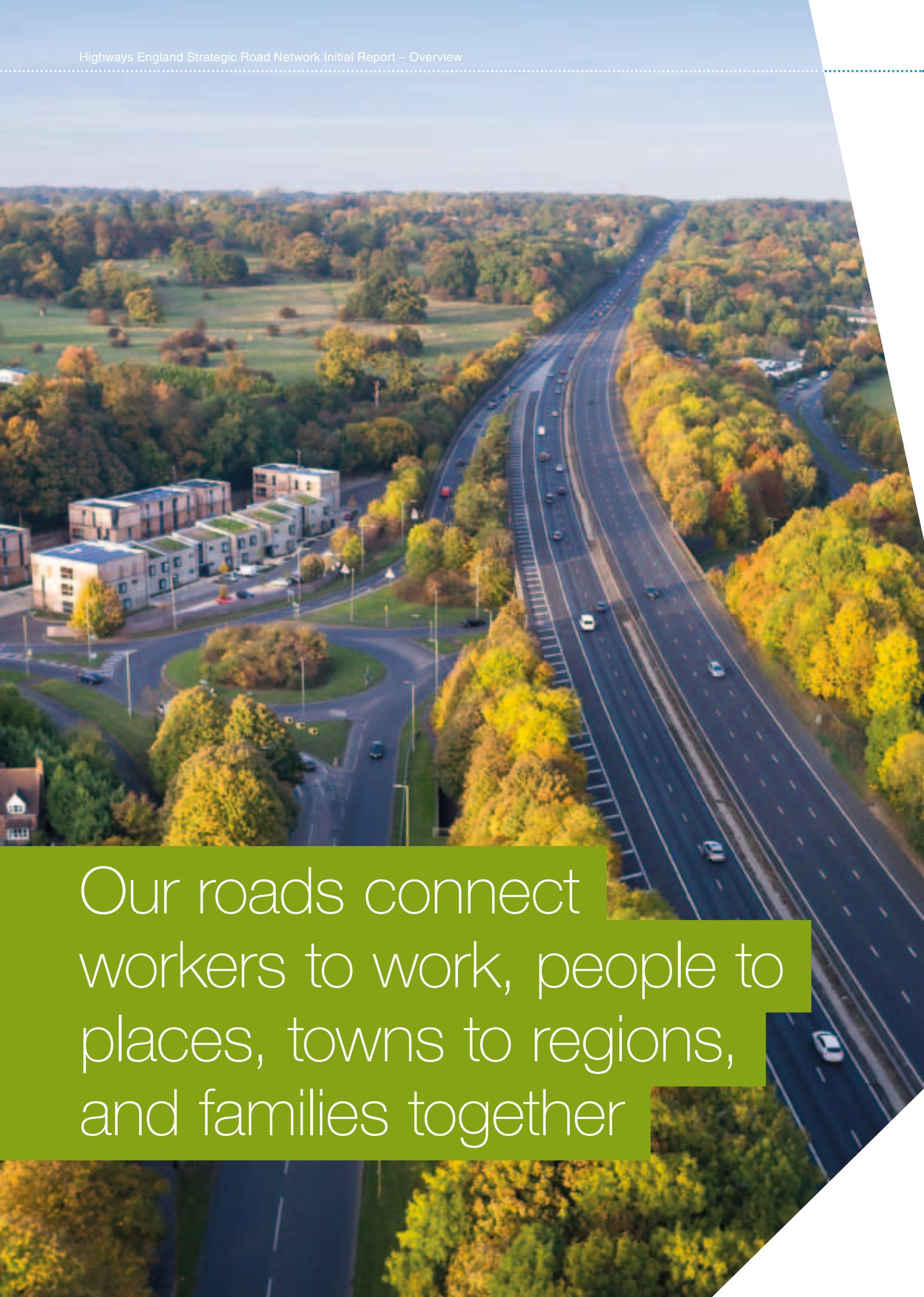




Highways England
**Strategic Road Network
Initial Report**
Overview

December 2017

An aerial photograph of a multi-lane highway stretching through a landscape with autumn foliage. The highway is flanked by trees with yellow and orange leaves. In the foreground, there are modern buildings with green roofs and a roundabout. The sky is clear and blue.

Our roads connect
workers to work, people to
places, towns to regions,
and families together

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Foreword

Over 4 million vehicles use the Strategic Road Network (SRN) every day. Our roads carry one third of all traffic and over two thirds of all freight – and this demand is set to increase, with forecasts indicating that traffic on the SRN will continue to grow across the short, medium, and long term.

Our SRN Initial Report sets out our vision and priorities for the second road period (2020-2025). It is underpinned, and driven, by our aim to accelerate the delivery of government's ambition, as set out in the Road Investment Strategy, to "*revolutionise our strategic roads to create a modern SRN that supports a modern Britain.*"

In creating this report, we have listened to our customers and stakeholders, gathered a detailed understanding of the condition of our infrastructure, measured our performance to-date, and considered the wider priorities of government – our funder and shareholder. We have also sought to understand more about what the future could hold. Technological changes could drastically change not only our roads, but the wider transport network and even our concept of mobility. New generations of electric, connected, and autonomous vehicles have the potential to offer our customers, and the country, a new era of safer, easier, and less polluting travel – a potential roads revolution.

It is vital that we continue to develop our network over Road Period 2, not only to meet the challenges that we may encounter, but also to take advantage of the many opportunities that we are likely to find. Over the next road period, we therefore aspire to:

- **Focus on operations, maintenance and renewals**

Recognising that these areas are essential to our customers and lay the foundation for a safe, reliable, and resilient network

- **Build the smart motorway spine of the network**

Enhancing capacity between our major cities through a stable and continued smart motorway programme

- **Accelerate the rollout of expressways**

Driving forward the ambition from the first Road Investment Strategy to develop an expressway network

- **Undertake transformational investments**

Implementing the next generation of transformational schemes, following on from the A303 and Lower Thames Crossing, and prioritising the areas that need it most

- **Deliver a balanced programme**

Ensuring sufficient funding for medium-sized schemes, for example junction and capacity improvements

- **Renew focus on small schemes**

Ensuring dedicated funding for small, regional schemes to address safety and congestion hotspots

■ **Deliver through refined designated funds**

Continuing to invest, with an increased in scope to include roadside facilities, a greater emphasis on flexibility, and new ways of working with partners

■ **Prepare for the future**

Responding to longer term developments that could transform our roads, such as electrification and autonomous vehicles, and enabling this through pilots and appropriate investment

We have seen the difference our initiatives have made during the first road period - to safety, to our customers' journeys, to the economy, to the environment, and to communities – and we are determined to continue our positive impact. Our Initial Report, however, is just the start of the journey. We are eager to hear the views of our customers on the contents of this report, as well as the views of the wider public, interested groups, and local government. There is a big debate to be had on the future of roads investment, and we welcome all participation.



Connecting the country

We believe that connecting people builds communities, creates opportunities, and helps our nation thrive.

We care about your journey

We aim to provide all our customers with safe and reliable journeys through the way we operate, maintain and enhance one of the most advanced road networks in the world.

Safety. Customer service. Delivery

Our imperatives guide all our activity and remain our focus – keeping people moving today, and moving better tomorrow.

Safety. Teamwork. Ownership. Integrity. Passion

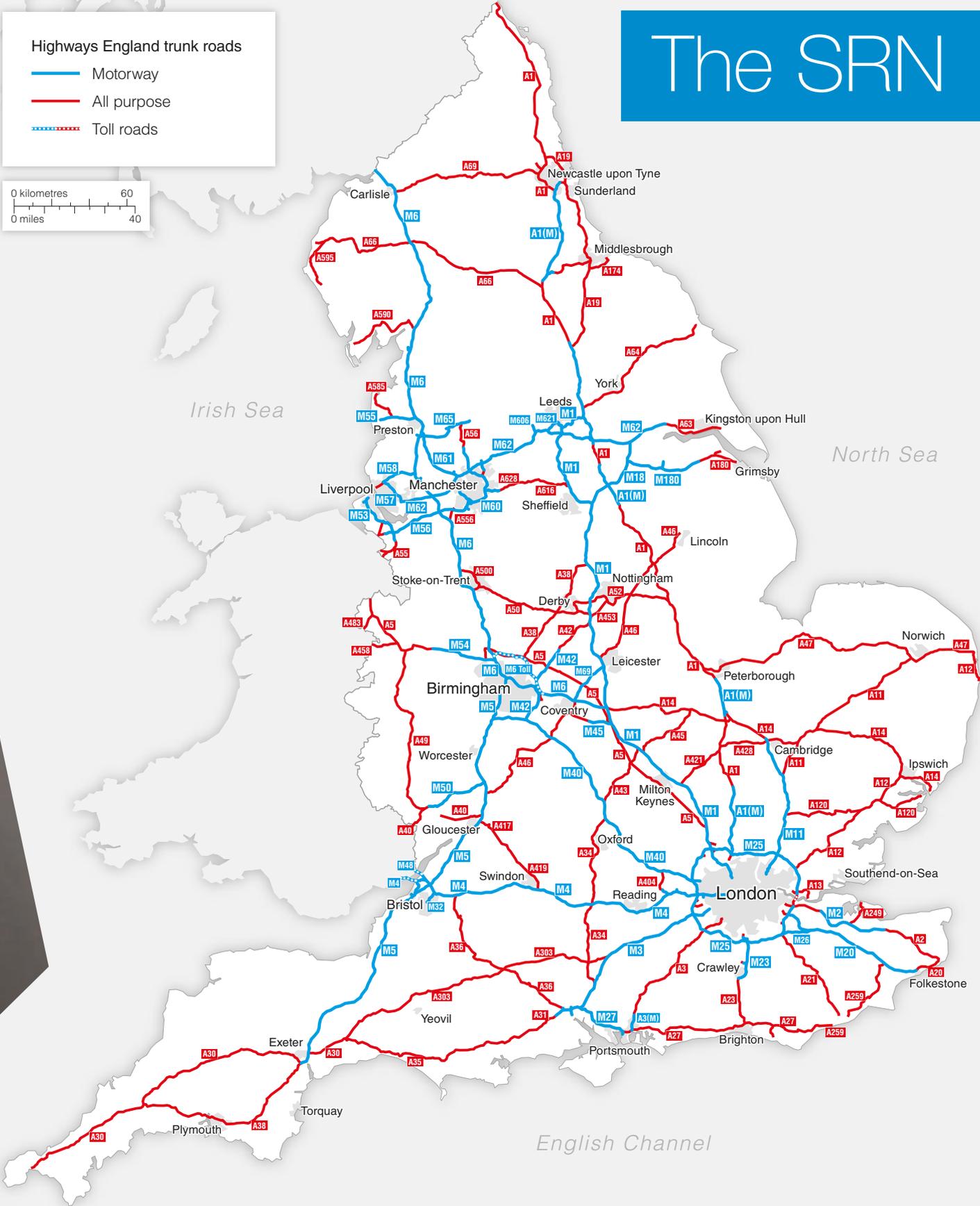
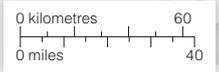
Our values are who we are.

We are **Highways England**

The SRN

Highways England trunk roads

- Motorway
- All purpose
- Toll roads



1. The Strategic Road Network

Highways England was established by government to operate, maintain, and enhance the SRN in the interests of our customers and stakeholders. This role not only includes day-to-day management of the SRN, but also maintaining and extending the life of its many different elements and creating a positive impact on the surrounding communities and environment.

The SRN, made up of the nation's motorways and major A roads, is arguably the largest and single most important piece of infrastructure in the country. Our network enables more journeys than ever before – more safely, more efficiently, and bringing more benefit to our customers and the nation's economy.

While it may only make up 2% of the UK's roads, 4 million vehicles use the SRN every day and around a fifth of the population live within a mile of our roads. Our network connects workers to work, people to places, towns to regions, and families together.

Pedestrians, cyclists, and horse riders also use our roads, whether as part of a journey, connecting to other transport, or safely crossing.

The SRN is also vital to the economy. Businesses rely on it to access their staff, suppliers, customers, and international markets. The SRN moves more freight than all other roads and transport modes combined. And wider sectors, such as logistics, retail, manufacturing, and construction, are reliant on our network to move materials and goods. Our network's performance directly impacts on production costs, as well as the competitiveness and the attractiveness of England as a place to locate and invest.



Key facts and figures

4,400 miles of motorways and major A-roads

Carrying over **30%** of all traffic and **4 million** vehicles use the SRN every day

In one year, **1 billion** tonnes of freight transported on SRN: more than all other roads and transport modes combined

92 billion miles were driven on the SRN last year

Traffic on motorways has grown by over **50%** since 1993 and is forecast to grow another **31%** by 2041

Almost **75%** of businesses say tackling congestion on the SRN is important or critical to their business

Our major schemes deliver **£3** benefit to the economy for every **£1** invested

2. Our progress in Road Period 1

We are currently in the middle of the first road period (2015–2020). As a government-owned company with a five-year funding cycle, we can now deliver road improvement projects and services more quickly and efficiently than before. We are making good progress in delivering our £11.4 billion, five-year capital programme, which is designed to increase capacity, transform connectivity, and improve the condition of our network. Full details can be found in our [Delivery Plan 2017-18](#), with highlights included below.

England's SRN is currently one of the safest in the world

As of the end of March 2017, we have delivered 87 of the 122 actions in our [Health and Safety 5 Year Plan Update](#). Due to our improvement schemes, interventions, and campaigns over the past year (up to May 2017), the accident frequency rate has reduced by a third for the Traffic Officer Service, and by 27% for our supply chain. The number of road users killed or seriously injured has shown a general decline in recent years to some of the lowest levels on record, even as traffic volumes have increased. However, over the last year there was a small increase in the number of casualties, partially influenced by the new Collision Recording And Sharing (CRASH) initiative now being adopted by police forces. The new system is an injury severity system that automatically converts injuries into a severity classification, rather than relying solely on police officer judgment. We are working with the Department for Transport (DfT) and the Office of Rail and Road to develop a better understanding of the impact of this change, but will continue in our efforts to improve safety on our roads – our first imperative.

We are working hard to improve customer experience

We are committed to improving our customer service, and we are talking more with our customers and stakeholders to understand their

perspectives. Over the past year, we achieved a satisfaction score of 89.11%, coming close to our target of 90%. We have used data provided by Transport Focus, the road users' watchdog, and combined this with our own insight to identify initiatives to improve customer service. These have included piloting increased speed limits in roadworks and launching an online calendar to enable customers to check the timing of road closures. With the increase in road investment and the number of schemes being delivered, we know we need to continue to work hard to deliver the smooth and reliable journeys that our customers want.

We have delivered almost £4 billion of road improvements

Road improvement schemes make our network safer, increase capacity, transform connectivity, and improve road condition. We have already made solid progress in Road Period 1, completing 18 schemes on, or ahead of, schedule and adding more than 190 lane miles of much-needed capacity to our network. A further 15 major improvement projects are in construction across the SRN.

Analysis has shown that our major road schemes are delivering almost £3 of benefit for every £1 of investment, and that 90% of scheme objectives are met. On average, each of our schemes also results in four fewer collisions every year.

We have supported economic growth

To date, we have committed to investing over £50 million from the Growth and Housing Fund during the current road period towards 16 improvements. These will support the development of 36,000 new homes and enable 39,000 jobs.

We have sought to minimise our environmental impact

We are driving forward our air quality pilots, projects to reduce noise, and our ongoing action to reduce litter. At the same time, we have sought to embed biodiversity considerations in our planning and monitoring of projects. We continued to encourage the uptake of ultra low emission vehicles, delivering against our target of 95% of our network being within 20 miles of a charging point by the end of 2018-19. We have also sought to encourage and enable alternative means of transport. For example, we have delivered 264 new and upgraded cycle, pedestrian, and equestrian crossings points since 2015.

We have encouraged innovation

We have supported government's ambition for the UK to become a global leader for innovation, undertaking initiatives such as piloting connected corridors and overseeing platooning trials to examine how lorries can accelerate and brake in sync through wireless technology. Through our innovation designated fund, we have funded 73 innovation projects, including the first motorway-to-motorway traffic management scheme (M6/ M62 Croft Interchange) and new incident detection technology within the Southwick Tunnel on the A27 in West Sussex. Our innovations are essential to both meet today's challenges, and to prepare our infrastructure for the potentially huge changes we anticipate from Road Period 2 and beyond.

We are on track to meet our efficiency saving targets

We committed to delivering £1.2 billion of efficiency savings over Road Period 1, and we are well on our way to achieving this. At the end of March 2017, we were ahead of our cumulative milestone in efficiency savings, achieving £169 million against our £139 million target.

Focusing on the environment in Road Period 1

- Trialled 10 air quality pilot projects
- Lowered our corporate carbon footprint, and worked with our supply chain to encourage lower carbon material and construction techniques
- Launched a programme of resurfacing, insulation of affected properties, and barriers to tackle noise pollution
- Published our [Biodiversity Plan](#) in June 2015, and presented 155 biodiversity projects to our Biodiversity Technical Working Group
- Actively minimised and mitigated the local impact of our improvement schemes, for example ensuring displaced badgers from the A556 dual carriageway were re-homed in a new settlement
- Continued heritage fieldwork, for example on the A14 where nearly 200 archaeologists were employed to excavate remains in advance of works

3. Informing future investment

3.1 Listening to our customers and stakeholders

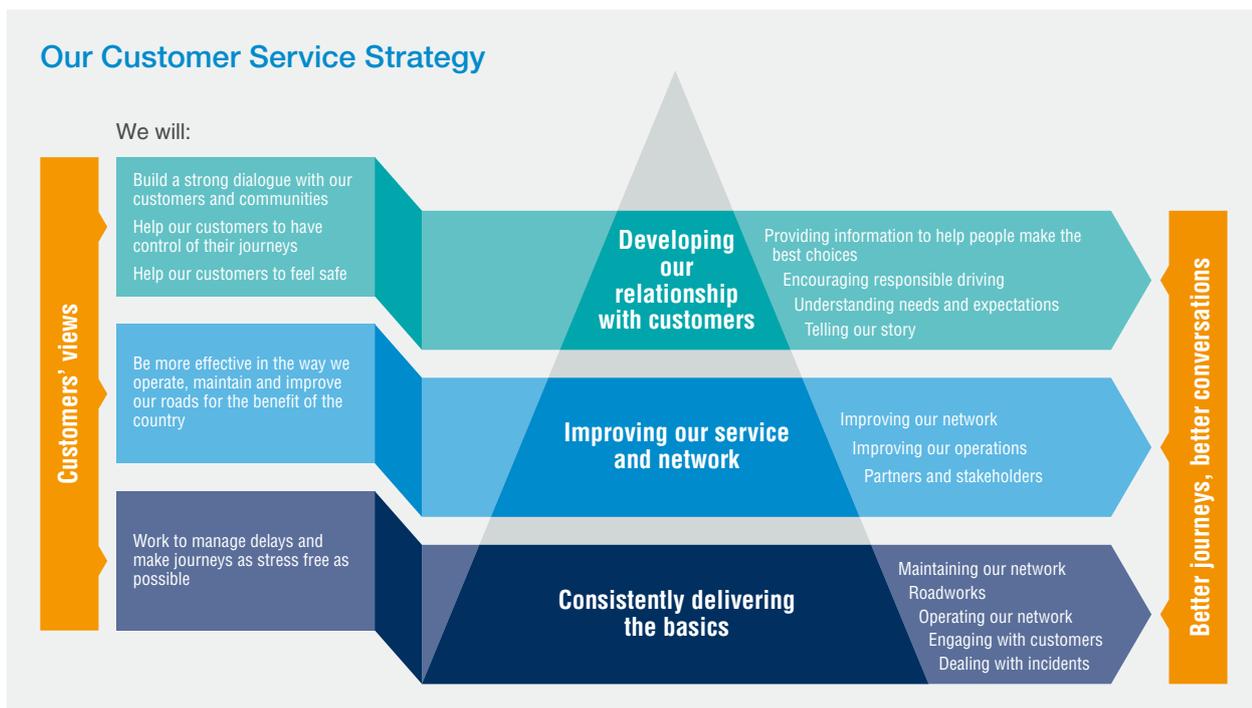
To deliver a fit-for-purpose network for our customers and stakeholders, we need to listen to, and understand, their needs. During this early part of planning for the next road period, we have been doing just that – and we will continue listening throughout the forthcoming consultation process and beyond.

Developing our Customer Service Strategy

One of the reasons Highways England came into existence was to increase the focus on customers' needs and to make sure that SRN investments and activities reflected these requirements. We know that better conversations lead to better journeys so we have been engaging with customers to develop our Customer Service Strategy. Our aim is for customers to know that we are delivering the basics they expect, that we are improving our service to them as well as improving the network they use, and that there is strong, two-way dialogue in place.

Gathering insight from Transport Focus

We work closely and consistently with Transport Focus, who represent the views of our customers and stakeholders. Since becoming our watchdog in 2015, they have undertaken a significant range of research with users of the SRN. Drawing on this wealth of insight, they have summarised their perspective in [Road users' priorities for Road Investment Strategy, 2020-2025](#). They have highlighted nine 'areas, shown on the following page, which have informed our views on investment priorities.



Transport Focus's nine road users' priorities

1. Enhanced safety
2. Improving journey times
3. Improved surface quality, signage, and lighting
4. Better information
5. Improved roadside facilities
6. Better integration with other roads
7. Meeting the needs of bus and coach operators and their passengers
8. Improved provision for cyclists, pedestrians, and equestrians
9. Future-proofing new investment

We also asked Transport Focus to undertake research on what road users want as part of our route strategies development. The research process included 4,422 face-to-face interviews with SRN users across our 18 routes and a separate survey of 250 fleet managers across all regions. The findings, published in their [Road to the Future](#) report in 2016, provided detailed feedback and enabled us to understand customers' experiences and priorities.

Engaging our stakeholders

We have also sought to ensure that insight about the priorities of stakeholders has been used to inform the SRN Initial Report. As an example, whilst developing [The Road to Growth](#), published in 2016, we contacted over 700 organisations and spoke with every Local Enterprise Partnership in England, the sub-national transport bodies, business representatives, local authorities, government bodies, and national infrastructure providers. This research helped us to identify locations across the country where we can unlock development and growth, and has injected strengthened economic sensitivity into the way we work.

We held our first stakeholder conference in 2016, where we focused on understanding what our national stakeholders and partners need

from us, including Transport Focus, the Freight Transport Association, and other highways authorities. We also held a series of regional events with our key stakeholders across England in 2017, where we discussed the preparations for the next road period, and listened to feedback and thoughts about future priorities.

We work closely with the emerging sub-national transport bodies (Midlands Connect, England's Economic Heartland, Transport for the North, and Transport for the South East). These bodies will be statutory partners in both road and rail investment processes in their geographical areas. Accordingly, we have sought to gain their insights on regional priorities to ensure they are reflected in our considerations for the second road period.

Working with environmental bodies

We have engaged with environmental bodies, including as part of our designated funds advisory groups. The Campaign for Better Transport (CBT) has worked with a broad range of environmental groups to articulate their shared green vision for the second Road Investment Strategy in their report, [Rising to the challenge](#), published in 2017. We believe we can continue to deliver a greener road network and, for example, will look to reflect many of the views outlined in this report in our recommendations for designated funds in the next road period.

Future public consultation

Our Initial Report is just the start of the journey. Looking to the future, we will work with DfT on the public consultation on the Initial Report. This is a key part of the listening process, and we are eager to hear the views of our customers on the contents of our report, as well as the views of the wider public, interested groups, and local government.

DfT will publish their public consultation findings in 2018 and will subsequently use the outputs to create the next Road Investment Strategy.

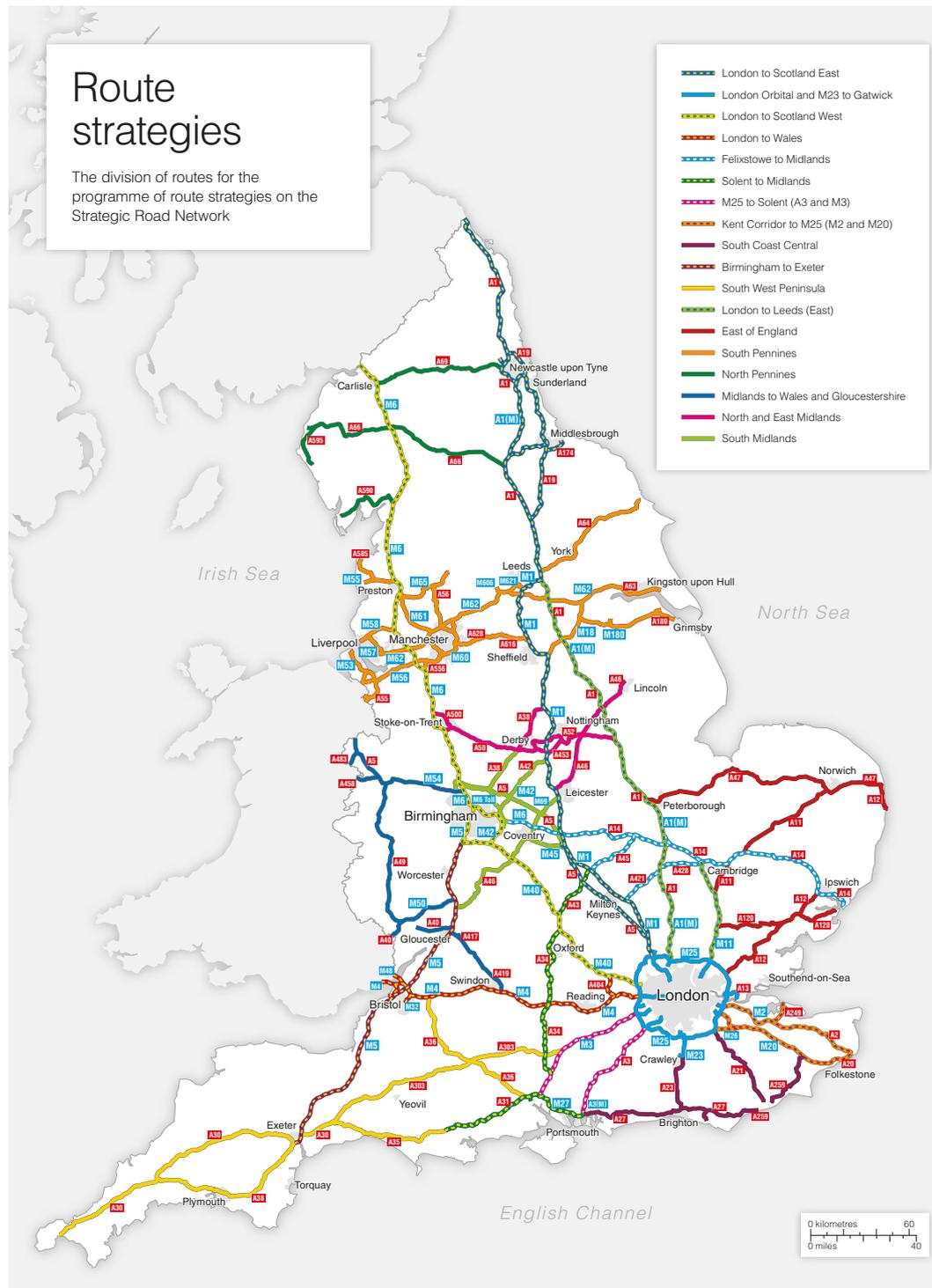
3.2 Understanding our infrastructure and performance

To invest for the future, we need to understand our network and assimilate the vast amount of data and metrics produced on it. We have developed a clear understanding of the SRN in three main ways: through work undertaken to create our Route Strategies; through assessments of infrastructure condition; and through assessments of performance.

Route Strategies

Published in March 2017, our 18 Route Strategies provide a high level view of our network, informed by consultation and input from our customers and stakeholders.

Each of the 18 strategies covers a strategic route, describing its key characteristics, current performance and constraints, and indicative locations where further study is recommended.



Common themes across the Route Strategies

A safe and serviceable network

Safety remains paramount to us and our stakeholders. Safety challenges across our network are predominantly on or around:

- All Purpose Trunk Roads (APTR)
- Large conurbation areas
- Areas with congestion
- Short distances between junctions

A more free-flowing network

According to Transport Focus' research, congestion is the biggest worry for our customers, and they believe that better on and off road information could improve their journey experience. Congestion is an issue across the network and is most prevalent where:

- Multiple routes meet, in large urban areas
- Demand outweighs capacity (for example single carriageways with no overtaking provision)

A more accessible and integrated network

We recognise that customers need reliable end-to-end journeys, across local and national roads. The following are some key considerations to achieve this:

- A review of current diversionary routes
- We need to be responsive to, and integrated with, large infrastructure projects, such as High Speed 2 (HS2)
- We have identified the need to continue to support cyclists and other non-motorised users and reduce severance issues
- We must ensure that we continue to support access to other transport modes

Supporting economic growth

Evidence collected through Route Strategies supports the SRN's important role as a driver, or potential barrier, to housing supply, job creation, and other economic growth, as set out in our Strategic Economic Growth Plan, [The Road to Growth](#). This identifies 400 'economic hotspots' and includes maps that show those hotspots are mostly closely aligned to, and enabled by, their supporting routes.

An improved environment

Air quality, noise, and flooding are key environmental issues which are important to us and our stakeholders. More information can be found in Chapter 3 of each Route Strategy report about specific network locations. The Route Strategy reports also reflect how future investment must fully consider the impacts on areas of outstanding natural beauty and national parks.

Infrastructure condition

We face a challenge in keeping our infrastructure in good condition. Many elements of our network were built in the peak road-building decades of the 1960s and 1970s. Without intervention and investment to repair them – or in some cases to replace them – they will deteriorate in the coming years.

Our infrastructure spans a vast number of ‘assets’, which can be as varied as asphalt road surfaces, concrete bridges, solid rock cuttings, steel safety fences, lighting, and drainage. They each have different life expectancies, rates of deterioration, and special considerations affecting their condition. Even within one asset type, behaviour and performance over time can vary hugely. Some elements of the network are largely unseen and we have historically had variable levels of data on their condition.

During the current road period, we have sought to improve our data. Understanding our network – the age, condition, and life expectancy of our diverse asset types – is critical to everything else we do. As part of our Asset Delivery programme, we have been bringing in-house the asset inspection, monitoring, and management functions from our suppliers, including their asset databases. We have also improved the processes we follow to collect and verify condition data. As a result, we have a much better picture of the state of our infrastructure now than we did at the beginning of the first road period.

In the next road period, we want to continue to improve and move towards managing in line with whole life cost principles, becoming a more efficient and effective asset steward. While the condition of our infrastructure may pose some challenges, the potential for technological developments, such as self-healing surfaces and remote monitoring, also provides us with great opportunities. We will not only be able to improve how we monitor and maintain our roads, but also to encourage the industry as a whole to support, and drive forward, innovation and efficiencies.

The secret to self-healing roads?

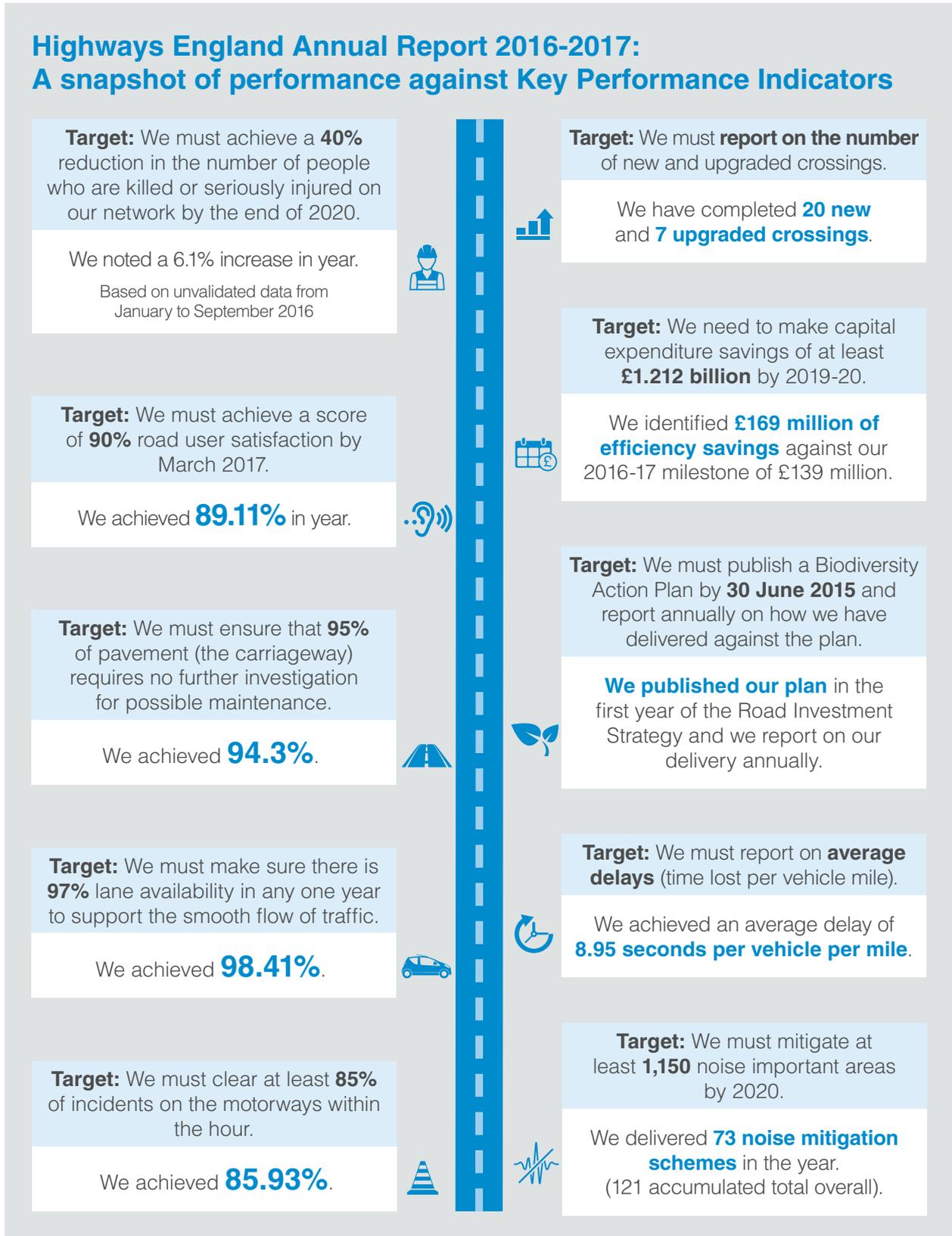
Highways England is currently funding a project to find a new way to create self-healing roads – without the use of an external aid. As part of this work it was discovered, by a team based in the Nottingham Transport Engineering Centre, that mixing capsules of oil into the asphalt used for resurfacing roads has the potential to increase the lifespan of roads by at least a third, potentially reducing the cost of major repairs by £260 million a year. When cracks start to appear in the road, the capsules split open, releasing the oil, which softens the asphalt and helps it stick back together.

This project has been successful in laboratory tests and pilot trials, and will be tested on sections of road during overnight maintenance work, followed by a 12 to 24 month monitoring period.

Performance

We continue to monitor our performance closely against our short-term and long-term targets, both set by government and from our own internal key performance indicators.

Our performance in 2016-17 is examined in detail in our [Annual Report 2016-17](#) and we have included a summary below.



3.3 Considering the priorities of our shareholder

The priorities of government, our funder and shareholder, play a critical role in shaping our views about future investment. In the run up to the next Road Investment Strategy, the DfT has stated their intention to build on their existing five broad aims in [Road Investment Strategy Post 2020: Planning Ahead](#), published in 2016. These aims, summarised in the box below, have played, and will continue to play, a key role in shaping our thinking, and in future decision making.

Wider government objectives

There are also a range of wider government strategies and priorities to which the SRN, and the management of our network, contribute.

These include:

■ Industrial Strategy

The [Industrial Strategy White Paper](#) sets out government’s long-term vision for the future UK economy and a strategy to transform the productivity, earning power, and quality of life of the British people. Our activities and investment in the SRN supports the five foundations of a strong economy and address the Grand Challenges, helping to put the UK at the forefront of the industries of the future.

■ Air quality and carbon

Through their [Air Quality Strategy](#) and guidance on [carbon budgets](#), government has highlighted the need to reduce the impact of diesel vehicles, and accelerate the move to cleaner transport, among other options. Our recently published Air Quality Strategy outlines the actions we will take to support this through changes across areas of policy, planning, monitoring, and operational management.

■ Regional transport

Government is forming sub-national transport bodies, which will be able to advise transport ministers on investment priorities in their own areas and on strategic schemes to boost growth. We have actively worked with these emerging transport bodies in the run up to this Initial Report and will continue working with them going forward.

Summary of government’s five broad aims



■ Housing

Government is committed to increasing the nation’s housing stock, and transport connectivity is a key enabler for many housing developments. In the first road period, we have supported many housing developments through our Growth and Housing Fund, and we will continue to support this agenda in the second road period.



Our roads
keep England moving

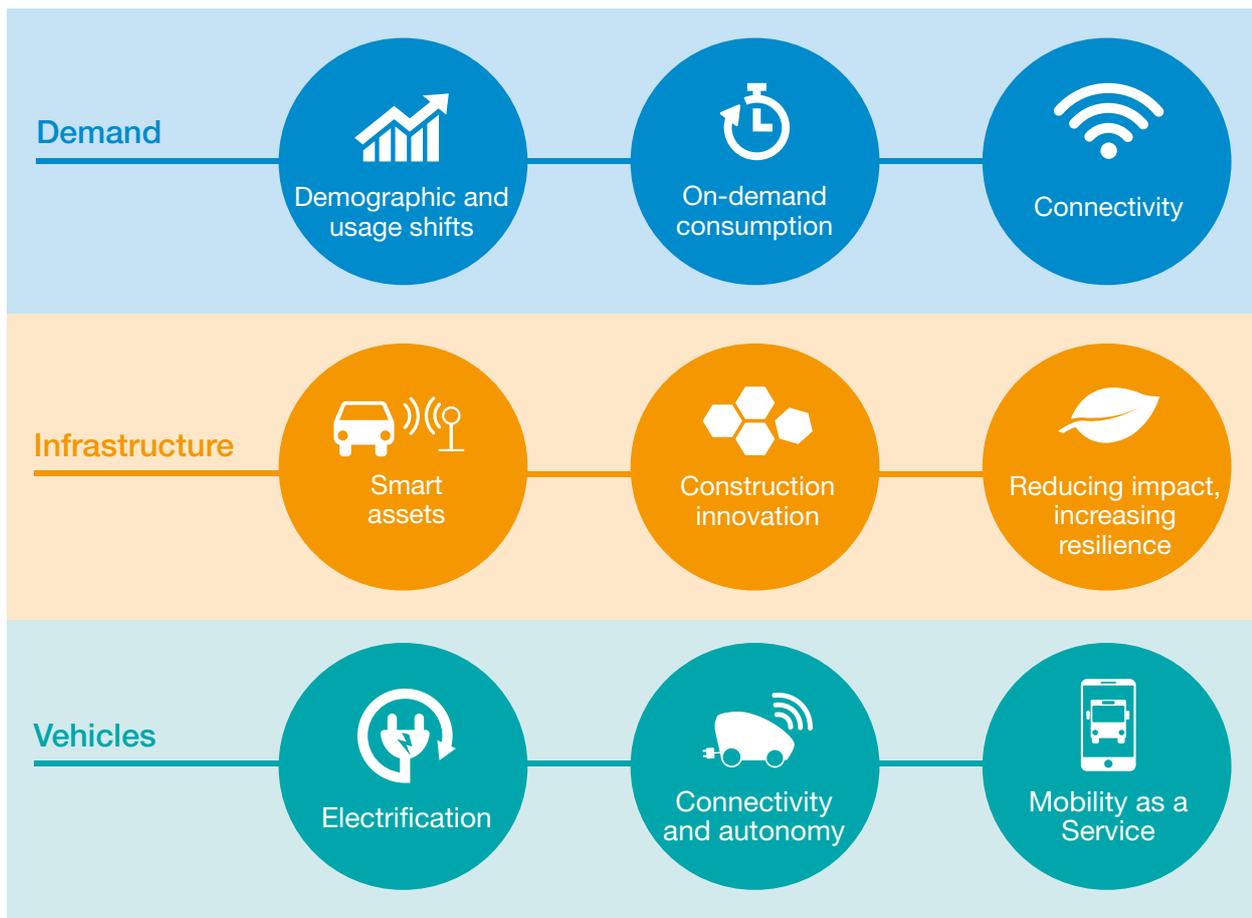
3.4 Looking to the future

As the custodian of the SRN, we are responsible for ensuring our roads are fit for purpose, not only now but also in the years to come. When planning for investment, it is vital that we try to understand how our network might evolve, and what this could mean for the people who use it.

Long term trends

Mapping the future over the next 30 years and beyond is a difficult task – both due to the known uncertainties, such as population and economic growth, and the ‘disruptors’ which may occur due to technological advancement or societal change. However, it is essential that we try to predict, and understand, how the needs of our network will change.

We have identified nine trends spread across three areas: demand, infrastructure, and vehicles. Together, these trends show the potential for a radical change not only to the SRN, but even our concept of mobility. Numerous commentators have said this change may be potentially as significant as the change from horse-drawn to motorised transport in the early 20th century.



Demand



It is widely forecast that, over the coming decades, the UK population will experience a shift in demographic, geographical location, size, and habits. These changes will undeniably have an impact on demand on the SRN, with the predicted backdrop of population growth being a key driver in the expected increased future demand on the SRN. Global and regional forecasts also indicate continued growth in economic outputs, which in turn will fuel continued consumerism, trade, transportation, and, we believe, demand on our network. In relation to connectivity, it will be important to further increase links between, and within, regions, driving economic growth and supporting social mobility. As we look to the future of multi-modal travel, we will need to continue to explore the potential for greater joint planning with other modes of transport, regional transport bodies, and associated industries.

Infrastructure



It has been proposed that the world is on the brink of a revolution, characterised by the fusion of technologies across the physical, digital and biological spheres, data processing, and artificial intelligence. The improved use of 'smart' technology, data, and analytics will not only offer huge opportunities to the SRN, but also to the wider infrastructure sector. The introduction of standardised, modularised, and pre-fabricated components through off-site or nearsite construction is expected to grow, and the construction of road infrastructure using digital technologies is likely to undergo a sustained period of evolution. Investigations in materials science have also raised the prospect of new advances in electronics, biomaterials, energy storage, and structural properties. However, as we look to the future, the construction and transport sectors must also prepare to manage, rationalise, and conserve the resources they consume, reflecting a wider aim to minimise negative environmental impact. The resilience of our network will also become more critical as the volume of traffic increases in parallel with increased risk from extreme weather events.

Vehicles

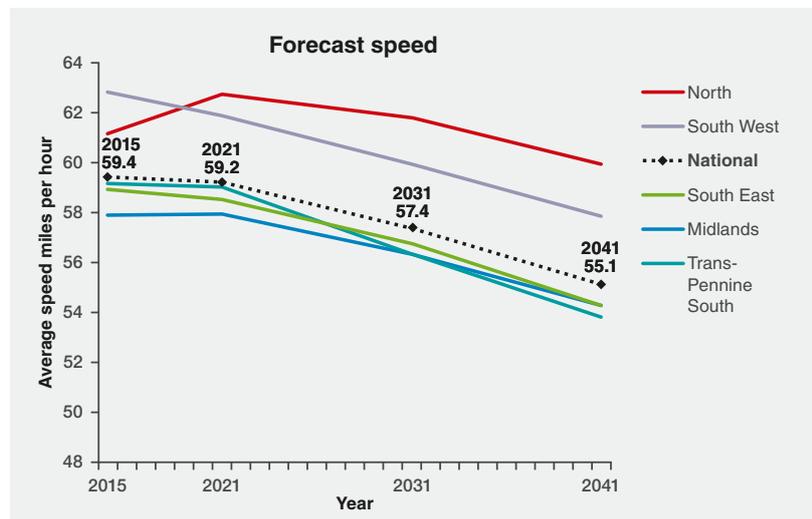
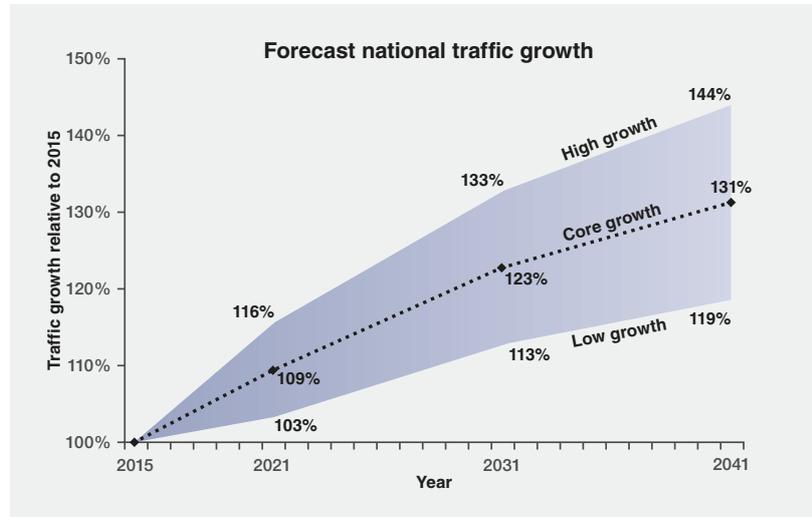


Advances in battery, fuel cell, and other energy storage technologies, accompanied by the forecasted reductions in costs, will mean a transition to electric vehicles, particularly as we move towards 2040, by which point the government will end the sale of all new petrol and diesel cars and vans. The rise of connected and autonomous vehicles (CAVs) is expected to be one of the most significant and potentially disruptive changes in future personal mobility. Connected vehicles promise integrated, reliable, and safer travel, whilst autonomy could increase mobility, reduce incidents, and increase national productivity. This is also linked to the changing nature of mobility services, and new possibilities enabled by digital technologies, which offer the potential for road transport to become a seamless part of users' end-to-end journeys. It is predicted that new business models, commonly termed 'Mobility as a Service', present the next revolution in mobility.

Future network demand

There is inherent uncertainty in how these trends will play out and we are developing a number of demand scenarios, in conjunction with the Department for Transport, as part of the analytical programme for the next Road Investment Strategy. Ahead of this fuller analysis, we have produced a core growth scenario based on assumptions on customer behaviour, car ownership, population, and economic growth. In the core scenario, traffic grows by 9% over the five years from the start of Road Period 1 to the start of Road Period 2, and by 31% by 2041. As with any forecast, this is subject to a high degree of uncertainty which we have reflected by creating a high and low demand forecast. Even on the low growth scenario, traffic on the network is forecast to increase. This change in traffic levels will not occur evenly across our whole network. It is likely to be concentrated in hotspots, corresponding to areas of high population and economic activity, and along the key routes which connect them.

Without further investment and innovation to increase the capacity of the SRN, increased demand will increase congestion and average journey times. Assuming no growth in capacity beyond the enhancements announced in the first Road Investment Strategy, the average speed along our roads is forecast to decrease gradually as the network becomes busier.



Planning for the future

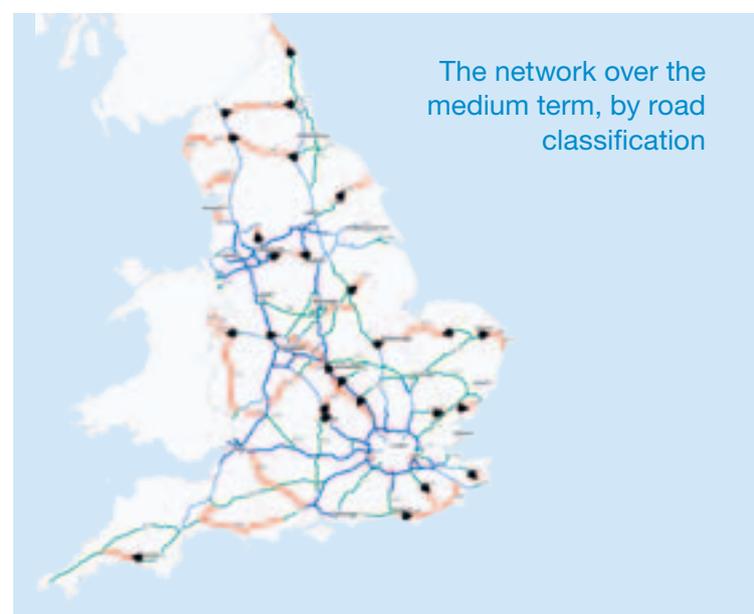
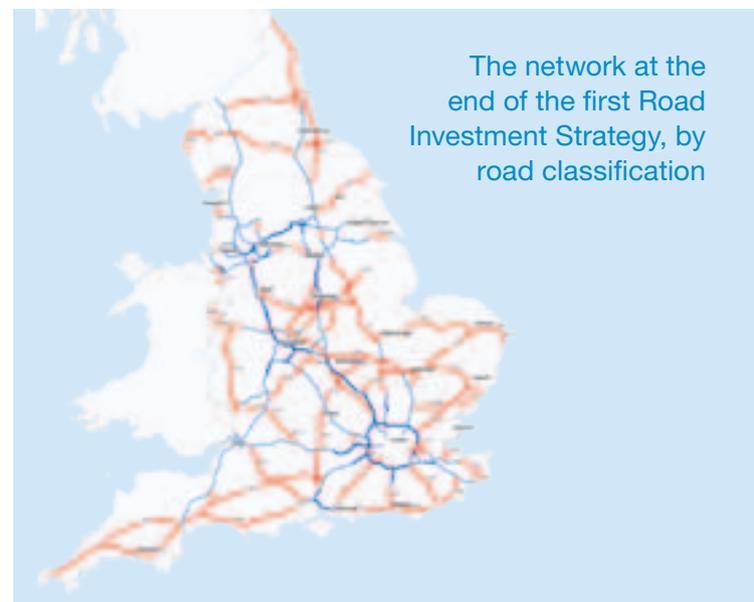
It is important that we consider what will need to be undertaken over the short, medium, and long term to maintain, operate, and enhance the network.

We believe that our network will require some element of harmonisation, with road standards converging to provide a common, high quality experience for our customers. Our ambition is for our network to reflect ‘four levels’ of road:

1. **Smart motorways** – which will service our highest demand areas and will continue to evolve, taking advantage of new technologies
2. **Motorways** – which will continue to function in their current form, providing resilience and capacity to our network and customers
3. **Expressways** – which will bring the safety and congestion advantages of our motorways to trunk roads
4. **All Purpose Trunk Roads** – which will continue to provide a vital service and connectivity to significant parts of the country, particularly more remote areas

The three snapshots depict the SRN, graphically, showing how the network may develop in a chronology leading from current day to the end of the first Road Investment Strategy and across the medium term. Full details can be found in the long term planning report – Connecting the Country – published alongside the Initial Report. This forms an initial estimate, with the medium term network reflecting the ambition government set out in the Road Investment Strategy. We will look to further review and develop this over forthcoming months and years, with further engagement with our stakeholders and customers.

Changes to our network over the longer term will be driven by technology, including roll-out of autonomous technologies. We will continue to plan and update our views as technology develops.



4. Key challenges

Looking across the areas that have played a strong role in informing future investments in the SRN, it is clear that there are a number of challenges we need to address.

Increasing safety

Improving the safety of all of those who use our network or work on our roads, striving to meet our zero harm target



Providing better journeys every day

Operating and enhancing the SRN to increase capacity and unblock bottlenecks – delivering the reliable and fast journeys that customers need



Extending the life of the network

Maintaining and improving our infrastructure, protecting our network today and safeguarding it for the future



Supporting economic growth

Linking people, communities, businesses, and transport hubs, enabling regional, national, and international connections



Making roads work for everyone

Providing for the needs of all customers – not just those who are driving on our roads



Working more harmoniously with our environment

Making a positive impact on the environment, surrounding landscapes, and local communities



Planning for the roads revolution

Preparing our roads today to ensure that our network is ready for, and resilient to, the world of tomorrow



5. Setting investment priorities

5.1 Operating the SRN

Our operational activities keep the SRN running. Given the level of traffic on the SRN, its changing nature, and the increasing number of smart motorways, we believe it is critical to continue and, in some areas enhance, funding for our operations. These activities bring safety, reliability, and resilience benefits, which are arguably the highest priorities for our customers. Looking forward to Road Period 2, we have identified a series of key areas for investment.

Operational support

We want to invest in providing the operational support needed to keep the SRN running smoothly, against a backdrop of increasing demand, extensive road improvement schemes, and the enhanced operational support requirements of smart motorways. This could mean improved control room technology, greater on-road capability, and trials to automate litter collection. We also believe the Traffic Officer Service could potentially be extended onto our busiest A-roads to provide a more comprehensive service, and that new ways of working to expand this coverage should be investigated.

Customer service

We want to ensure that our customers trust us and believe in the work we do on their behalf to improve the SRN. To do so, we need to deliver against our five-year Customer Service Outline Plan to develop a set of customer service standards to support this. A key focus is likely to be on minimising the impact of roadworks on our customers, which might mean completing roadworks in shorter sections, as well as changing the working hours on some roads. This will come at a cost, which we must balance against the improved experience our customers will have as a result. We will also investigate how the recent trials of increased speed limits through roadworks could be rolled out more widely.

Better information

We want to continue to improve the quality of information and digital messaging we provide to our customers, as well as continuing to provide real-time traffic updates, keeping pace with advancements in communications technology, and investigating providing integrated travel information. Our roadside Variable Messaging Signs (VMS) are an important source of information for our customers and we propose to continue working with the Department for Transport to investigate whether greater delegation of freedom of action would maximise the benefits VMS could bring.

More reliable journeys

Journey time reliability is a key issue for our customers, and we want to continue to provide improved reliability. Our traffic officers play an important role in this, in particular through enabling roads to be re-opened rapidly after incidents. With the right level of investment, there may be scope to provide an even higher level of service in this area. Diversion routes are also key to reliability and, during the next road period, we want to continue to inspect the condition and signage on existing routes, identify where we do not have appropriate routes, and then bring them up to the agreed standard. We also need to continue to improve our roads' resilience to more extreme weather events, and invest in replacing our fleet of winter vehicles.

Seamless journeys

We want to improve how we work across organisational boundaries to keep traffic moving. Through investing in a series of technology projects and hardware solutions, we can drive greater collaboration and sharing of data between ourselves and the neighbouring Local Highway Authorities to deliver traffic which flows better, no matter who manages the road. This will include opportunities to integrate the traffic signal system with local authority systems.

Managing more smart motorways and expressways

Our operational activity will need to increase to keep pace as the provision of smart motorways and expressways expands, and demand for the network increases. This will enable us to keep the network open for traffic, providing faster, safer, and more reliable journeys, and keeping our customers well-informed throughout. While increasing efficiency will allow us to make better use of the resources we do have, additional investment will ensure that we can continue to provide a comprehensive Traffic Officer and control-centre service to all road-users.

Preparations for electrified, connected, and autonomous vehicles

We recognise that our network is operating in a world of rapidly changing technologies and innovation. We want to work with government, the Office for Low Emission Vehicles (OLEV), and key stakeholders to ensure that we can support the use of electric vehicles on our network. We believe there should be even greater provision of charging facilities in the next road period, and we will need to work with government to understand the nature of the role we should play in this area over the forthcoming years. We also want to investigate and plan how we operate the roads as CAVs become a larger part of the fleet. We want to learn from road trials and pilots of new innovative solutions around CAVs that will help prepare our network for future technologies, including collaborating more closely with car manufacturers, developers, and other providers. We will work with government to support their interest in providing 5G network connectivity on motorways.



5.2 Maintaining our infrastructure

Transport Focus' research has highlighted the importance that our customers place on our assets, such as roads, bridges, and signs, being in a good state of repair and working effectively. The state of our assets is also fundamental to our ability to provide safe, reliable, and high quality journeys.

Whole life costs

Over 60% of our motorways in the UK were built during the 1960s and 1970s. Now, 40 to 50 years on, some of the structures on these roads need major work. We would like to invest to either extend the life of these assets or, in some cases, replace them. As required by our licence, we will consider the whole life cost of constructing and maintaining our assets to avoid costly reactive maintenance and keep a safe and serviceable network.

Efficient and effective asset steward

During Road Period 2, we also want to continue to work towards becoming a more efficient and effective asset steward. We will further improve the way we measure the condition of our assets, and use new technology to provide data to support improved asset information tools and more accurately predict future asset behaviour. We would like to build on the work delivered by our Asset Delivery programme and move towards operating this way across all our regions. Our aim is to make more evidence-based investment decisions, and to identify and deliver the right treatment at the right time. This will not only improve the lifetime and value of every asset, but also minimise disruption to our customers.



Investment options

We have developed a number of investment options for our different asset types, which would enable us to improve the condition, and extend the life, of our assets. Below we set out our preferred approach for each asset class, but we will need to balance the availability of funding to complete repairs against the necessity of achieving good value for money, and we will work with our supply chain and the DfT to determine the best approach.



Road surface

To deliver an improvement in overall road surface condition, while making choices that favour lower whole life costs - for example, potentially intervening earlier or renewing to a deeper level if that will give the surface a longer life time



Structures

To maintain safe structures, while also making steady, positive progress in improving and strengthening structures, where needed



Drainage

To invest proactively to improve drainage condition, increasing resilience to future stresses and reducing the potential impact on other assets



Geotechnical

To increase the frequency of inspections of all geotechnical assets, allowing us to better understand their condition and deliver timely interventions



Vehicle restraint systems

To continue to replace steel with concrete, as required



Lighting

To establish a sustainable portfolio of lighting assets, balanced against social, economic, and environmental needs



Road signs and markings

To proactively maintain and repair ancillary assets, including improving signage of diversion routes, to enhance our customers' journey experiences



Tunnels

To maintain safe and serviceable tunnels, moving towards a consistent standard of operation for all tunnels



Traffic signals and roadside technology

To maintain the condition of technology assets to the level required to support operational management of the network



Soft estate

To restore the estate condition to deliver landscape and heritage objectives, as well as supporting biodiversity

5.3 Enhancing our network

In determining our priorities for road enhancements in Road Period 2, we want a portfolio of enhancements that: responds to our customers' and stakeholders' needs; reflects the state of the network itself; aligns to the priorities of our shareholder; and provides a foundation for the future. The following pages set out our proposed priority areas for investment.

Schemes under construction

We expect to complete any schemes that are already in construction from Road Period 1, assuming they continue to demonstrate value for money and receive the relevant planning approvals.

Smart motorways

We want to build on the commitments in the first Road Investment Strategy to develop a smart motorway spine to our network, connecting our nation's largest cities. Smart motorways increase capacity, support economic connectivity, improve journey times, and offer reduced environmental impacts to traditional road widening. We would seek to invest to retrofit our older smart motorways, where appropriate, to the latest standards, adding capacity and making them easier to use. We also need to continue to build confidence among drivers on smart motorways through improved signage, high-visibility emergency areas, and awareness campaigns.

Expressways

We want to modernise our busiest A-roads and lay the foundations for a network of expressways, which would provide many of the benefits of a motorway performance road without the conventional costs.

Strategic studies

We need to further progress the six strategic studies presented in the first Road Investment Strategy to tackle locations with significant capacity and connectivity challenges. We recognise the transformational benefits that these could bring, however, given their scale, we advise that these should form a long term programme of delivery over successive road periods. Government have also asked us to identify and design solutions for a further 15 locations announced in the first Road Investment Strategy, with the aim that these could starting planning and construction in the next road period. We expect to progress these so they could start delivery in Road Period 2. However, as with all potential new schemes, these should be subject to ongoing assessments of value for money, affordability, and deliverability.



New schemes

We need to continue to invest in existing parts of the network where it is needed the most – based on current performance, customer requirements, government initiatives, local growth plans, and future performance indicators. We want to establish a balanced pipeline of schemes to deliver better value for money and improved outcomes for our customers. This would include smaller and medium sized schemes, such as junction improvements or capacity enhancements, which offer significant congestion, safety, development, or environmental benefits, to balance alongside the larger schemes that will result from the first Road Investment Strategy studies.

Local priorities

We want to invest to tackle local priorities, as well as target local safety or congestion blackspots. We believe that targeted funding should be used for small schemes, and delivered at a regional level.

Integrated transport network

We will continue to support funding off the SRN where it has benefits to our network. We expect to continue our collaboration with other key infrastructure developments, such as Heathrow Airport and HS2, to unlock growth, support connectivity, and co-ordinate the delivery of our programmes. We also believe that the establishment of the Major Roads Network could offer significant benefits to our customers by enhancing end-to-end journeys. We would like to work with DfT and the sub-national transport bodies to support its establishment.



5.4 Focusing on designated funds

We support the continuation of the designated funds into the next road period and recognise that they have a critical contribution to play in making roads work for everyone. Looking forward, we believe that the funds could focus on five key areas.

■ Growth and housing

We would like to continue to progress schemes to unlock economic growth, building on the success of the current fund.

■ Wellbeing and environment

We want to tackle some of the most severe impacts on local communities, the surrounding landscapes, and the environment. Bringing these funds together would allow an approach that covers human wellbeing and the natural and built environment more flexibly.

■ Connecting communities

We want to continue to create more, safer, and better links for pedestrians, cyclists, and horse riders. We should continue to connect communities and help people make sustainable travel choices.

■ Innovation

We want to continue to drive innovation across everything we do to help us prepare our infrastructure and operations for the huge changes we anticipate from the next road period and beyond. Funding in this area can progress projects to exploit innovative technologies and techniques in road construction and management, revolutionising what it means to both operate and travel on our roads.

■ Roadside facilities

We want to respond to customer feedback to improve roadside services and believe designated funding could support this. This could involve working with Motorway Service Area operators to improve the facilities available for customers, as well as providing rest stops along A-roads.

In addition, we believe we can deliver better outcomes through closer working with our stakeholders and partners and improved ways of working.



Our environmental ambition

Environmental impact is not just considered, and addressed, through our designated funds; environmental considerations are also incorporated into our core business, and will continue to be at the heart of our operations over future road periods. Our aspiration is not just to minimise harm, but to have an overall positive impact on the environment. Our environmental ambition is:

“A strategic road network working more harmoniously with its surroundings to deliver an improved environment.”

To achieve this ambition, we need to understand our current estate and its relationship to the surrounding environment – and we have made significant progress with assessing and recording this. Furthermore, we need to embed new ways of thinking and acting on environmental issues. We have also made progress with this, not least through our Strategic Design Panel, and will continue to focus on this area in the next road period.

We are proud of our achievements to-date. As an example, the new four mile A556 link between the M56 and M6 south of Manchester has been described as “Britain’s greenest road”. On this £192 million scheme, which opened in March 2017, we put environmental considerations at the heart of the project from the outset. We spent over £2 million on mitigating environmental impacts and promoting biodiversity, including construction of a green bridge to provide a crossing for cattle. We enhanced flora as well as fauna, completing “greening work” along the route. This included planting 280 semi-mature trees, 60,000 saplings, nearly 117,000 square metres of shrubs, and over 7,000 metres of hedgerow.

The above scheme won a silver award at the Green Apple Environment Awards. Our aim is to emulate successful approaches over the next road period, and apply the lessons we have learnt to future road projects.

5.5 Running our business

Our investment programme must also include the support and operational costs that are needed to help us deliver investment. These include business-critical areas, such as internal staff costs, information technology, and estates. We strive to be as efficient as possible and many of these support areas are in themselves designed to ensure effective delivery of our commitments via our programmes, projects, and day-to-day management.

Skills and capabilities

During the next road period, we are expecting to deliver more projects and an extensive programme of maintenance on the network. We will also be actively managing a more complex road network. We are planning and investing now, and will continue doing so, to develop and acquire the required additional capabilities and resources. This is vital to ensuring that we can deliver through the remainder of Road Period 1 and prepare for Road Period 2.

Internal infrastructure

We need to ensure that we have the internal infrastructure that will enable us to successfully deliver over the next road period. This includes investing in technology, IT systems, research, and in our office and operational estates. For example, we have developed a database to record and manage the condition of our assets, unifying the different asset management systems currently used across our regions and allowing more efficient and effective decisions. As we also expand our Asset Delivery approach to maintenance and bring key functions in-house, we need to acquire and fit out offices, control rooms, and outstations. For these reasons, investment in our running costs will be a critical enabler to successful delivery in the future.



6. Next steps

We will continue to work with DfT to support the development of the next Road Investment Strategy.

The publication of this Initial Report will initiate a public consultation, led by DfT. We want to hear the views of our customers and users, as well as those of the wider public, local government, and any other groups with an interest in the programme for Road Period 2. We believe that there is a big debate to be had on the future of roads investment, and we welcome all participation.

Once all feedback has been considered, and the findings published in 2018, DfT will develop the new Road Investment Strategy. In tandem, we will develop our Strategic Business Plan, which will set out how we intend to deliver our commitments between 2020 and 2025. These are due to be published in 2019.

Finally, we will set out a Delivery Plan with a detailed programme of investment to be carried out across 2020–2025, based on the commitments in the new Road Investment Strategy. To find out how to participate in shaping the future of England's SRN, and respond to the consultation, please visit [GOV.UK](https://www.gov.uk).





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