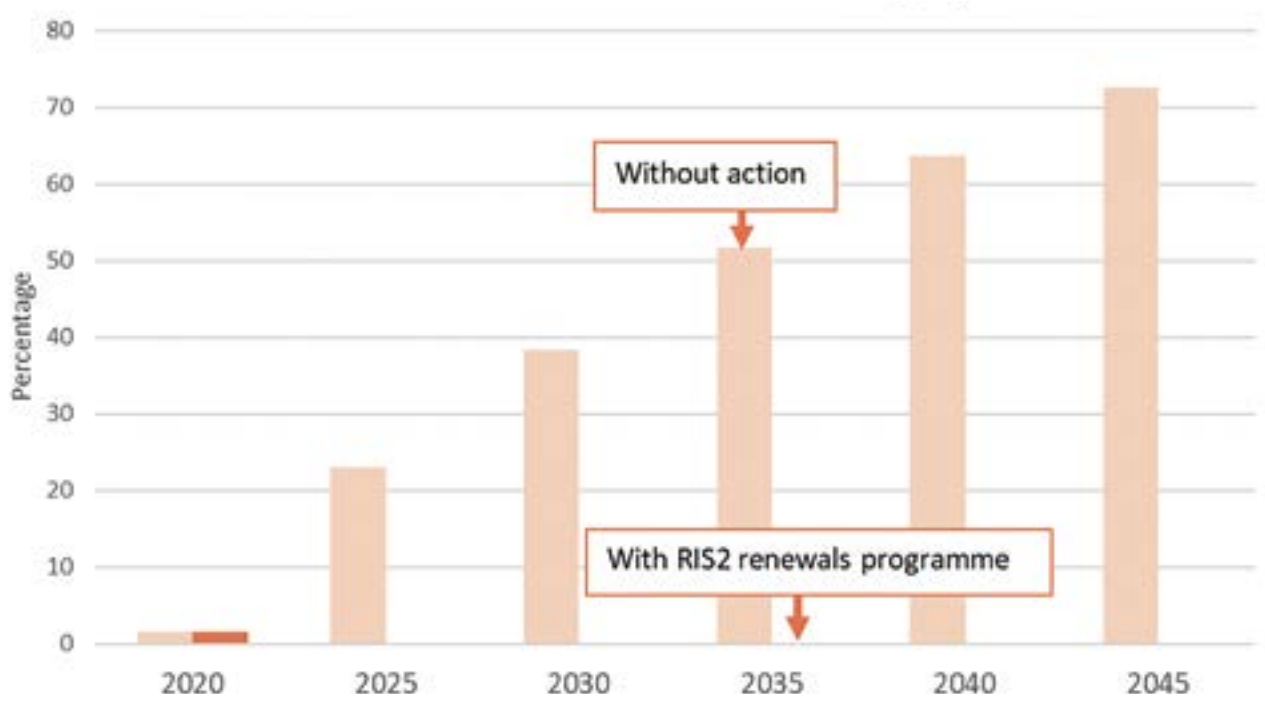
There are nearly 8,000 miles of vehicle restraint systems on the SRN – almost enough to form a continuous line from Land's End to Antarctica. This includes barriers in the middle of the road, and also those at the sides. Three different types of safety barrier are used: wire, steel and concrete.

Steel barriers are the most common, but are also the most vulnerable to corrosion. Most barriers are made of galvanised steel, which can resist rust for many years. But once decay has passed a certain point, it is essential that the barrier is replaced in order for it to do its job. That process occurs fastest in areas where gritting is regularly needed, and where salt accelerates the speed of deterioration.

Without investment, 20% of the network would see its safety barriers degrade to the worst category for safety. We therefore intend to invest up to £450 million between 2020 and 2025 renewing over 1,000 miles of safety barriers – the equivalent of building a wall from London to Middlesbrough every year of RP2. This is enough to ensure that no roads fall into such poor condition.

Because we will be working at scale, as part of a long-term strategy, we expect this to be a much more efficient process than it would be approached on a case-by-case basis.

Crash barriers in worst condition category



Retiring concrete pavement

Concrete was the dream material of the 1960s civil engineer. When our strategic roads and motorways were being built, they laid around 600 lane-miles of concrete pavement, built out of large concrete blocks laid next to one another. At the time, this promised cheap, durable construction; but today most road users are more alert to its weaknesses. As such roads have aged, the sections of concrete have shifted up or down, creating a rise or fall every few yards where the blocks join. Such roads are famed for the distinctive repetitive thumping sound experienced when driving.

Modern concrete road has learnt from this experience, and now uses a continuous-pour technique to create a single, jointless surface. But older concrete roads require constant maintenance to maintain the joints between one concrete block and the next. Today, these roads are safe; but this will no longer be true if they are left to deteriorate.

Furthermore, Transport Focus has gathered the views of people who use the SRN, and this work has highlighted that one of the highest priorities of the travelling public is the

quality of pavement on which they drive. Old-style concrete pavement is notorious amongst drivers for its poor ride quality, even before questions of safety are factored in.

This creates a compelling case to begin retiring this outdated kind of pavement. This is no small task. Switching from old-style concrete to other surfaces requires the full reconstruction of much of the road, and the volume of work required is equivalent to building a motorway. All of this must be accomplished in a way that does not deprive communities of roads that are critical to their way of life.

It will take around 25 years to complete the task in full; but the process begins now, with around £400 million of investment over the period 2020-25. Around half of the old-style concrete pavement on the network will either receive holding repairs, or will be replaced entirely during RP2. Several of our major projects, such as the improvement of the A12 in Essex, will also result in outdated concrete pavement being replaced with an entirely new, modern road surface.

Other areas of maintenance

Although RIS2 prioritises three areas of new maintenance, at least a further £2 billion is expected to be spent on more traditional aspects of renewing and maintaining the network. This includes:

- Around £1.4 billion expected to be spent resurfacing the network, which in turn builds on a substantial package of resurfacing funded during RIS1. This is additional to the money for retiring concrete pavement described above.
- Maintenance of drains and drainage, both to prevent flooding on the network and also to ensure that there is no environmental damage to surrounding areas.
- Repairs to earthworks, to preserve the integrity of the roads that run over them.
- Maintenance to electronic signs and gantries, and replacement of old and outdated lighting where needed.

RIS2 funds the first programme of true long-term planning for the maintenance of the SRN, considering the whole life impacts of the decisions we make. Thanks to this intervention, England's roads will run well for a generation to come.

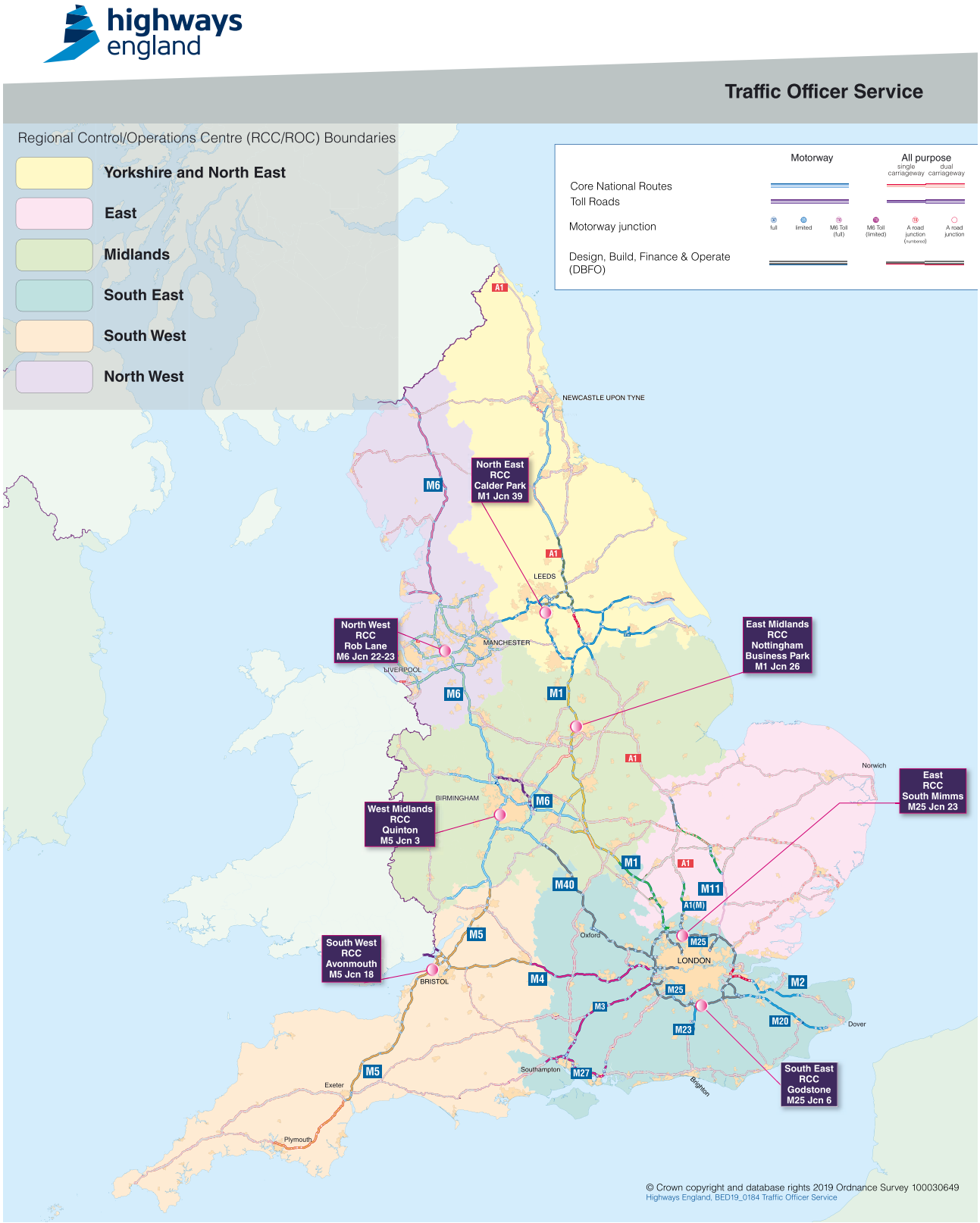
c. Operations

The work of Highways England is increasingly dominated by its operations. Whereas once road management was held to be a matter of tarmac and earthmoving, today it has a more sophisticated role centring on the everyday management of the road network. The traffic officers, patrolling the motorway network 24 hours a day, are the most recognisable part of Highways England to the travelling public.

RIS2 continues to support the development of Highways England into this more operational role. The performance specification has set out what performance requirements have been placed on the organisation to increase the emphasis on live management of the network. This section outlines key financial investments that support this.

Maintaining the traffic officer patrol

More than 1,000 traffic officers currently patrol key sections of the SRN, including all smart motorways. As smart motorways encompass more of the network, the traffic officer patrols will also expand their operations, supporting motorists on a wider range of roads.


highways england
Traffic Officer Service
Regional Control/Operations Centre (RCC/ROC) Boundaries
Yorkshire and North East
East
Midlands
South East
South West
North West
Motorway
All purpose
single carriageway
dual carriageway
Core National Routes
Toll Roads
Motorway junction
full
limited
M6 Toll (full)
M6 Toll (limited)
A road junction (numbered)
A road junction
Design, Build, Finance & Operate (DBFO)
NEWCASTLE UPON TYNE
LEEDS
MANCHESTER
LIVERPOOL
BIRMINGHAM
Norwich
Oxford
LONDON
BRISTOL
Southampton
Exeter
Plymouth
Dover
Brighton
North East RCC Calder Park M1 Jcn 39
North West RCC Rob Lane M6 Jcn 22-23
East Midlands RCC Nottingham Business Park M1 Jcn 26
West Midlands RCC Quinton M5 Jcn 3
East RCC South Mimms M25 Jcn 23
South West RCC Avonmouth M5 Jcn 18
South East RCC Godstone M25 Jcn 6
M1
M2
M3
M4
M5
M6
M11
M20
M23
M25
M27
M40
A1
A1(M)
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Highways England, BED19_0184 Traffic Officer Service

Dealing with extreme weather

Extreme weather has the potential to cause extreme disruption to the road network. This is especially true in the north of England, and in exposed areas. In the first three months of 2018, the A66 was closed on seven occasions because of snow. It is expected that there will be an increase in the prevalence and severity of extreme weather in future years, with further adverse impacts on operations.

To help tackle this challenge, RIS2 will fund the replacement of the existing fleet of gritting trucks and snowploughs, making sure that our roads can keep up with the demands upon them. We also expect to invest in replacing the existing network of weather stations, to make sure that there is more accurate information available to manage weather-related incidents in real time. This should mean that Highways England is well-positioned to deal with whatever the weather will throw at it.

Smart strategic roads

The long-term future of Highways England's network is not like its past. Once, the role of a roads operator was about the stewardship of inert masses of concrete and tarmac. Today, it is increasingly about the active management of traffic, the use of live data and the actions of staff on-road to deliver a real-time service.

This change in role leads to a shift in how the road is physically built, which will continue to evolve as the nature of future technology becomes clearer. It is still too early to talk with confidence about what the highway of the future will look like in full; but for RIS2 we know some features that are almost certain to be involved. These make sensible investments, and will increasingly become part of the backbone of Highways England's operations.

- We will continue to install high-capacity communications links as part of new road construction. The ability to send information up and down the road network will underpin the work of traffic control centres and on-road teams.
- We will continue to link up modern on-road technology into a coherent network. Highways England will need to draw out the synergies that this offers, including filling gaps in different networks to provide a continuously managed service to road users where relevant.
- We will ensure that traffic information data continues to be readily accessible to the public, creating the necessary back-office functions to ensure that the information gathered about the SRN connects readily to a wide variety of users.

We expect future RIS to continue investing in smart roads. We also expect other UK highways authorities to look to Highways England for leadership as they begin modernising their own networks. It is therefore vital that Highways England invests in the staff and skills necessary to become one of the world's most tech-savvy highway operators. Highways England will issue an updated *Design Manual for Roads and Bridges* before the start of RP2, and will keep this document under review with an eye to ensuring the early and effective incorporation of emerging technology.

We consider it likely that the next RIS, written with the benefit of five years' more knowledge about the future of mobility, will allow us to make wide-ranging commitments to the application of new standards. It is possible that radical technological change could mean this moment needs to come faster. RIS2 therefore reserves the right to accelerate a programme of technological adaptation, balanced by a reprioritisation of other planned activities so its impact is financially neutral for Highways England, without the funding settlement being formally reopened.

d. Enhancements

Britain has long relied on its SRN. Key motorways, such as the M1, M6, M62 and M25, tie our nation together. Principal 'A' roads such as the A11 and A30 are critical links by which whole counties reach the wider world. Some roads, such as the A14 and the A34, have evolved to become critical links through which our nation trades with the wider world.

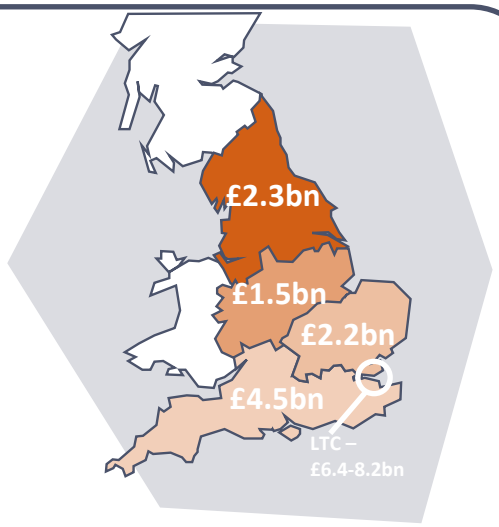
The demands we make of our roads continue to evolve and change; and we continue to invest in updating our network accordingly. We also continue to tackle historic problem spots, including many that past programmes have judged too difficult to fix. In order to do this, we are committing to some of the most ambitious projects since the creation of the motorway network.

RIS2 will

Start or complete £14.7bn of upgrades, including the Lower Thames Crossing

Begin planning 32 more projects – half of which by value are in the North and Midlands.

Transform our roads with the biggest roads project of the 21st century – the Lower Thames Crossing – and the biggest ever environmental improvement – the Stonehenge Tunnel



Tie our nation closer together

Belfast	Felixstowe
Glasgow	Dover
Kent	Essex
Cardiff	London
Cornwall	Bristol

Link the cities of the north and Midlands with modern, four-lane motorways

Over 100 junctions upgraded

More than 100,000 houses supported

Improve links to 14 ports and 7 airports

The nature of commitments in RIS2

A RIS is built around a series of investment commitments to specific infrastructure projects. Unlike historic infrastructure programmes, a RIS makes clear and accountable promises about which projects are expected to proceed and by when. This process for planning strategic road investment is amongst the most transparent and explicit in the world.

Whereas historic infrastructure programmes have promised action at an unspecified point in the future, RIS2 is built around a structure of commitments that expect projects to enter construction by 1 April 2025. The progress against this is monitored by the Department for Transport and ORR, with regular updates to Parliament.

Project categorisation

The projects listed in the investment plan are categorised as follows:

- **Under construction** – construction of this project is underway at the time of publication of RIS2.
- **Committed for RP2** – construction of this project is expected to start by 1 April 2025.
- **Smart motorways subject to stocktake** – the sequencing of smart motorway projects will be revisited in light of the smart motorway stocktake when it is concluded. Those that have yet to start major works or which are still in development may have to be rescheduled subject to the findings of the stocktake. Highways England will provide more detail on the status of individual projects later this year.
- **Pipeline for RIS3** – these are proposals that Highways England will develop during RP2 so that they could enter construction in RP3. Funding for construction of these schemes has not been committed.

We are committing funding to deliver the schemes named in RIS2 on the assumption that they continue to demonstrate a strong business case and secure the necessary planning consents. Nothing in the RIS interferes with the normal public planning consent process. They must remain deliverable and offer sufficient value for money to justify public investment. Where third party funding is required, progress will depend on this funding being provided.

We will hold Highways England to account on the delivery on the commitments set out in RIS2, but also on their ability to identify schemes that no longer meet the above tests and therefore need to be substantially reconsidered. Given the degree of analysis and design work already completed for RIS2 schemes, however, we would expect these circumstances to be minimal" with "the extent to which these occurs will be minimal.

Dealing with change

Such transparency about commitments creates challenges that do not exist in other parts of the infrastructure sector. Over the course of RP2 it is certain that there will be events – positive and negative – which could not be predicted when RIS2 was set. We aspire for most of these events to be positive, reflecting Highways England's constant efforts to generate efficiency.

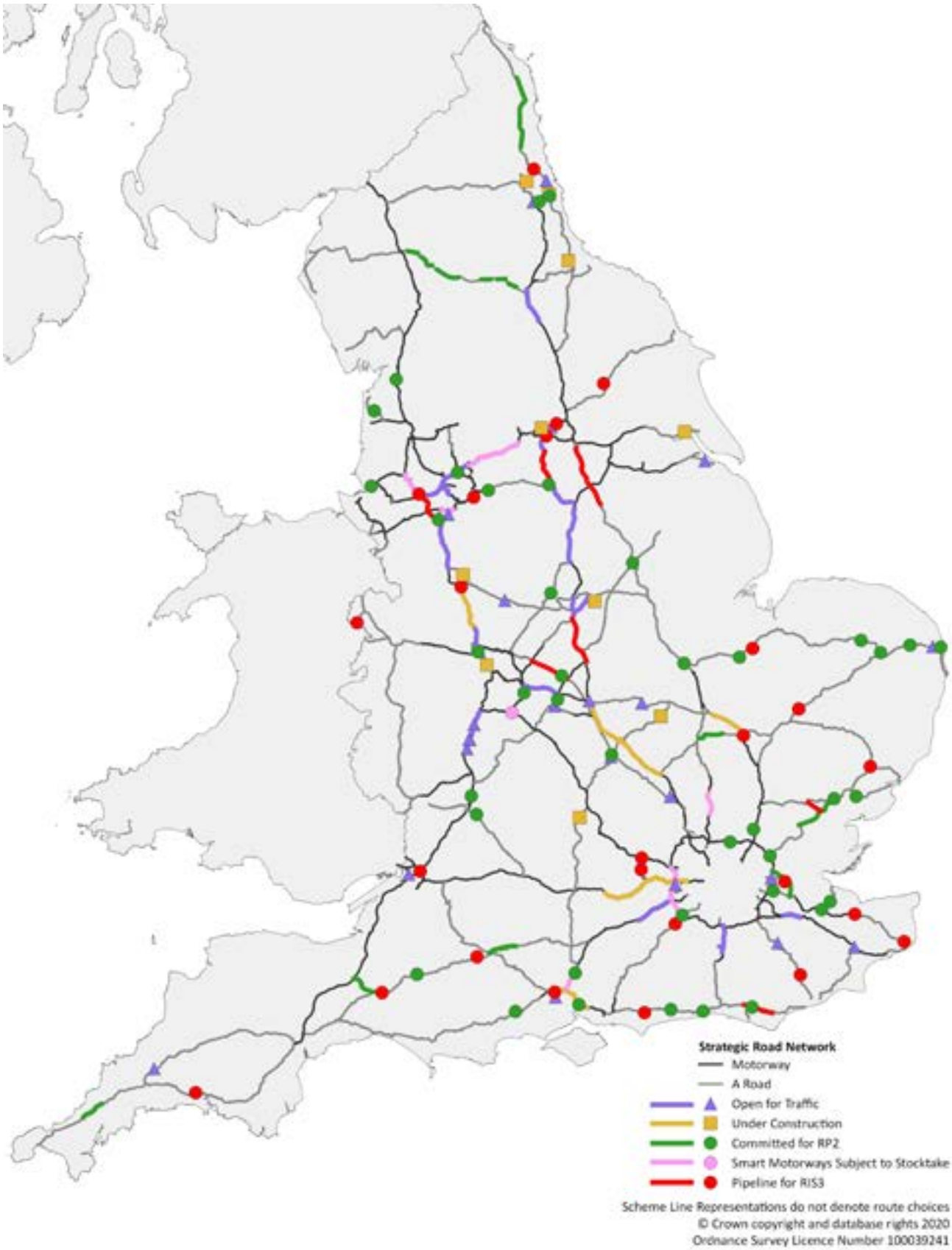
However, it is also possible that events entirely beyond the control of Highways England, such as the global price of oil, may affect the overall cost of the roads programme, and could lead to situations where the funds committed to 2025 in RIS2 are no longer sufficient to deliver all of the outputs listed in this document to the original timescales.

The funding settlement of a RIS is fixed, and defended in law, to ensure that long-term infrastructure plans are not sacrificed to fill short-term budget gaps. RIS2 continues this principle. As a result, unexpected financial pressures would necessarily have to be managed through the scheduling of work. Should government decide to specify new tasks for Highways England to deliver, this would need to be covered by additional funding.

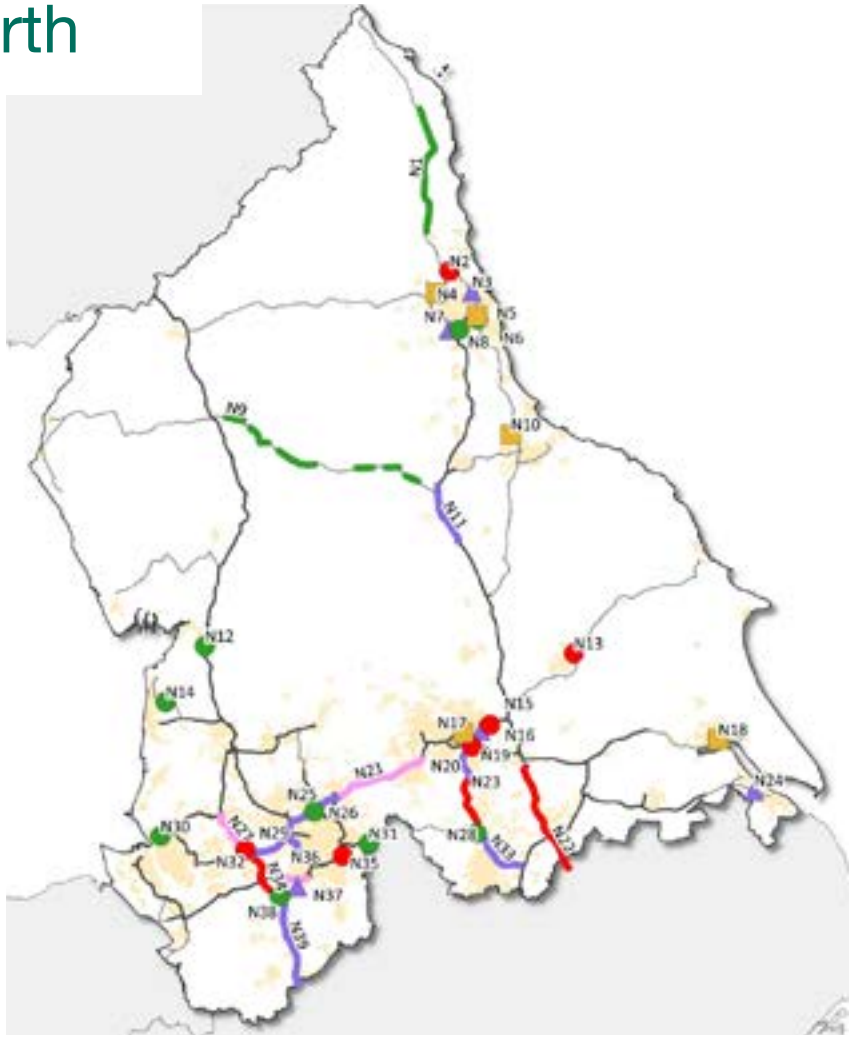
We have aimed to be transparent about this possibility when setting RIS2. Whereas RIS1 promised that its projects would start by the end of the period, we now wish to be clear that there is a possibility that external factors could delay the start of some projects beyond 2025. We also want to ensure that this operational reality does not undermine government's commitment to act – and that the promises made in RIS2 continue to stand regardless of the challenges met along the way. The commitments made in RIS2 should therefore be assumed to continue into RIS3, provided that the conditions above continue to be met.

The maps that follow show the locations of all schemes committed to by RIS1 and RIS2, and proposals in the pipeline for RIS3. RIS1 schemes that are already open for traffic are not described in this document. Proposals in the pipeline for RIS3 are listed in as part of the Strategic Research and Development section of the investment plan. Only schemes that are committed for investment during RP2 and planned smart motorway schemes (subject to current stocktake) are described in more detail in this section.

Whole Strategic Road Network of Schemes



The North



Urban Areas

SRN Motorways
SRN A-Roads

RIS1 Open for Traffic

N3 A19/A1058 Coast Road
N7 A1 Coal House to Metro Centre
N11 A1 Leeming to Barton
N16 M1 Junction 45 Improvement
N20 M1 Junctions 39-42
N24 A160/A180 Immingham
N25 M60 Junction 8 to M62 Junction 20
N29 M62 Junctions 10-12
N33 M1 Junctions 32-35A
N37 A556 Knutsford to Bowdon
N39 M6 Junctions 16-19

Committed for RP2

N1 A1 Morpeth to Ellingham
N6 A19 Down Hill Lane
N8 A1 Birtley to Coal House
N9 A66 Northern Trans-Pennine
N12 M6 South Lancaster Growth Catalyst J33a (HIF)
N14 A585 Windy Harbour to Skippool
N26 M60/M62/M66 Simister Island
N28 A61 Westwood Roundabout
N30 A5036 Princess Way
N31 Mottram Moor Link Road & A57 Link Road
N38 M6 Junction 19

Under Construction

N4 A1 Scotswood to North Brunton
N5 A19 Testos
N10 A19 Norton to Wynyard
N17 M621 Junctions 1-7
N18 A63 Castle Street

Smart Motorways Subject to Stocktake

N21 M62 Junctions 20 - 25
N27 M6 Junctions 21A-26
N36 M56 Junctions 6 - 8

RIS3 Pipeline

N2 A19 North of Newcastle Junctions
N13 A64 Hopgrove
N15 M1 Leeds Eastern Gateway
N19 M1/M62 Lofthouse Junction
N22 A1 Doncaster-Darrington
N23 M1 Junctions 35A-39 Sheffield to Wakefield extra capacity
N32 M6 Junction 22
N34 M6 Junctions 19-21A
N35 Manchester South East Junction improvements

A66 Northern Trans-Pennine

The A66 is a highway that ties our nation together. It connects Scotch Corner on the A1(M) with Penrith on the M6, making it the most important route to get from east to west for many of England's northern counties. Because of its position at the heart of the UK, it is the route of choice for many drivers in Scotland, Northern Ireland and the East of England who are looking to make long-distance journeys. For a manufacturer in Belfast, the A66 is the road that takes their goods to China.

Government first proposed dualling the A66 in 1946. Although piecemeal progress has been made over the intervening decades, through RIS2 we formally commit to complete this project. We have recently consulted on early-stage designs, allowing us to commence construction during the period covered by RIS2. Unlike similar upgrades in the past, we are planning this work as a single coordinated programme, without lengthy gaps between improvements at individual locations.

Under construction

A1 Scotswood to North Brunton – narrow lane widening between junction 74 (Scotswood) and junction 79 (North Brunton) to allow three lanes of traffic through the junctions, and four lanes between some junctions.

A19 Testos – a grade separated junction between the A19 and A184, providing free-flowing access to the southern end of the Tyne Tunnel.

A19 Norton to Wynyard – widening of the A19 Billingham bypass to three lanes, between the A139 and the A689, including replacement of the concrete surface with low-noise surfacing.

M621 Junctions 1-7 – junction enhancements and localised widening of sections of the M621 in central Leeds.

M62 Junctions 20-25 – upgrading the M62 to smart motorway between junction 20 (Rochdale) and junction 25 (Brighouse) across the Pennines. Together with other smart motorways in Lancashire and Yorkshire, this will provide a full smart motorway link between Manchester and Leeds, and between the M1 and the M6.

A63 Castle Street – grade separation of the A1079 Mytongate junction in Hull to reduce congestion and improve safety; improvements to the surrounding roads including new pedestrian and cycle access across the A63.

Committed for RP2

A1 Morpeth to Ellingham – upgrading multiple sections of the A1 to dual carriageway to provide continuous high quality dual carriageway from Newcastle to Ellingham, north of Alnwick.

A19 Down Hill Lane – significantly enhanced capacity on the junction between the A19 and the A1290 in Sunderland, supporting local plans for an International Advanced Manufacturing Park.

A1 Birtley to Coal House – route widening of the A1 south of Gateshead to dual-three lanes, including the replacement of the Allerdene Bridge. Linking with other schemes completed nearby, this will provide three lanes of capacity from the Metro Centre to the A194(M) interchange.

A66 Northern Trans-Pennine – upgrading the remaining six single carriageway sections of the A66 between the A1(M) at Scotch Corner and the M6 at Penrith, creating a continuous dual carriageway across the Pennines.

A585 Windy Harbour to Skippool – a new offline bypass of the village of Little Singleton, reducing the impact of traffic on the local community and removing a major bottleneck on the main road to Fleetwood.

M60/M62/M66 Simister Island Interchange – improvement of the intersection between the M60 (junction 18), M62 and M66 north of Manchester that improves the traffic flow on the M60.

A61 Westwood Roundabout – improvement to the roundabout between the A61 and A616 (north of Sheffield) to reduce congestion and improve the flow of traffic. This delivers the outcome originally expected of the A61 dualling commitment in RIS1.

A5036 Princess Way – access to Port of Liverpool: comprehensive upgrade to improve traffic conditions on the main link between the Liverpool docks and the motorway network.

Mottram Moor Link Road & A57 Link Road – providing a dual carriageway bypass around the town of Mottram near Manchester. This will also serve as an alternative route for traffic heading north-south on the A57.

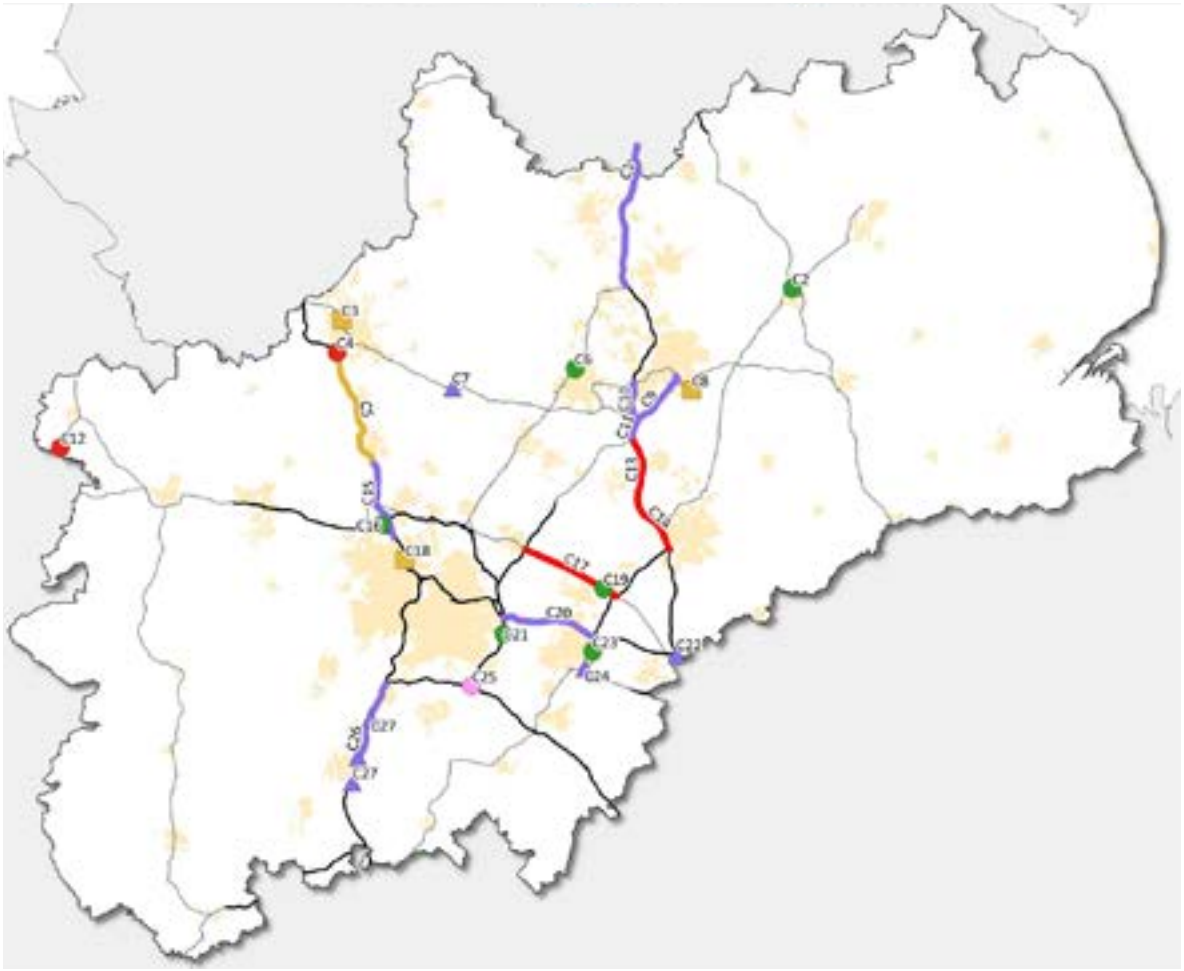
Smart motorways subject to stocktake

M62 Junctions 20–25 – upgrading the M62 to smart motorway between junction 20 (Rochdale) and junction 25 (Brighouse) across the Pennines. Together with other smart motorways in Lancashire and Yorkshire, this will provide continuous extra motorway capacity between Manchester and Leeds, and between the M1 and the M6.

M6 Junctions 21A–26 – upgrading the M6 to smart motorway between junction 21A (M62 Croft Interchange) and junction 26 (Wigan).

M56 Junctions 6–8 – upgrading the M56 to smart motorway between junction 6 (Manchester Airport) and junction 8 (A556). Together with other improvements nearby, this forms part of a comprehensive upgrade to the main gateway to both the south of the Manchester City region and the International Gateway at Manchester International Airport.

The Midlands



Urban Areas

SRN Motorways
SRN A-Roads

Scheme Line Representations do not denote route choices

RIS1 Open for Traffic

C1	M1 Junctions 28-31
C7	A50 Uttoxeter (Phase A)
C9	A453 Widening
C10	M1 Junctions 24-25
C11	M1 Junctions 23A-24
C15	M6 Junctions 10a-13
C20	M6 Junctions 2-4
C22	M1 Junction 19 improvement
C24	A45-A46 Tollbar End
C26	M5 Junctions 4A-6
C27	M5 Junctions 5, 6 & 7 Junction upgrades

Under Construction

C3	A500 Etruria
C5	M6 Junctions 13-15
C8	A52 Nottingham Junctions
C18	M6 Junction 10

Committed for RP2

C2	A46 Newark Bypass
C6	A38 Derby Junctions
C16	M54-M6 Link Road
C19	A5 Dodwells to Longshoot
C21	M42 Junction 6
C23	A46 Coventry Junctions

Smart Motorways Subject to Stocktake

C25	M40 / M42 interchange

RIS3 Pipeline

C4	M6 Junction 15 Potteries Southern Access
C12	A483 Pant Llanymynech bypass
C13	M1 North Leicestershire extra capacity
C14	M1 Leicester Western Access
C17	A5 Hinkley to Tamworth

A46 Newark Bypass

Midlands Connect has highlighted the role of the A46 in connecting the Midlands, running from Lincoln to Gloucestershire via Leicester and Coventry. Much of this road is already high quality dual carriageway, and by filling in key sections it would be possible to create a coast-to-coast highway without the need for major new road-building across open countryside.

The single greatest gap in this route is the A46 at Newark. An upgraded dual carriageway opened in 2012, but which stopped three miles short of the A1. We now propose to fill in this gap, eliminating regular traffic jams and creating a consistently good connection from the A1 at Newark to the M1 at Leicester. Coupled with the upgrades committed in RIS1, this means that the A46 dual carriageway will run unimpeded from Lincoln to Warwick.

We are also developing a proposal to improve the A1 in South Yorkshire. Together with the upgrade to the A46, this would effectively create a bypass to allow traffic to avoid the M1 around Nottingham, Sheffield and Leeds, opening up a high quality corridor for long-distance journeys to and from Scotland, the North East and Northern Ireland.

Under construction

A500 Etruria – widening of the A500 between Wolstanton and Porthill junctions near the Etruria Valley development.

M6 Junctions 13-15 – upgrading of the M6 to smart motorway between junction 13 (Stafford) and junction 15 (Stoke south). This provides continuous extra motorway capacity between Birmingham and Stoke-on-Trent.

A52 Nottingham Junctions – a package of measures to improve the junctions along the length of the A52 in Nottingham, including signalisation and junction reconstruction.

M6 Junction 10 – additional capacity on junction 10, including the replacement of both bridges allowing the widening of the roundabout to four lanes.

Committed for RP2

A46 Newark Bypass –improve the capacity of the single carriageway and junctions of the A46 at Newark, and provide better links to the A1.

A38 Derby Junctions – replacement of three roundabouts on the A38 in Derby with grade-separated interchanges, removing the last at-grade junctions on the A38 in the East Midlands and removing the conflict between local and strategic traffic.

M54-M6 Link Road – adding a north-facing access between the M54 and the M6 around junction 10A and 11.

A5 Dodwells to Longshoot – widening of a short section of the A5 near Hinckley, which carries the traffic of both the A5 and A47, to dual carriageway. This scheme will need to take into account evolving proposals for the A5 Hinckley to Tamworth.

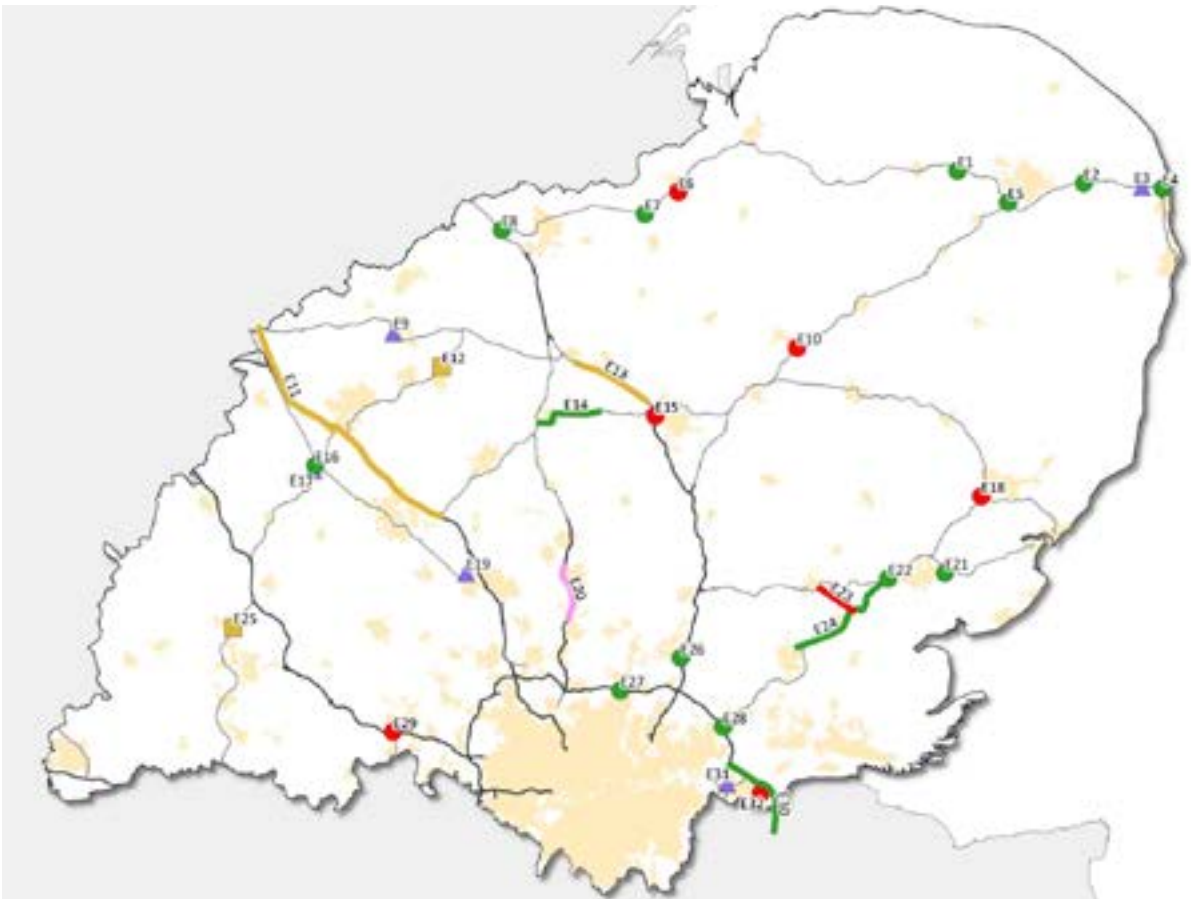
M42 Junction 6 – upgrade of the M42 junction 6 near Birmingham airport, allowing better movement of traffic on and off the A45, supporting access to the airport and preparing capacity for the new HS2 station.

A46 Coventry Junctions – grade separation of the Binley and Walsgrave roundabouts on the A46 near Coventry, upgrading the trunk sections of the A45/A46 between the M6 and M40 to a consistent standard.

Smart motorways subject to stocktake

M40/M42 Interchange – introduction of smart motorways on the approaches to the M40/M42 interchange: the M40 from junction 16 and the M42 from junction 3 to 3A, plus the introduction of all-lane running to the existing section between junctions 3A and 4 on the M42.

The East



SRN Motorways
SRN A-Roads

Urban Areas

RIS1 Open for Traffic

E3 A47 Acle Straight
E9 A14 Kettering bypass widening
E17 A43 Abthorpe Junction
E19 A5 to M1 link (Dunstable northern bypass
E31 M25 Junction 30

Under Construction

E11 M1 Junctions 13-19
E12 A45/A6 Chowns Mill Junction
E13 A14 Cambridge to Huntingdon
E25 A34 Newbury to Oxford Enhancements

Committed for RP2

E1 A47 North Tuddenham to Easton
E2 A47 Blofield to North Burlingham
E4 A47 Great Yarmouth Junctions
E5 A47 Thickthorn Junction
E7 A47 Guyhirn Junction
E8 A47 Wansford to Sutton
E14 A428 Black Cat to Caxton Gibbet
E16 A5 Towcester Relief Road

E21 A120 Tendring / Colchester Borders Garden Community (HIF)
E22 A12 Colchester / Braintree Borders Garden Community (HIF)
E24 A12 Chelmsford to A120
E26 M11 Junction 7a
E27 M25 Junction 25
E28 M25 Junction 28
E30 Lower Thames Crossing

Smart Motorways Subject to Stocktake

E20 A1(M) Junctions 6 - 8

RIS3 pipeline

E6 A47/A1101 Elm Road Junction
E10 A11 Fiveways Junction
E15 M11 Junction 13 Cambridge West
E18 A12/A14 Copdock Interchange
E23 A120 Braintree to A12
E29 A404/M40 Junction 4 High Wycombe
E32 Tilbury Link Road

Lower Thames Crossing

RIS1 proposed to investigate a new crossing of the River Thames, to relieve the heavy congestion at Dartford. This not only creates serious delays for those seeking to cross the Thames, but also serves as a barrier to the development of the Thames Estuary – an area with significant levels of deprivation.

In late 2018, Highways England outlined its detailed plans for a new tunnel between Essex and Kent, coupled with supporting link roads. This will provide three lanes across the Thames in each direction, almost doubling capacity east of the Blackwall Tunnel.

This project will also have a national impact, allowing freight traffic to the Continent to bypass Dartford, and have an uncongested route to Dover. We expect to investigate linked improvements on the A2 into Kent as part of the pipeline of work for the next RIS.

Under construction

M1 Junctions 13-19 – upgrading the M1 to smart motorway between junction 13 (Milton Keynes South) and junction 19 (M6 Catthorpe interchange). Junctions 16-19 are already complete and fully open to traffic.

A45/A6 Chowns Mill Junction – upgrade of the Chowns Mill junction between the A45 and A6 in Northamptonshire.

A14 Cambridge to Huntingdon – a major upgrade to the A14 between the A1 and north Cambridge, widening the road to three lanes, providing a new bypass around Huntingdon, creating distributor roads for local traffic and remodelling key junctions along the route.

A34 Newbury to Oxford Enhancements – a collection of safety improvements to the A34 in Oxfordshire and north Berkshire, including improved laybys.

Committed for RP2

A47 North Tuddenham to Easton – dualling of the single carriageway section of the A47 between Norwich and Dereham, linking together two existing sections of dual carriageway.

A47 Blofield to North Burlingham – upgrade of the A47 east of Norwich to fill a gap in the dual carriageway section between Norwich and the Acle Straight.

A47 Thickthorn Junction – improvement of the interchange between the A47 and A11, improving access into Norwich.

A47 Guyhirn Junction – creation of a new, larger junction linking the A47 and A141.

A47 Wansford to Sutton – dualling of the A47 between the A1 and the dual carriageway section west of Peterborough.

A47 Great Yarmouth Junctions – the scope of this scheme is under review in light of the new Great Yarmouth third river crossing. Originally, this proposed to improve the Vauxhall and Gapton roundabouts in Great Yarmouth; but the effects of the new crossing mean that these improvements no longer match the expected pattern of traffic. The scheme will be redesigned to take new circumstances into account.

A428 Black Cat to Caxton Gibbet – dualling of remaining single carriageway section between Cambridge and the M1, including three grade separated junctions: one at the junction of the A1 and A421 (Black Cat); a second at Cambridge Road / B1428 east of St Neots; and a third at the junction of the A428/A1198 at Caxton Gibbet. The Black

Cat interchange will provide free-flowing movements for traffic on the A1 and the A421/A428.

A5 Towcester Relief Road – support for a developer-led scheme providing an alternative route around Towcester in Northamptonshire.

A12 Chelmsford to A120 – widening the A12 to three lanes between junction 19 (north of Chelmsford) and junction 25 (A120 interchange). This may include delivery of additional improvements around the site of the Colchester/Braintree Border Garden Community, subject to support from the HIF. This scheme will need to take into account evolving proposals for the A120 Braintree to A12.

M11 Junction 7a – construction of a new junction to the east of Harlow, improving access to the surrounding areas and reducing traffic on the nearby junction 7. This project is being delivered by Essex County Council, subject to a funding arrangement with Highways England.

M25 Junction 25 – upgrade of the junction between the M25 and A10 at Cheshunt, providing greater capacity for traffic.

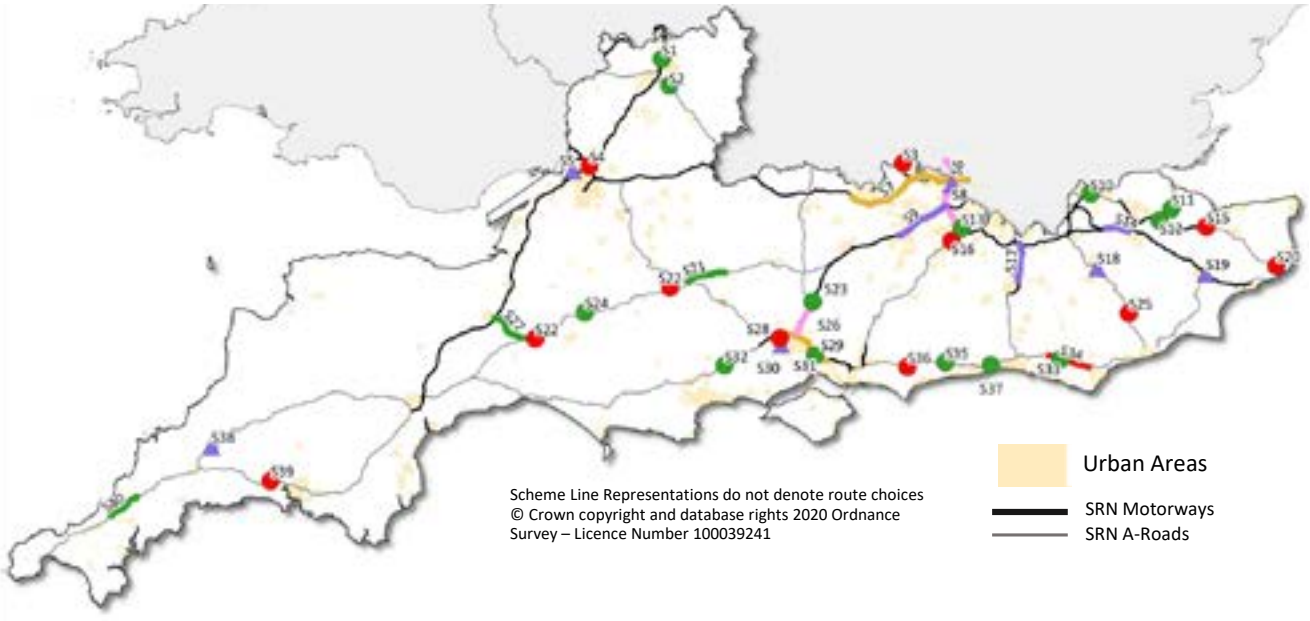
M25 Junction 28 – upgrade of the junction between the M25 and A12 in Essex, providing a free-flowing link from the northbound M25 to the eastbound A12.

Lower Thames Crossing – a new crossing of the River Thames between Kent and Essex, together with supporting roads linking to the M25, A13 and M2.

Under construction

A1(M) Junctions 6–8 – introduction of smart motorway on the existing two-lane section of the A1(M) around Stevenage to provide a third lane of capacity.

The South and West



Open for Traffic

S5 M49 Avonmouth Junction
S8 M4 Heathrow slip road
S9 M3 Junctions 2-4A
S14 M20 Junctions 3-5
S17 M23 Junctions 8-10
S18 A21 Tonbridge to Pembury
S19 M20 Junction 10a
S30 M271 / A35 Redbridge roundabout upgrade
S38 A30 Temple to Carblake

Under Construction

S7 M4 Junctions 3-12
S29 M27 Junctions 4-11

Committed for RP2

S1 M5 Junction 10 and Link Road (Gloucestershire) (HIF)
S2 A417 Air Balloon
S10 A2 Bean and Ebbsfleet
S11 A249: Swale Transport Infrastructure (HIF)
S12 M2 Junction 5
S13 M25 Junction 10
S21 A303 Amesbury to Berwick Down
S23 M3 Junction 9
S24 A303 Sparkford to Ilchester
S27 A358 Taunton to Southfields
S31 M27 Junction 8
S32 A31 Ringwood
S33 A27 East of Lewes Package
S35 A27 Arundel Bypass
S37 A27 Worthing and Lancing Improvements
S40 A30 Chiverton to Carland Cross

Smart Motorways Subject to Stocktake

S6 M25 10 – 16
S26 M3 9 – 14

RIS3 Pipeline

S3 A404 Bisham Junction
S4 Severn Resilience package
S15 A2 Brenley Corner
S16 A3/A247 Ripley South
S20 A2 Dover Access
S22 A303 Phase 2 upgrade
S25 A21 Safety Package
S28 M27 Southampton Access
S34 A27 Lewes to Polegate
S36 A27 Chichester Improvements
S39 A38 Trerulefoot - Carkeel safety package

A303 Amesbury to Berwick Down (Stonehenge Tunnel)

Stonehenge is a site of national and international significance whose setting has long been affected by the proximity of a major route to the South West. The construction of a two mile long tunnel as the road passes Stonehenge will begin in RP2. This will be the largest environmental improvement ever made to the UK road network and will transform the setting of the monument. It will also address one of the major pinchpoints for road users on the A303 corridor.

RP2 will also see work continue on planning further enhancements to meet the commitment to create a high quality connection to the South West. To allow a focus on the delivery of the Tunnel and to limit disruption to those who use this route, the next phases of construction are likely to begin as the Tunnel completes.

Under construction

M4 Junctions 3–12 – upgrading of the M4 to smart motorway between junction 3 (Uxbridge) and junction 12 (west of Reading), linking Reading and Heathrow.

M27 Junctions 4–11 – upgrading the M27 to smart motorway between junction 4 (M3 interchange) and junction 11 (Fareham), linking with the smart motorway scheme on the M3.

Committed for RP2

A417 Air Balloon – connecting the two dual carriageway sections of the A417 near Birdlip in Gloucestershire, taking account of both the environmental sensitivity of the site and the importance of the route to the local economy.

A2 Bean and Ebbsfleet – improvements to junctions on the A2 near Bluewater to enable major developments in the vicinity of Ebbsfleet. Construction is part-funded by a local developer.

M2 Junction 5 – additional capacity for the junction, through improvements to slip roads and enhanced junction approaches.

M25 Junction 10 – improvement to the Wisley interchange to allow free-flowing movement, together with improvements to the neighbouring Painshill interchange on the A3 to improve safety and reduce congestion.

A303 Amesbury to Berwick Down – construction of a twin-bored tunnel as the road passes Stonehenge, coupled with a dual carriageway bypass for Winterborne Stoke to link the existing dual carriageway at Berwick Down.

M3 Junction 9 – upgrade to the junction to allow free movement from the A34 to the M3.

A303 Sparkford to Ilchester – dualling of a single carriageway section of the A303, linking together the Sparkford and Ilchester bypasses.

A358 Taunton to Southfields – creating a dual carriageway link from the M5 at Taunton to the A303, incorporating upgraded stretches of the existing road into the SRN where appropriate.

M27 Southampton Junction 8 – additional capacity at junction 8 through improvements to the Windhover roundabout.

A31 Ringwood – widening of the A31 at Ringwood to three lanes, providing more capacity for local traffic using the road to cross the Avon, plus adjustments to the

nearby local road network to allow for improvements for pedestrians in Ringwood.

A27 East of Lewes Package – improvements to the A27 between Lewes and Eastbourne, including improvements to junctions around Eastbourne, dualling south of the Polegate roundabout and new facilities for cycling and walking.

A27 Arundel Bypass – replacement of the existing single carriageway road with a dual carriageway bypass, linking together the two existing dual carriageway sections of the road.

A27 Worthing and Lancing improvements – package of enhancements between Worthing and Lancing to improve the capacity and flow of traffic.

A30 Chiverton to Carland Cross – upgrading the A30 to dual carriageway north of Truro, connecting together the dual carriageway section around Bodmin with the dual carriageway Redruth bypass. This means that the A30 will be continuous dual carriageway from Camborne to the M5.

Smart motorways subject to stocktake

M25 Junctions 10-16 – upgrading the M25 between junction 10 (A3) and junction 16 (M40) through a mixture of enhancements, including all lane running between junctions 15 and 16, as well as four-lane through-junction running between junctions 10 and 12.

M3 Junctions 9-14 – upgrading the M3 to smart motorway between junction 9 (Winchester/A34 interchange) and junction 14 (M27), linking with the smart motorway scheme on the M27. This includes improving slip roads at junctions 10 to 14 to align with the introduction of smart motorway (previously listed as two separate enhancement schemes).

Housing Infrastructure fund

Schemes on the SRN that are funded under the HIF (listed below) are intended to be delivered alongside those listed above, but they are subject to different governance arrangements to those funded through RIS2, and they are not guaranteed by RIS2 should they not proceed with HIF funding.

M6: South Lancaster Growth Catalyst – junction 33a (Lancashire)

A120: Tendring/Colchester Border Garden Community (Essex)

A12: Colchester/Braintree Border Garden Community (Essex)

M5 Junction 10 and Link Road (Gloucestershire)

A249: Swale Transport Infrastructure (Kent)

e. Designated funds

Highways England's responsibilities for the SRN go beyond the routine operation, maintenance and enhancement of its infrastructure. In particular, there are ongoing efforts to improve the environmental performance of the SRN and to do so in a way that exceeds basic expectations; there has to be a long-term programme to investigate innovative practices; there are many small-scale safety improvements that are integral to a well-functioning network; and there is the need to continue improving facilities for those that walk and cycle around the network.

To cover these areas and many more, there are a series of 'designated funds', which are reserved for key aspects of Highways England's activity. Unlike the enhancements programme, these are not specified in advance. Instead, Highways England will work together with key stakeholders to invest these funds over the course of RP2.

Environment and Wellbeing fund

A fund that supports environmental and community wellbeing outcomes across the SRN. It includes: retrofitting the latest environmental standards and green infrastructure solutions to existing roads; dealing with the effects that strategic roads have on nearby people, places, the historic environment and biodiversity; and making best use of the land around the road network. By funding work beyond business as usual, this fund should help: improve water and air quality; reduce noise pollution, flooding risks, risks posed to heritage assets, and the severance effect the SRN can have for neighbourhoods and wildlife; and, deliver improved environmental outcomes prior to routes being detrunked.

The road network is about more than moving people and goods from one place to another. It has an environmental impact that affects its surroundings, particularly in places where the road predates our modern ideas of environmental protection. For many people, the most important relationship they have with the road network is as their neighbour. And for many more, there is a rightful concern about the importance of minimising the effects that roads have on the wider world, in terms of noise or emissions.

Modern roads are much better at minimising environmental impacts, using a mixture of sensitive design, modern materials and green infrastructure around the road network. Yet there is also more that can be done. The 'soft estate' that surrounds our busiest roads is full of environmental potential – sometimes highly attractive to wildlife given the absence of regular human intervention. And, as set out elsewhere in RIS2, the road network has an important role to play supporting the drive towards low-emission transport. This is not merely a matter of waiting for the vehicle fleet to shift, but taking direct action.

A1(M) Catterick Village flood protection and wildlife habitat

Highways England, in partnership with the Environment Agency and North Yorkshire County Council, delivered a jointly funded and designed scheme that provides a significantly improved standard of flood protection for around 165 homes and businesses in Catterick Village, and reduces the risk of flooding on the A1(M). The work included two large earth embankments, the diversion of Brough Beck and the construction of a new flow control structure. The scheme also encompassed improvements to a local bridleway and the creation of five hectares of new wildlife habitat.

Users and Communities fund

A fund for helping the SRN to provide a good service for all users and improve multi-modal connectivity. It includes: further cycle-proofing of the network; providing better facilities for pedestrians; support for buses and other transport sharing initiatives; integrating the SRN with other transport networks; improvements to lorry parking and other roadside facilities; and innovative mechanisms to deliver and improve information for road users and communities near to or impacted by the SRN. It also covers delivering small-scale, impactful, regeneration of built-up areas to restore social cohesion when routes are detrunked.

When the first trunk roads were identified, many were no more than village high streets. The network has grown and evolved, but in places people still look out of their front door onto a strategic road. It is not appropriate to run such roads solely for the convenience of strategic traffic, and careful account must also be taken of those for whom a busy road is only a footstep away.

It is equally important to recognise that the users of roads are not vehicles, but people. Nor can these people be easily placed within a single, neat category. The management of the road network must take account of a diverse range of users. At one end, there are those who walk and cycle along or across the network; at the other, lorry drivers travelling hundreds of miles as part of their daily work.

This designated fund supports action to tackle the problems users and communities face currently. Examples of work that the RIS1 designated funds have covered in this area include 150 projects to provide a high-quality network for cyclists, and 90 new and 182 upgraded crossings that will enable non-motorised users to cross the SRN safely. We intend to see this fund assist bus users and improvements to lorry parking and other roadside facilities. It should also support multi-modal integration and connectivity around the SRN, working with Network Rail and bus and coach companies, for instance helping to fund bus services to business parks and monitoring of travel plans.

Birchanger cycle path

Highways England invested £800,000 to upgrade the Birchanger Cycle Path which links Bishop's Stortford to Stansted Airport carrying cyclists safely over the busy M11. Prior to the upgrade, the narrow path was difficult to navigate, especially for vulnerable users and involved cyclists commuting to the airport using the busy, multi-lane roundabout at J8 of the M11.

The work involved new signs, extra barriers and fences, clearance of overhanging vegetation and resurfacing to provide a safer, smoother journey for users. It also included embedding energy-efficient solar stud lights and 'give way' signage for horse riders and cyclists where there are concealed turns. The cycle path opened to the public in May 2018 and has received positive feedback from the local community.

Innovation and Modernisation fund

A fund that supports evolving mobility demands, new uses of data, and the continued development of new technology for the road network, as well as its wider introduction once concepts are proved, which is in addition to other conventional research budgets. Eligible activities include prototyping, real-world trials and on-network introduction. This fund should help the SRN adapt to maximise the opportunities by technologies such as automated vehicles. It will also support activities to deliver efficiencies and safety improvements from road design, construction and asset management.

Transport is evolving. The vehicles on roads and the expectations of the people who use them are changing, and will change further. The way that the SRN is designed, operated and maintained, and the information supplied about travel options, will need to keep pace if users' experience is not to worsen.

The Innovation and Modernisation fund supports research into the latest technologies proposed for the road network. It is also of sufficient size to allow for new technology to be rolled out more widely once it is proven successful. Highways England's Digital Roads ambitions aim to reduce cost and improve safety, achieve better and more predictable journey times, and to improve air quality. This fund is intended to drive these ambitions forward.

We expect this fund to cover a wide range of activity, including efforts to prepare the SRN for CAVs, the testing of roadside connectivity standards and investigation into new safety technologies that can help with the active management of the road network. It can also support innovation in new materials and advances in plant and equipment to improve productivity. It is also intended to kindle new ways of doing things through strategic partnerships and opening the sector up to new players and ideas through the use of open competitions.

UK Connected Intelligent Transport Environment (CITE)

Highways England contributed £4.9million towards the £7.1 million CITE Project which aimed to test communication technologies and the way that vehicles and infrastructure might talk to each other in the future.

The project which was completed in November 2018, was led jointly by Jaguar Land Rover (JLR) and Visteon Engineering Services, working alongside many other partners. The trial culminated in a technology demonstration at Coventry Transport Museum and an on-road demonstration using a fleet of JLR connected vehicles. It tested so-called V2X or 'vehicle to everything' technology – enabling vehicles to communicate with each other and with infrastructure such as smart overhead gantry signs.

Safety and Congestion fund

A fund for local capital enhancements. This fund should help address pinchpoints where small-scale interventions can bring about significant improvements to congestion or safety, and also complete work begun under Highways England's RP1 Growth and Housing fund.

Some of the most valuable improvements to the road network are not new bypasses or major interchanges. Some of the most powerful improvements can be relatively small projects, costing a few hundred thousand pounds, but which achieve great things through subtle tweaks to the network that we have. Small improvements, sometimes as seemingly inconsequential as the repainting of a set of road markings in a different pattern, can abolish jams or even save lives.

The Safety and Congestion fund gives Highways England the ability to deliver these small-scale enhancements. It exists to be deployed at the judgment of the local experts who know the network best.

Tithebarn link road and bridge

Working in partnership with developers and Devon County Council, Highways England has invested £6.2 million, of which £4.5 million came from designated funds in RIS1, to install a new link road to connect development sites near Exeter, together with a bridge for pedestrians and cyclists. The road was opened in April 2018, improving network resilience and easing congestion by providing a permanent alternative for traffic using the A30 link to the M5 at junction 29.

The pedestrian and cycle bridge offers a safe, connected route for non-motorised users travelling from the city centre to the Exeter and East Devon Growth Point. It complements the nearby Redhayes Bridge by creating a greater choice of direct routes over the motorway, encouraging local uptake in walking and cycling.

The structure of the designated funds

Each designated fund is operated directly by Highways England. While it will report to wider government about where the money has been spent, and how it has delivered value for money, the operational decisions about how to invest these funds are a matter for Highways England.

Fund	Expected total
Environment and Wellbeing	345
Users and Communities	169
Innovation and Modernisation	216
Safety and Congestion	140

Experience of the designated funds in RIS1 has also shown that there is a powerful role for groups outside of Highways England, to help target funding in the places where it can do most good. Highways England has already taken steps to give such stakeholder groups a greater say in how funds are allocated, and this will continue in the period covered by RIS2.

As with the enhancement programme, the developing nature of events may mean that the original plans for the designated funds need to shift between now and 2025. For example, it is predicted that turnover of the vehicle fleet will mean there is a higher proportion of lower emission vehicles during RP2, leading to lower emissions of carbon, Nitrogen Dioxide and other pollutants. Were this to proceed either more slowly or faster than expected, it might lead to adjustments in the amount spent in one fund as opposed to another.

Similarly, the nature of Highways England's wider work may mean that it makes sense for smaller projects supported through these funds to move forwards or back to balance wider budgets. Such changes, if made, will be reported transparently by Highways England and after taking the advice of groups represented on the designated fund steering groups.

f. Strategic research and development pipeline

As well as specifying investments to start in RP2, RIS2 also sets in motion the process for investing further into the future. By beginning to investigate the next wave of potential projects now, we can ensure that the next RIS can choose from a range of well-researched options.

In preparing RIS2, we have looked both to consider specific network needs, as well as to make longer-term plans to tackle long-standing problems or to create new economic opportunities. Our preparations for RIS3 will follow a similar path, with a mixture of specific scheme development, strategic studies that break big questions down into deliverable projects, and route strategies that analyse the performance issues and future pressures facing key routes.

The route strategies in particular can help with the prioritisation of interventions in a local area. For example, locally-led work in Cumbria has highlighted a number of potential improvements, including the A595 Whitehaven Relief Road and on the A590, and enhancements to principal local roads. The route strategy process provides the evidence to identify the best solutions and prioritising those for inclusion in a future RIS pipeline.

RIS3 pipeline

Just as the new projects announced in RIS2 have been under development during the period covered by RIS1, the projects that will be promised in RIS3 need to enter development between now and 2025. This will involve proposals for the next RIS going through the early stages of the development process.

The development process is not a commitment to construct particular projects. Many proposals are likely to gather views from stakeholders and local people who might be affected by a potential proposal, including through a non-statutory consultation. For front-runners, this process could include taking a proposal to a full planning inquiry before the publication of the next RIS.

New proposals need to consider a wide range of impacts: not only what can be promised with certainty, but also where a proposal has the potential to support wider and more ambitious local plans for development. We will expect STBs to play an active role in articulating the benefits of proposals being examined in their area.

We also expect that where a proposal enables significant development nearby, the developer will contribute to the cost of delivering the scheme. There is also potential for funding from other sources to support a developing proposal. Funding contributions will make a significant difference to the likelihood of government choosing to bring forward a proposal to the next stage, and ultimately to commit it as part of the next RIS. We value the role that local partners, including local authorities, mayoral and combined authorities and LEPs, have played in the past in marshalling such packages of support.

As a proposal is developed, our understanding of it is likely to change. In some cases, this may demonstrate a deeper or more urgent need for a particular piece of work, which may lead to it being prioritised for rapid delivery. In other cases, it may demonstrate that the case for investment is not strong enough to justify spending public money at a large scale, or that the same outcome can be achieved more effectively through alternative means. Government will commit to the delivery of successful proposals through the publication of RIS3.

The North

A19 North of Newcastle Junctions

A64 Hopgrove

M1 Leeds Eastern Gateway

M1/M62 Lofthouse Interchange

M6 Junctions 19-21A Knutsford to Croft extra capacity

M1 Junctions 35A-39 Sheffield to Wakefield extra capacity

A1 Doncaster to Darrington

M6 Junction 22

Manchester South East Junction improvements

The Midlands

M6 Junction 15 Potteries Southern Access

A483 Pant-Llanymynech Bypass (in cooperation with the Welsh Government)

M1 North Leicestershire extra capacity

M1 Leicester Western Access

A5 Hinckley to Tamworth (**)

The East

A47/A1101 Elm Road Junction

A11 Fiveways Junction

M11 Junction 13 Cambridge West

A12/A14 Copdock Interchange

A120 Braintree to A12 (*)

A404/M40 Junction 4 High Wycombe

Tilbury Link Road

The South and West

Severn Resilience Package

A404 Bisham Junction

A2 Brenley Corner

A303 Phase 2 upgrade

A3/A247 Ripley South

A21 safety package

A2 Dover Access

A27 Lewes to Polegate

A27 Chichester improvements

M27 Southampton Access

A38 Trerulefoot-Carkeel safety package

* The A120 Braintree to A12 proposal is currently affected by outstanding funding contributions related to the development of the Colchester/ Braintree Border Garden Community and contributions from local authorities. Subject to decisions in these areas, the scheme may become committed for delivery.

** In cooperation with work funded by the Ministry of Housing, Communities and Local Government on the A5 Transport Corridor.

Strategic studies

Strategic studies are a method to tackle problems that are too large to be resolved through one single project; or where the impacts of action are more complex or conditional, and must be considered in ways that are not standard. The development of RIS2 has used this tool to consider what can be done at some of the most difficult points on the network, and the findings have led to RIS2 committing to complex projects. In particular, the study into Northern Trans-Pennine links has been endorsed by the Government, and RIS2 commits to delivering the coordinated dualling of the A66.

Strategic studies also serve as a useful mechanism to find opportunities to link new infrastructure with substantial development. This is particularly relevant for the Government's ambitions for growth and housing. In some cases, strategic studies can be expected not to create a proposal for infrastructure, but to identify opportunities where wide-ranging local development can cohere around plans for a single piece of infrastructure.

The first generation of strategic studies have already created an ambitious programme of forward work, which will affect Highways England's forward plans into RIS3 and RIS4. The scale of this work, coupled with the potential for further proposals to evolve from other strategic studies, limits the extent to which we are commissioning new strategic studies at present. However, we have identified some areas where new studies can serve a useful purpose.

Existing strategic studies

- **M60 Manchester North West Quadrant** – The North West Quadrant of the M60 is one of the busiest roads in the North, providing for both local and strategic traffic. The current constraints on the route have negative impacts on both users and local residents. Working closely with Transport for the North and Transport for Great Manchester, our study has so far supported the importance of the Simister Island Interchange in mitigating some impacts and there is now a committed scheme in RIS2. However, the transformational options identified by the study would have significant adverse impacts on local people and communities, and overall would not provide value for money. The study will therefore continue to identify packages of smaller schemes that can be developed through RP2. Working closely with Transport for Greater Manchester, we will complete a parallel local study which has sought to identify if meaningful relief can be delivered through improvements to public transport or to the local road network.
- **Trans-Pennine Tunnel** – Manchester and Sheffield are not connected directly by a high-quality road. Work during RIS1 has shown that traffic between the two cities is one fifth of that between Manchester and Leeds. However, the presence of the Peak District National Park means that any action to correct this must take full account of potential environmental consequences. We will work in partnership with Transport for the North, local highways and national park authorities to finalise whether high-quality but cost effective connections can provide an appropriate balance between the levelling up of the economy and the environmental impacts on a valued and protected landscape.
- **A1 East of England** – The A1 in Bedfordshire is some of the oldest dual carriageway on the SRN, and has

profound impacts on the people who live on or near to it. It also creates a limit on how much growth the area can absorb without placing existing infrastructure under visible strain. Our existing study shows that congestion and safety issues on the route are not substantial enough in their own right to justify the full costs of moving the road to a new, more appropriate location. Substantial plans for local development (as proposed by the National Infrastructure Commission) has the potential to change this, and further work on the project will be considered if development becomes likely.

- **Oxford to Cambridge Expressway** – Oxford to Cambridge Expressway – the Oxford-Cambridge Arc is already home to some of the most productive towns and cities in the country. The Government's ambition is for further growth within the Arc that will help make it a world class economic hub, and delivering the right infrastructure is vital to support this. The Government has investigated the potential for a new high-quality link road between the M1 and M40 which could support this growth and examined the costs and benefits of a range of options, taking account of the views of local authorities and residents in the Arc. We are now pausing further development of the scheme while we undertake further work on other potential road projects that could support the Government's ambition for the Oxford-Cambridge Arc, and benefit people who live and work there, including exploring opportunities to alleviate congestion around the Arc's major economic centres such as Milton Keynes. We will work with the Ministry of Housing, Communities and Local Government and local partners on the proposed Spatial Framework to identify the role transport can play alongside the proposed economic and housing growth ambitions for the Oxford-Cambridge Arc.

- **M25 South West Quadrant** – The M25 between Junctions 10 and 16 is the busiest section of road in the UK and our study has considered how congestion can be relieved on this route. The study recommends against conventional widening of the existing road and has sought to find other ways of reducing pressure on the motorway. It assessed whether wider transport measures could have a role to play in easing congestion on this section, but has indicated that these are insufficient to meaningfully improve the road's performance. We have identified options for getting more capacity out of the existing M25, but in the long-term it may be that to reduce congestion significantly new infrastructure off the existing line of route would prove necessary. We will now look to review and consider these options further taking full account of any effects on surrounding communities.

New studies

- **Central Pennines** – This new study was announced in March 2019 to consider how road connections from the eastern end of the M65 in Colne could be improved. The study is considering if there maybe potential to better connect communities in east Lancashire and West Yorkshire, provide more resilient links to Leeds Bradford Airport and between the M6 and the A1(M), relieving the M62. The study is looking at what the issues are before assessing if there are plausible, cost effective options.

- **M4 to Dorset Coast** – There are few north-south connections across the South West of England. The present strategic road for this area is a mixture of the A36 and A46, via Bath, Warminster and Salisbury. Local authorities in the area have suggested that there is a strategic case for adopting an alternative corridor – the A350 – as the main strategic route for the area; and then beginning a coordinated programme of upgrades to provide a high-quality route linking the M4 to the Dorset Coast including Bournemouth and Poole, with its economically-important port facilities. This raises a number of related questions, which are best considered together as part of a strategic study. We expect that this study will identify which corridor provides the main strategic route for the area; may recommend the trunking and detrunking of key routes; and may identify priority investments in the area that can be taken forward after the dualling of the A303/A358 is complete.
- **Role of the Urban SRN** – As mayoral and combined authorities develop strategies and working arrangements for their transport and environmental activities in many of our urban centres, an important question emerges about how the SRN and Highways England can play their part most effectively in those places. In RP2, Highways England will undertake a study into the role of the urban SRN, balancing the desire to better integrate these roads with local planning and transport operations while not adversely impacting on their national strategic role. This study will consider options such as improved collaboration on operations and changes in road ownership.

In considering where to locate new strategic studies, we have taken into account the developing role of STBs. These organisations, each at a different stage of maturity, are increasingly carrying out work similar to the strategic studies commissioned by RIS1, and in some cases have requested that they take the lead in carrying out work of this kind. For this reason, RIS2 looks to the existing studies on key corridors carried out by Transport for the North and Midlands Connect when planning for their respective areas, instead of commissioning studies to re-examine the same questions.

Statement of funds available

This Statement of Funds Available outlines the resources available to Highways England in delivering the outputs listed in the investment plan and performance specification, as well as discharging all responsibilities set out in Highways England's Licence and wider statute.

As announced in 2015, RIS2 will be funded from the NRF, meaning that our most strategically important roads are now backed by a dedicated funding source provided directly by the users of the network.

RIS2 Statement of Funds Available

Funding is outlined from 2020-25, a period known for financial purposes as RP2. This covers the totality of funding government expects to give Highways England in order to deliver the objectives of RIS2.

Item (£000's)		2020/21	2021/22	2022/23	2023/24	2024/25	RP2 Total
Operations, maintenance renewals and business costs	Resource	1,201	1,160	1,199	1,221	1,293	**6,074**
	Capital	1,098	1,145	1,113	1,276	1,193	**5,825**
Capital enhancements		2,475	3,076	2,980	2,885	2,702	**14,118**
Designated funds		159	169	174	184	184	**870**
Preparing for RIS3		39	59	107	142	124	**472**
RIS2 Total		**4,973**	**5,609**	**5,572**	**5,708**	**5,496**	**27,358**

The total funding that Highways England will receive during RP2 to deliver the outputs and outcomes listed in this document will be £27.4 billion – greater than the expectation of £25.3 billion set out in the Draft RIS.

Within this framework:

- Total funding allocated to designated funds will continue to be ring-fenced, in line with practice in RIS1.
- There is a risk reserve which will act as a flexible pot, allowing Highways England to respond to unexpected events without putting the delivery of its programme at risk.
- Highways England has the flexibility to bring forward or defer up to 10% of its capital funding each year, to ensure that the capital funding profile is efficient. Therefore, the profile of expenditure may be subject to change if this arrangement is utilised. Updated totals will be published annually in Highways England's Delivery Plan.
- Operations and maintenance spend includes funding for the various protocol agreements that exist outside of RIS2 to deliver key roads services on behalf of central government (such as providing technical advice on construction standards)

Further funding

Not all items in RIS2 are funded directly from the Statement of Funds Available. For example:

- Highways England continues to deliver road enhancements in partnership with developers and local partners. In certain situations, particularly those where an enhancement predominantly benefits a

new development, Highways England will be expected to secure suitable contributions from key beneficiaries.

- Highways England is likely to deliver improvements to the network as part of other government programmes. This could include the HIF.
- Some protocols are funded outside of the RIS.

The exact amounts of funding will be subject to negotiation between Highways England and other parties, and may result in further agreements alongside RIS2.

Efficiency savings

The creation of Highways England and the establishment of a long-term funding cycle was justified in part by the substantial efficiency savings that it was expected to produce. Highways England is on track to deliver £1.212 billion of savings during the period covered by RIS1, and is expected to deliver £2.304 billion of savings during the period covered by RIS2.

As discussed in the performance specification, the savings made as part of the efficiency target will continue to be assured by ORR. Performance against this target, as with other key indicators of performance, will be publicly reported in ORR's annual reports on Highways England's performance.

This means that in its first ten years, the creation of Highways England is expected to result in savings worth £3.5 billion – the equivalent of all of the improvements we have made in RP1 and are making through RIS2 to the A1, M6 and A30.

Protocols

Protocols are a way of managing additional functions or activities which are not core to Highways England's role as a strategic highways company. Highways England is therefore instructed to undertake the following protocols, managed within its overall funding envelope. The current protocols cover:

Salt stocks

Highways England will continue to maintain a strategic salt stock as an emergency reserve for it and local highway authorities for winter maintenance. It will also manage the allocation and distribution of salt to local authorities.

Abnormal loads

Highways England will continue to be responsible for authorising the movement of abnormal loads within Great Britain and for planning routes for the movement of the largest and heaviest abnormal loads within England and Wales. This includes the management and maintenance of the electronic service delivery system currently used to plan and approve the routes of all abnormal loads on behalf of the Secretary of State.

M6 Toll

Highways England will be responsible for fulfilling the Government's side of the M6 Toll concession arrangements, including matters relating to road signage and incident liaison.

Severn River Crossing

Highways England will continue to operate and maintain the Severn Bridge on behalf of the Secretary of State. The assets which comprise the Severn River Crossing were not transferred to Highways England with the rest of the SRN. For the majority of RP1, a private concessionaire undertook most of the operational and maintenance activity, funding this from the toll income they received. Once the concession ceased, all operations and maintenance activity has been undertaken by Highways England. Funding for this, in the latter part of RP1, was provided through the protocol which continues into RP2.

Dart Charge

Highways England will continue to performance manage and administer the collection of the Dart Charge and enforcement management services using agreements between the Secretary of State and appointed contractors and service providers. Income from Dart Charge accrues directly to the Department.

Standards and Guidance

Highways England will continue to develop, maintain and publish the standards and specifications used for the planning, design, construction, maintenance and operation of the SRN. Where these publications also meet the needs of the devolved administrations of the Welsh Assembly Government, Transport Scotland and the Department for Regional Development Northern Ireland, they will be developed with their support. These documents are also available for use by other highway authorities and infrastructure operators, both nationally and internationally.

Glossary and References

Abbreviations of terms used

APTR – All-Purpose Trunk Road; an 'A' road on the strategic road network.

CAV – Connected and Autonomous Vehicle

DBFO – Design, Build, Finance and Operate; a form of project financing in which a private entity is awarded a concession to design, build, finance and operate a piece of infrastructure for a period of time.

HGV – Heavy Goods Vehicle

HIF – Housing Infrastructure Fund; the £5.5 billion government fund managed by the Ministry of Housing, Communities and Local Government to support infrastructure schemes where these can unlock new housing developments.

HS2 – High Speed Two rail line

iRAP – International Road Assessment Programme; the programme provides tools for assessing and improving road safety performance.

KPI – Key Performance Indicator

MRN – Major Road Network; the most important local roads, which are eligible to receive funding from the NRF for enhancements.

NRF – National Roads Fund; a funding stream that hypothecates Vehicle Excise Duty receipts in England for investment in the most strategically important roads.

NRUSS – National Road Users' Satisfaction Survey

ORR – Office of Rail and Road; the independent highways monitor

PI – Performance Indicator

RIS – Road Investment Strategy; government's statement of its long-term vision for strategic roads, what it expects Highways England to deliver in the next road period, and the funding it will make available for that purpose. RIS1 was published in 2014; this document is RIS2; RIS3 is expected to be published in 2024.

RP – Road Period; the period of time to which a RIS applies. RP1 is financial years 2015/16 to 2019/20 inclusive; RP2 will be 2020/21 to 2024/25; and RP3 will commence with 2025/26.

RTF18 – Road Traffic Forecasts 2018

SRN – Strategic Road Network; the motorways and main 'A' roads managed by Highways England on behalf of government.

SRUS – Strategic Roads User Survey; successor to NRUSS developed and delivered by Transport Focus.

STB – Sub-national Transport Body; groups of local authorities with transport responsibilities working together to improve regional connectivity, unlock economic growth and enhance quality of life in their area. STBs develop a transport strategy which promotes and encourages sustainable, safe, integrated, efficient and economic transport facilities and services to, from and within the area of the STB. Current STBs are: Transport for the North; Midlands Connect; England's Economic Heartland; Transport East; Transport for the South East; Western Gateway; and Peninsula Transport.

Sources of data used

Page	Source	Table
9	National Travel Survey 2018 www.gov.uk/government/statistics/national-travel-survey-2018	NTS0303
10	National Travel Survey 2018	NTS0303
10	Transport Statistics for Great Britain: 2018 www.gov.uk/government/statistical-data-sets/tsgb04-freight	TSGB0401
10	Road traffic estimates in Great Britain: 2018 www.gov.uk/government/statistics/road-traffic-estimates-in-great-britain-2018	TRA4205
10	Road traffic estimates in Great Britain: 2018	TRA4203
10	Road traffic estimates in Great Britain: 2018	TRA4205
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11	Road traffic estimates in Great Britain: 2018	TRA4203
11	Road traffic estimates in Great Britain: 2018	TRA4201
12	Road traffic estimates in Great Britain: 2018	TRA4202
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35	Transport Statistics for Great Britain: 2018	TSGB0401
35	Use of the Strategic Road Network www.gov.uk/government/statistics/use-of-the-strategic-road-network	TRAONS002
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ISBN 978-1-5286-1678-2
CCS0919077812