



Department  
for Transport

# Road Investment Strategy: Investment Plan



December 2014



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for Transport

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# 1. Overview

As part of the Road Investment Strategy (RIS), this Investment Plan outlines how we will invest in the Strategic Road Network (SRN) between 2015/16 and 2020/21, delivering the improvements that will put us on the path to achieving our long term vision.

In total, we are investing £15.2bn in over 100 major schemes to enhance, renew and transform the network over the 2015/16–2019/20 Road Period. This significant investment will be used to complete current road schemes, begin construction of previously-announced road schemes and also take 69 new road schemes into construction by 2020/21. It will also include asset renewal and maintenance. The RIS includes a long term funding commitment – the Statement of Funds Available – to support this programme.

The Investment Plan reflects the conclusions of the six feasibility studies announced in June 2013, examining the case for improvements to the A303, A1 and other key national corridors. We are announcing 20 new major schemes to improve crucial sections of these roads, including a £2 billion commitment to turn the A303 into a new strategic corridor to the South West.

It also brings forward a new package of investment, drawing on the Highways Agency's emerging Route Strategies, to begin the process of transforming our strategic roads. This includes schemes to tackle congestion, improve safety, support growth, connect rail hubs, ports and airports,

link our nation and transform the economy of the north.

*In total, we are investing £15.2bn in over 100 major schemes to enhance, renew and transform of the network over the next Road Period.*

We will also undertake a series of new strategic studies to address some of the most fundamental challenges facing our road network, developing options for the long term and ensuring that our roads remain robust for the foreseeable future.

A series of dedicated funds, each ring-fenced, will address some of the key local challenges across the network. Cycling, safety and better integration will benefit from £250 million of dedicated funding, and similar arrangements will exist to deliver environmental enhancements, improve air quality, foster innovation and support growth and housing.

Timely and efficient delivery of this Investment Plan forms part of the Performance Specification, which sets specific expectations for the SRN and for the Strategic Highways Company (the Company). The new Strategic Road Network Monitor will independently monitor the progress of the Investment Plan, and will include a report on delivery as part of their

published assessment of how well the company is performing.

In its entirety, this multi-year Investment Plan represents committed funding well beyond the level previously associated with investment on the SRN. This is the foundation on which the transformation of the network will be built, and through which the Strategic Vision will be achieved.

The following sections provide details on three factors that have informed the Investment Plan: considering how the SRN can best support economic growth, how the network and Company can do more to work with local partners, and how we can ensure there is a strong focus on protecting the environment throughout the Investment Plan.

## Economic Growth

Roads play a central role in our economy. Nearly every kind of economic activity depends on roads in some way.

- Over 80% of the nation's freight journeys are by road, with two thirds of these on the SRN<sup>1</sup>. Without these vital movements, our farms cannot move their produce, our factories cannot get their parts and our economy cannot compete internationally. Almost every product in our shops and every item in our homes has travelled by road at some point.
- The costs of transport are part of the price of every good we buy. Faster, better transport means cheaper goods. A well-functioning transport network has helped us to create one of the world's most efficient national logistics networks, which has helped supermarkets cut

costs and internet retailers to take off. The benefits of this are felt in every household budget.

- Millions of people travel by road for work. For those who commute by road, the state of the network not only determines how their working day starts and ends – it also decides which jobs are reasonably accessible and which are not. For those who travel during their working day, connections and congestion help determine a person's productivity.

A high-performing road network improves the health of our economy. Even those who do not drive benefit, as better links help local businesses to fill their order books and allow shops to keep their prices down.

However, our road network does not always match this aspiration. Congestion jams key arteries when they need to flow. Routes to ports and airports slow, making supply chains less competitive. Poor or missing links mean that cities which are close together do less business with one another, and fail to benefit from their potential synergy.

While the SRN plays an important role in our national economy, and has done much to shape our economic geography in recent years, it could also do much more. Putting in place high quality infrastructure will maintain our competitiveness and allow our economy to expand in new ways.

This Investment Plan will help the economy to grow in five key ways:

**The Northern Powerhouse** – we want to create a stronger economy across the north of England, with different cities joining together to form a single, world-beating economy. This cannot happen without effective transport.

<sup>1</sup> Transport Statistics Great Britain 2013, table 0401

In this road period, we will continue delivering Smart Motorways around Manchester, Sheffield, and Leeds, benefitting both the city regions themselves and, through their role as key transport hubs, the wider economy of the north of England. Better links to the North East will come as the first continuous motorway link to the region opens in 2017 and the A19 is upgraded to Expressway. Improvements in Liverpool, Leeds and Birkenhead will all unlock nationally significant growth sites.

We are also starting the process of a true transformation of the region's roads. By the end of the next Road Period, Smart Motorways will provide four-lane links between all the major cities of the region, including via the M62 across the Pennines. The A1 in Yorkshire will be upgraded to motorway, relieving the M1 in Sheffield and Leeds. Better links across the northern Pennines could extend the Powerhouse further north. A national and regional debate is required on whether we should commit to build a tunnel under the Pennines to link Manchester and Sheffield. The cost would be great, as would the possible transformative benefits for the economy.

**Smart Motorways and Expressways** – road users and businesses both need reliable networks. On the core of our motorway network, this means deploying world-leading technology to smooth journeys and open up additional capacity. The Smart Motorway roll-out will continue, supporting our biggest cities and increasingly linking them to one another. By the end of the second Road Period, there will be continuous Smart Motorway corridors linking London, Leeds, Manchester and Birmingham,

offering a reliable and consistent level of service to motorists.

The rest of the country needs equally dependable roads. Many parts of the country are linked by A-roads that are mostly high-quality, but are dominated by one or two bottlenecks. Consistency of performance is required – and to achieve this we will create a series of Expressways – consistently good roads which are largely or entirely dual carriageway, with grade-separated junctions, giving most users a motorway-quality journey.

The South West will lead the country in adopting this approach. £2 billion of investment in the A303 will create a new Expressway corridor into the region. Improvements to the A30 will extend an Expressway to within 15 miles of Land's End. Well-designed improvements offer the prospect of doing the same for the A417 near Gloucester. Taken together, this will send a clear message that this part of the country is open for business.

**Growth and Housing** – economic development places new pressure on our roads. Enterprise zones, industrial sites and new office parks all offer potential employment for their communities. Good access to the strategic network is an important factor in making many of these developments work. Equally importantly, enabling investment can prevent the results of new development being worse traffic for existing road users.

Schemes in this investment plan are linked to housing developments across England, making thousands of new homes possible. They improve access to enterprise zones and growth sites in Sunderland, Leeds, Stoke, Merseyside, the Black Country and other towns and

cities. The strategic studies announced as part of this programme will make sure that conditions on the M60 don't become a block on long-term growth in Manchester.

A further investment fund will make sure that the Company is able to pool its resources with developers and other partners, and keep responding to opportunities for growth throughout the Road Period.

**Better Connections** – for Britain to be a competitive economy, it needs the right connections to make its transport network effective. Roads need to serve ports, airports, and rail-freight, to make the business of exporting easier. This plan includes improvements to help access five key airports and seven major ports. It also backs developers' efforts to improve the M1 to allow a whole new rail freight interchange in the East Midlands.

Connections across the country will also improve. Improvements to A-roads at the edges of England from the A1 north of Newcastle to the A30 into Cornwall, will allow regional economies to compete more effectively. Improvements in the heart of the nation will also open up new opportunities – most notably completing an Expressway linking Cambridge to Milton Keynes, and possibly extending onwards to Oxford to connect some of our fastest growing cities.

**Congestion and Safety** – at a local level, some parts of our network are fundamentally overstretched, or are built in a way that leaves them vulnerable to accidents and disruption. Better safety and more capacity will have real benefits for the nearby economy – removing bottlenecks, preventing disruption and making it easier to travel.

Important improvements include upgrades to the south west quadrant of the M25, plus a long-term study to make sure the route is resilient in the future, significant widening of the A1 around Newcastle, and fixing bottlenecks on the A12 in Essex. This is on top of the major enhancements of capacity around Manchester and Birmingham announced at the last spending review.

Taken together, this programme is a massive injection of funding into a critical part of our national infrastructure, the impact of which will be felt by everyone from major corporations to growing small and medium-sized enterprises.

## Delivering with local partners

The SRN does not work in isolation; it sits within a larger road and wider transport network meeting national, regional and local needs for connectivity. Government is seeking to empower local partners to address more effectively social and economic challenges and opportunities in their localities.

Responsibilities and funding are being devolved to empower local areas, and new governance arrangements devised to promote more effective working in partnership between national and local bodies.

- **City Deals:** in September 2012 the government signed deals with eight of the largest cities in England, giving them more powers to help encourage growth and jobs in their area, as well as increasing their accountability for delivery. In 2013, deals were agreed with a further 20 cities.
- **Local Growth Fund:** Growth Deals were announced in July 2014 with all 39 local

enterprise partnerships. Funds were provided to local enterprise partnerships for projects that benefit the local area and economy. The Growth Deals committed the Highways Agency to develop a more proactive and collaborative approaches to promoting growth and to continue building strong relationships with Local Enterprise Partnerships, Local Authorities and Combined Authorities.

- The **Greater Manchester Agreement** takes devolution to a new level, with the agreement to a package of measures to devolve power and control to the city-region. Greater Manchester is to get its own directly elected city wide mayor with powers over transport, housing, planning and policing. The government hopes that Manchester will be the first of many big cities to take advantage of this greater devolution of powers.

Effective management of networks and traffic on the national and local roads depends on a strong partnership between the new Company, local authorities and other operational and strategic partners, such as the police and emergency services. This means thinking about the road network as a whole, and its connections with other modes of transport.

This means:

- **Planning together:** linking the pressures on the strategic network with the needs of local communities, with a view to arriving at shared agendas and solutions.

Through successive Route Strategies, the Company will continue to deepen its engagement with local partners to better understand the challenges and opportunities associated with the network and to develop evidence based long-term plans to bring about much

needed local economic growth and development. The Highways Agency's first round of Route Strategies has informed the investment plans in this RIS.

The Newcastle and Gateshead City Deal included a joint commitment to tackle transport problems in the local area to help pursue growth. The Government made a commitment to develop new proposals for improving the A1 Western Bypass, which is seen as a key constraint on the local economy. Newcastle committed to invest in complementary small, local schemes and in better traffic management. This Investment Plan delivers on the Department for Transport's commitment.

- **Delivering together on the strategic network:** by co-operating to develop and fund improvements, the Company and local partners can enable and accelerate local development, and so unlock growth.

Cornwall County Council is matching funding and taking forward preparation of the A30 Temple scheme, one of the few remaining undualled sections of the A30 in Cornwall, this will ensure the scheme is delivered significantly earlier than would otherwise have been possible.

The Company will be working with Local Enterprise Partnerships and Local Authorities to take forward proposals for match-funding enabling developments promoted in the Strategic Economic Plans. Up to £100 million has been set aside in the RIS to part fund these and future schemes unlocking local growth.

- **Investing together on the local network:** the new company will be able to invest in local transport networks where there are clear and demonstrable benefits

for users of both networks, so that institutional boundaries do not stand in the way of better conditions for road users. In some cases, better links on the local network are the best way to improve conditions on the strategic road network.

As part of a package of schemes to improve conditions on the M27, the HA will widen two railway bridges in Southampton, meaning people will have less need of the motorway and can complete more of their journeys on the local network.

Likewise, as part of the Government’s response to the Trans-Pennine feasibility study, the Company will be funding delivery of the A57 Link Road scheme in Tameside to relieve traffic blight affecting local communities on the nearby A628.

- **Operating together:** there are potentially sizeable gains from linking together respective control centres and traffic operations arrangements, planning for winter, sharing data and coordinating road works in order to manage traffic flows better.

The Greater Manchester Agreement has kick-started discussions between the Highways Agency and Greater Manchester authorities on how to establish more effective real-time working between their respective traffic control centres. This will continue when the Company is established.

We will make sure that there continue to be clear, effective channels for local authorities to work with the new company. Greater autonomy must not lead to any decrease in communication – the Infrastructure Bill and the draft statutory Directions and Guidance for the

new Company both include requirements to co-operate, which will underpin the arrangements described here.

## Protecting the environment

While the impact of roads on the economy is widely recognised as positive, many people are concerned about the effect that new investment will have on the environment.

*Today’s road schemes are very different to their predecessors, designed in far greater sympathy with their surroundings and with a much smaller environmental footprint.*

The Department and the Highways Agency have learnt a great deal in the past twenty years. Today’s road schemes are very different to their predecessors, designed in far greater sympathy with their surroundings and with a much smaller environmental footprint. This investment programme includes more than £1 billion of environmental mitigation measures, a large number of which are built into modern roads by default.

Given these improvements in design, there is no longer a forced-choice between a well-functioning road network and a well-protected environment. There are three key reasons why we are confident of this:

1. **Advances in environmental mitigation measures** – we continue to introduce new ways to limit the impact of new development on the local environment

### A249 Swale Crossing

The A249 links the Isle of Sheppey with the mainland, running through ecologically sensitive marshlands and an area of outstanding natural beauty. Between 2004 and 2006 construction work began on a new dual-carriageway bridge, following close cooperation between the Highways Agency and environmental bodies. Natural England and the Environment Agency approved a plan to restore a lost area of marshland – Chetney Marsh – to compensate for land lost to the construction of the bridge.

The environmental package that was agreed, and which started work before any road-building began, took great care to avoid damage to rare local species. Water voles living on the site were temporarily relocated to a special holding area in Dorset so they could be reintroduced once work was complete. In a world-first, workers successfully transplanted the rare sedge grasses along the route to a new site.

2. **Closer partnership with environmental bodies** – we are cooperating with environmental bodies to make sure that the Company is doing all it can to mitigate environmental impacts
3. **Scope to improve the existing network** – we can help the environment by redesigning or replacing the oldest parts of the network, built when environmental issues were poorly understood and unsympathetic designs were common.

For much of the past decade, most road improvements in England have been upgrades to existing roads. Britain's road network has many of the routes that it already needs. When planning upgrades, the Company will try to make best use of the existing route; and where the alignment changes, use this as an opportunity to reduce the impact of the road on surrounding communities.

Where new alignments are proposed, the Highways Agency works hard to limit the environmental impacts. Most major schemes begin with thorough environmental surveys, building a detailed picture of how the scheme

will affect the environment. These are then used to refine the scheme design and to build up a plan of environmental mitigation.

The techniques that we use to counter environmental problems are extensive, and have improved greatly in the past twenty years:

- **Impacts on the landscape are carefully controlled**, trying to make the road fit into the existing landscape. This starts at the very beginning of scheme design, finding a route that matches the local topography and tries to hide the road behind existing features such as established woodland or natural contours. To further reduce the visual impact, designers use false cuttings and stands of new trees. In recent years, the Highways Agency has also tried to reduce the night-time impact by scaling back the amount of lighting, so that it only covers safety-critical sections of the road.
- **All new and improved roads now use low noise road surfaces** to help reduce the noise made by vehicles. Improvements in engine technology

mean vehicles are quieter than they have ever been. Where communities live close to the road, as on the M1 at Luton or the

A14 north of Cambridge, the HA has also installed barriers to block some of the noise.

### Better than the status quo

In the past, much of the debate around the environmental impacts of road schemes has focused on their potential for damage. However, equal weight needs to be to their potential to bring about genuine environmental improvements.

Britain's Strategic Road Network was not created overnight. While its kerbs and surfaces may only ever be a few years old, some of the routes were traced by Georgian surveyors, Roman legionaries or bronze age herdsmen. Today, these roads carry traffic that their creators could never have predicted, with serious environmental consequences.

One example of this was the A3 at Hindhead. For many years, traffic between London and Portsmouth was jammed at a three-mile stretch at the village of Hindhead in Hampshire. Here, the road ran next to the Devil's Punchbowl – a major local landmark and a designated Area of Outstanding Natural Beauty (AONB). In this section, no improvements had been made, meaning that this site and the nearby village were constantly blighted by a stream of heavy traffic.

In 2007, construction started on the A3 Hindhead improvement. This was a wholly new road which travelled to the south of Hindhead itself, before disappearing into a pair of 1.14 mile tunnels. The road then emerged to the north of the AONB and linked up with the existing A3. This removed the last single-carriageway stretch on the road.

When the scheme opened in 2011, the Highways Agency then set about closing the old A3. To the northern end of the scheme, the road was either converted to a bridleway or was allowed simply to return to nature. In other places, what had been a major trunk road between London and the south coast became the access road to a National Trust car park.

The Hindhead Tunnel demonstrates how a well-designed road scheme does not have to choose between helping the environment and helping the economy. In addition to greatly improving journey times between London and Portsmouth and removing one of the network's accident blackspots, the ambitious design of the scheme meant that an AONB once blighted by traffic is now returning to its natural state.

We want to build on this example. As part of this investment plan, we are committing to a new tunnel at Stonehenge, together with the removal of the existing A303 from the landscape around the stones. We are also commissioning a study into the feasibility of a new tunnel under the Peak District which could provide a high performance road link between the great Northern cities of Manchester and Sheffield. More than £300m is being made available across the Roads Period to improve hundreds of sites nationwide, and start the process of retrofitting modern environment standards to the rest of the network.

- **Early preparation allows the Highways Agency to protect wildlife**

– both during construction and after the scheme has opened. When building, the Highways Agency starts its mitigation measures well before construction. They work with the seasons to relocate affected animals with the minimum disruption, in some cases creating entire substitute habitats for protected species.

- **We are also making new commitments to design.**

The Company will have a ‘design panel’ that can be involved in the most sensitive schemes and locations, to help ensure that the negative effects of the network are limited and the positive opportunities to make improvements are seized.

*By 2020, funding for purpose-built environmental improvements will be five times higher than at any point in the history of the Highways Agency.*

This is not to say that road schemes will not continue to have an environmental impact; but today that impact is better understood and more thoroughly addressed than ever it has been before. These practices will continue in the new Company, and will be extended further. This Investment Plan includes the biggest ever fund for environmental mitigation, so the measures listed above can be rolled out further than ever before. By 2020, dedicated funding for environmental improvements will be five times higher than at any point in the history of the Highways Agency, allowing the retrofitting of more environmental measures to the existing network.

## An Ultra-Low Emission Network

Efforts to make strategic roads more environmentally sensitive cannot focus on the infrastructure alone. The vehicle fleet must also become cleaner if air quality is to improve; and it must undertake a fundamental shift in its design if we are to develop a low carbon economy.

For the UK vehicle fleet, emissions standards are set at a European level, with input from national governments. Vehicle emissions standards are now steadily tightening globally: reflecting concerns about carbon, air quality and how to deal sustainably with the consequences of rapid development and urbanisation. These ever-tougher regulations are inevitably leading to radical changes in how we power our vehicles – a process that is already well underway with the launch of plug-in hybrid, battery electric and fuel cell vehicles from major auto manufacturers.

The past thirty years have seen tailpipe emissions fall, pollutants removed from petrol, fuel economy rise and carbon emissions decrease significantly per mile driven. This process will continue and accelerate. 2014 has seen the uptake of ultra-low emission cars in the UK, supported by the activities of the Office for Low Emission Vehicles (OLEV), rising extremely rapidly. In the second quarter of 2014 sales of plug-in vehicles were 400% up on the same quarter the previous year and rapidly approaching 1% of all new car sales.

Thanks to the work done so far, Britain is at the forefront of the adoption and manufacture of electric vehicles in Europe, and it remains the Government’s aim that by 2040 new vehicles will fundamentally differ to that of today. Most vehicles will be quiet, clean and zero-carbon.

*Britain is at the forefront of the adoption and manufacture of electric vehicles in Europe, and it remains the Government's aim that by 2040 new vehicles will fundamentally differ to that of today. Most vehicles will be quiet, clean and zero-carbon.*

While this is primarily the task of government, the company also has an important role in bringing this about. This is why, over the investment period:

- **The Company will work on the recharging facilities on the SRN** to allow it to be a truly national network. Many motorway service areas have already invested in rapid charging points. The company will work with operators to ensure this becomes a comprehensive national network. More generally, the Company will have the aim of ensuring that 95% of SRN will have a charging point every 20 miles. Wherever possible, these will be rapid charging points that can charge a battery-powered electric vehicle in less than 30 minutes.
- **The Company will seek to cut the emissions from its own activities.** The construction industry is working to develop lower-carbon methods of road-building, and these should bear fruit in the years ahead. Operational decisions, such as the decision of whether to run network lighting all-night, can reduce the day to day emissions of the company.
- **The traffic officer service will maximise the number of ultra-low emission vehicles in its fleet by 2020** – a particularly significant step in decarbonising its activities.



## 2. The feasibility studies

As part of the Spending Review announcement made in June 2013, the Department committed to undertaking six feasibility studies to help identify and fund solutions to tackle some of the most notorious and long-standing road hot spots in the country. These studies included work at the following locations:

- **The A303/A30/A358 corridor**
- **The A1 North of Newcastle**
- **The A1 Newcastle-Gateshead Western Bypass**
- **The A27 corridor**
- **Trans-Pennine routes**
- **The A47/A12 corridor**

We recognise the strategic importance of these corridors and locations, and of finding solutions to their problems. These studies have investigated the priorities for the routes and tested that potential improvements demonstrate a robust case for investment, offer value for money and are deliverable.

Following a process of engagement and discussion the Department set out the details of the scope, timing and management arrangements for each study, establishing Stakeholder Reference Groups to help with the work and to ensure that the views of those affected were captured throughout the study process.

Each study considered and analysed the evidence available on the current problems faced at each location and the potential issues or future pressures that may arise. The work identified the priority needs for investment and reviewed a number of potential investment options and their performance in tackling those issues. Further work and analysis looked at the strength of the economic case for the investment and the degree to which they demonstrated value for money, and their deliverability within the first Road Period.

Following completion of the study work and consideration of the potential investment options we have committed to take forward an overall feasibility study investment package of around £3.5 billion. This includes a number of proposals from each study, and these are outlined in the sections below.

The proposals identified in this investment package will require further work, engagement and consultation in order to reach agreement on the specific details of each proposal. Delivery will require the successful completion of the necessary statutory planning process and the continued development of business cases and demonstration of value for money.

Summaries of the individual studies will be published shortly.

## The A303/A30/A358 corridor

The A303/A30/A358 corridor is a vital connection between the South West and London and the South East. While the majority of the road has been dualled, there are still over 35 miles of single carriageway. These sections act as bottlenecks for users of the route resulting in congestion, particularly in the summer months and at weekends, delays to traffic travelling between the M3 and the South West and an increased risk of accidents. The A303 passes through the Stonehenge World Heritage Site, separating the iconic stones from other Scheduled Monuments and severely limiting the enjoyment of the wider site. Further west the road passes through the Cranborne Chase and Blackdown Hills AONB.

We recognise the damage that the existing road does to the setting of numerous Scheduled Monuments and Stonehenge itself, and so we intend to construct a tunnel at least 1.8 miles long to take traffic away from the surface, reuniting the landscape of the World Heritage Site.

We intend to upgrade all remaining sections of the A303 between the M3 and the A358 to dual carriageway standard, together with creating a dual carriageway link from M5 at Taunton to the A303, as part of a long-term commitment to creating a new Expressway to the South West.

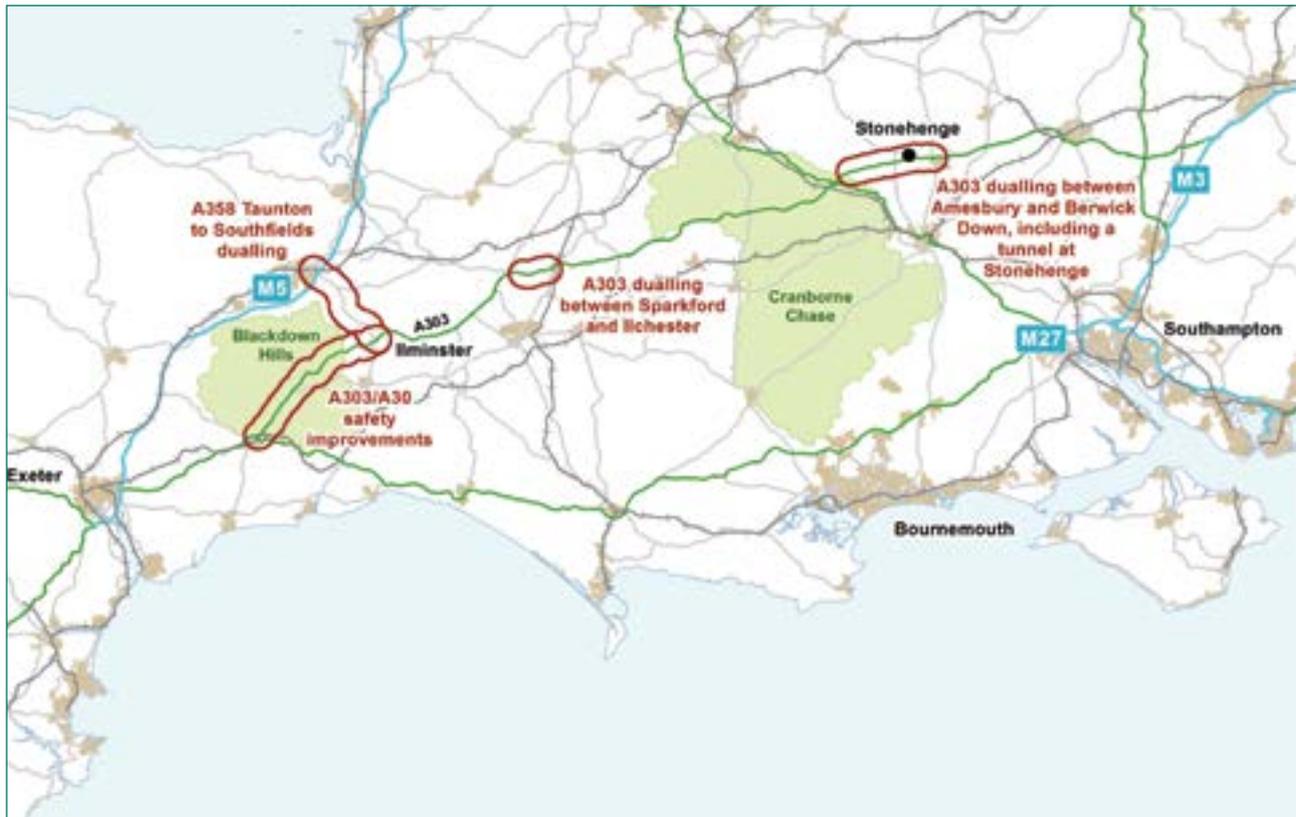
We intend to start this process with three major improvements, as part of a total A303/A30/A358 corridor package of commitments worth £2 billion:

- **A303 Amesbury to Berwick Down dualling** – construction of a twin-bored tunnel at least 1.8 miles long as the road passes Stonehenge and a bypass for Winterbourne Stoke to link the existing dual carriageway section around Amesbury with the dual carriageway at Berwick Down.
- **A303 Sparkford to Ilchester dualling** – dualling of the 3 mile single carriageway section of the A303 between Sparkford and Ilchester.
- **A358 Taunton to Southfields dualling** – creating a dual carriageway link from the M5 at Taunton to the A303.

We will also set aside funding for smaller-scale improvements to the A303/A30 section between Southfields and Honiton to improve safety and journey quality for road users recognising that large scale improvements would be challenging given the protected landscape and topography surrounding the route. This includes some small-scale work in the Blackdown Hills AONB which will take account of the environmental sensitivity of the area.

Taken together, this long-term programme will transform this route into an Expressway to the South West. Full implementation of these proposals will run beyond the first Road Period, and we intend that subsequent Road Investment Strategies will fund the remaining improvements.

### Outcomes from the A303/A30/A358 corridor feasibility study



## A1 North of Newcastle

The A1 north of Newcastle provides a nationally important connection between Newcastle and Edinburgh. While the M6 remains the main traffic route to Scotland, the A1 is an essential link for the North East and Northumberland. Improving the road has been a long-standing call from businesses and communities.

We recognise that this route needs substantial improvement to meet the needs of the local economy and to better fulfil its role in the national transport network. In order to make this happen, we are announcing an investment package worth around £290 million consisting of the following:

- **A1 Morpeth to Ellingham** – thirteen miles of upgrade to dual the carriageway linking the Morpeth and Alnwick bypasses with the dual carriageway near Ellingham, to create a continuous, high-quality dual carriageway from Newcastle to Ellingham.
- **A1 north of Ellingham enhancements** – a set of measures to enhance the performance and safety of the A1 north of Ellingham, including:
  - Three stretches of climbing lanes totalling 2.5 miles
  - Five junctions enhanced with right-turning refuges
  - Better crossing facilities for pedestrians and cyclists.

These changes will ensure that for the first time there will be dual carriageway from London to Ellingham – 34 miles north of Newcastle. The remainder of the route will also become safer and have fewer delays, with bottlenecks tackled and junctions improved.

Longer term, we have a vision to upgrade the full route to Expressway Standard, and we will continue to examine further investments in future Road Investment Strategies.

### Outcomes from the A1 North of Newcastle feasibility study



## A1 Newcastle-Gateshead western bypass

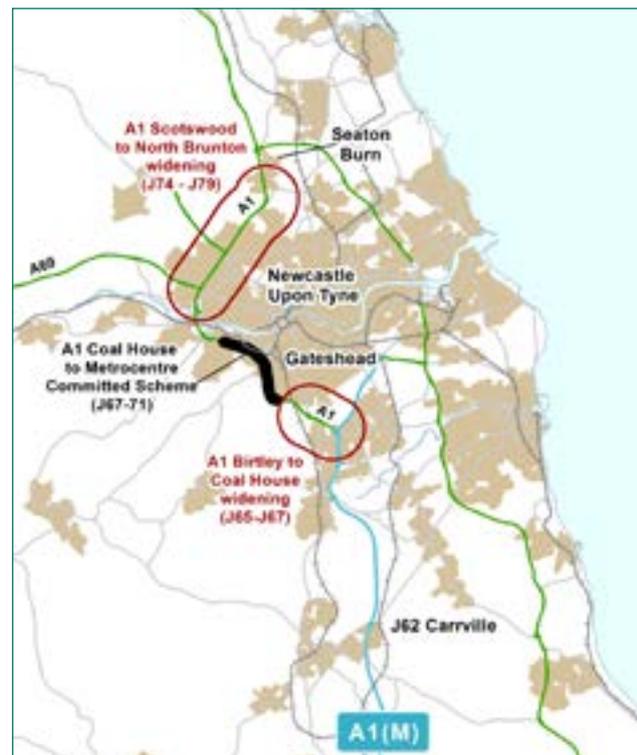
The A1 Newcastle-Gateshead western bypass is important to the economy of the North East, supporting both regional and local connectivity. The route has some of the most congested highway links in the region and it needs to perform well to support the ambitions for local growth. As part of the 2012 Newcastle City Deal and the 2013 Spending Round, we committed to widen the bypass from Coal House to the Metro Centre (J67 to J71) to three lanes, where delivery work has already started.

To tackle the current congestion and address the forecast impacts of traffic growth from planned development, we are announcing an investment package worth around £350 million and consisting of the following:

- **A1 Birtley to Coal House (J65-J67)** – online widening south of Gateshead to three lanes. Alongside this enhancement, separate maintenance schemes will replace and improve the Allerdene Bridge, which carries the A1 over the East Coast Main Line. Constructed nearly 40 years ago, the bridge requires regular maintenance works to keep the bridge operational.
- **A1 Scotswood to North Brunton (J74-J79)** – four and a half miles of narrow lane widening to allow three lanes of traffic through the junctions, with four lanes between some junctions.

We have also identified other improvement measures. The planned investment package, for example, includes technology upgrades and a number of associated improvements for pedestrians and cyclists to provide better access and reduce severance caused by the bypass. Taken together, this investment will help to ease congestion and support local growth and tackle the on-going maintenance requirement of the Allerdene Bridge, making the route more resilient. Longer term, we will continue to examine the case for further improvements to the other sections of the Western Bypass in future road investment strategies.

### Outcomes from the A1 Newcastle – Gateshead western bypass feasibility study



## The A27

The A27 is the only east-west trunk road south of the M25. It links the key coastal urban areas between Portsmouth and Eastbourne with each other and the rest of the SRN. Over three quarters of a million people are concentrated in the urbanised coastal area. The route also runs along and through the South Downs National Park. Over 60% of the 67 miles length of road is dual carriageway, while four stretches of the road remain single carriageway at Arundel, Worthing and east of Lewes.

The local economy has strengths in advanced engineering, tourism and other sectors and has accommodated substantial growth over the past decade. Over 60,000 new homes and substantial employment growth are expected to be developed over the next 15 years along the coast.

There are a variety of short and long distance trips along the route, but few travelling end-to-end along the A27. The towns and cities attract additional traffic during the morning and evening peak hours and there are also seasonal increases in traffic. So, our aim is to address congestion at key hotspots, the delays for road users, separation of communities – notably in Arundel, Worthing and Lancing – air pollution, and an above average number of accidents.

We are therefore announcing an investment package worth around £350 million and consisting of the following:

- **A27 Arundel bypass** – a new dual carriageway bypass to link together the two existing dual carriageway sections of the road. The starting point will be the previous preferred route, subject to consultation with the National Park Authority, local government and the public on this, and alternative options.
- **A27 Worthing and Lancing improvements** – improvements to the capacity of the road and junctions along the stretch of single carriageway in Worthing and narrow lane dual carriageway in Lancing. The extent and scale of the improvements, including the option of full dualling, are to be agreed in consultation with West Sussex County Council and the public.
- **A27 East of Lewes** – funding set aside pending further work on capacity increases following review of long term growth plans in light of any recommendation made by the Airports Commission.

We will also develop sustainable transport measures at Arundel, Worthing, Lancing and East of Lewes.

## Outcomes from the A27 feasibility study



## Trans-Pennine routes

The routes between Manchester and Sheffield provide a key connection between two of our most important Northern cities. Current journey times and performance of the connecting routes compare unfavourably against links between other cities separated by a similar distance. Elements of the route, particularly the A628, perform poorly both in terms of delays and accidents, causing impacts for both the communities on the route and on the environment of the Peak District National Park. There have been long-standing calls for improvements to connectivity but to date, an acceptable solution has not been found.

In order to make improvements, we are announcing an investment package worth over £170 million consisting of the following:

- **Mottram Moor link road** – a new dual-carriageway link road from the M67 terminal roundabout to a new junction at A57(T) Mottram Moor and a new single-carriageway link.
- **A57(T) to A57 link road** – a new single carriageway link from the A57 at Mottram Moor to a new junction on the A57 at Brookfield, bypassing the existing A628/A57 and A57 Woolley Lane/Hadfield road junctions.
- **A61 dualling** – on the east side of Pennines, completion of the dualling of the A61 between the A616 roundabout and junction 36 of the M1.

- **A628 climbing lanes** – consideration of the provision of two overtaking lanes on the A628 near Woodhead Bridge and near Salter's Brook Bridge. We are very aware of the specific environmental protections (SAC, SSSI, SSC) in place in and around these locations and will therefore work closely with the National Park Authority. For any proposals to go ahead, they will need to be sensitively designed and their potential impacts properly assessed and understood so that the improvements are in keeping with the significance of the Park's protected landscape.

- **Safety and technology improvements** – safety measures focused on addressing accident clusters; and the provision of traffic light cameras, speed cameras and message signs to allow drivers to make informed decisions.

These will address congestion and improve journey times between Manchester and Sheffield, as well as addressing issues with the safety and resilience of the route and deal with the impacts of the traffic in Mottram.

As part of the process of developing and delivering this investment package we will, through consultation with local communities and stakeholders, look to reach consensus on the scope and viability of further improvements and extensions to the Mottram Moor Link Road that would alleviate the issues faced in Tintwistle and Hollingworth.

In the longer term, as a strategic study ahead of the next RIS, we will consider how to get the balance right between economic gains through improving connectivity, and protecting and enhancing our valued natural environment and landscape. The Department

and the Company will work with Transport for the North to explore the costs and feasibility of a high performance road link between

Manchester and Sheffield through a purpose-built tunnel. This could link the economies of the two cities while avoiding damaging impacts on the Peak District National Park.

### Outcomes from The Trans-Pennine routes feasibility study



## The A47/A12

The A47/A12 trunk road runs for 115 miles from the west of Peterborough to the east coast ports of Great Yarmouth and Lowestoft. While there have been some improvements in recent years, over half the road is still single carriageway. The cities of Peterborough and Norwich attract additional traffic along the route, particularly during the morning and evening peak periods. There has been rapid growth over the past decade and the area is expected to continue to grow with over 50,000 new jobs and 100,000 new homes planned for the next 15 years. This means congestion and delay for users, as well as a greater risk of accidents. The route also passes through the Broads National Park.

We know most people travel relatively short distances, rather than the entire length of the route and some stretches of the road are over-capacity. For that reason there is no case for making the entire route a dual carriageway at this moment in time. There are, however, a number of key challenges at specific points. Our aim is to address those challenges to reduce congestion, delays and accidents and we will review the case for further improvements in future Road Periods.

We are announcing an investment package worth over £300 million and consisting of the following:

- **A47 Wansford to Sutton** – dualling of the A47 between the A1 and the dual carriageway section west of Peterborough.
- **A47/A141 Guyhirn junction** – creation of a new, larger junction linking the A47 and A141.
- **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** – dualling of the A47 to fill a gap in the dual carriageway section between Norwich and the Acle Straight.
- **A47/A11 Thickthorn junction** – improvement of the interchange between A47 and A11, improving access into Norwich.
- **A47 & A12 junction enhancements** – improvements to junctions throughout Great Yarmouth, including reconstruction of the Vauxhall roundabout.
- **A47 Acle Straight measures** – addressing safety concerns by making short-term and long-term improvements, potentially including installation of safety barriers, junction improvements, road widening and capacity improvements. These will be subject to appropriate environmental mitigation, working with Natural England and the National Park Authority at all stages.
- **Renumbering part of the A12** – as part of this improvement package, we also intend to renumber the A12 between Great Yarmouth and Lowestoft as the A47, to better reflect the route's nature as a continuous corridor.

## Outcomes of the A47/A12 feasibility study



### 3. Key investments on the Strategic Road Network

We are committing a total of £15.2 billion in the enhancement and long-term maintenance of the network between 2015/16 and 2020/21 including 127 major enhancements. This will be used to complete the road schemes currently under construction and begin construction of previously-announced road schemes. It will also be used to take 69 new road schemes into construction over the course of the Road Period, and to develop a further pipeline of future improvements for the network.

This Road Investment Strategy includes a long term funding commitment by government to support delivery of this programme. This is an important change of approach, which involves ring-fencing investment for the Strategic Road Network in a way which takes it outside of the normal decisions on departmental budgets. This means that the schemes listed below have access to committed funding, allowing them to enter construction during this Road Period.

This represents a level of commitment well beyond the level previously associated with investment on the strategic road network.

Because these schemes feature in the Investment Plan, their delivery forms part of the performance specification. The new Strategic Road Network Monitor will independently monitor the progress of the investment plan, and will include a report on delivery as part of their published assessment of how well the Company is fulfilling the requirements of the performance specification.

## North East and Yorkshire

- 26 major schemes
- £1.4 billion invested this Road Period
- A1 all motorway Doncaster to Newcastle, all dual Newcastle to Ellingham
- Smart motorways linking Sheffield and Leeds to Manchester and London
- Comprehensive review of connectivity across north and south Pennines

## North West

- 16 major schemes
- £1.5 billion invested this Road Period
- Biggest increase in capacity into the region since 1971
- Key east-west and north-south links upgraded to Smart Motorways
- Comprehensive review of connectivity across north and south Pennines

## Midlands

- 31 major schemes
- £1.8 billion invested this Road Period
- 145 miles of Smart Motorway to improve links from Birmingham to London, Manchester
- 11 schemes unlocking housing and growth across the region

## East

- 17 major schemes
- £2.0 billion invested this Road Period
- £1.5 billion upgrade to the A14
- Dualling Cambridge to Milton Keynes link
- Phase 1 of major A12 upgrade
- Major upgrades to A47

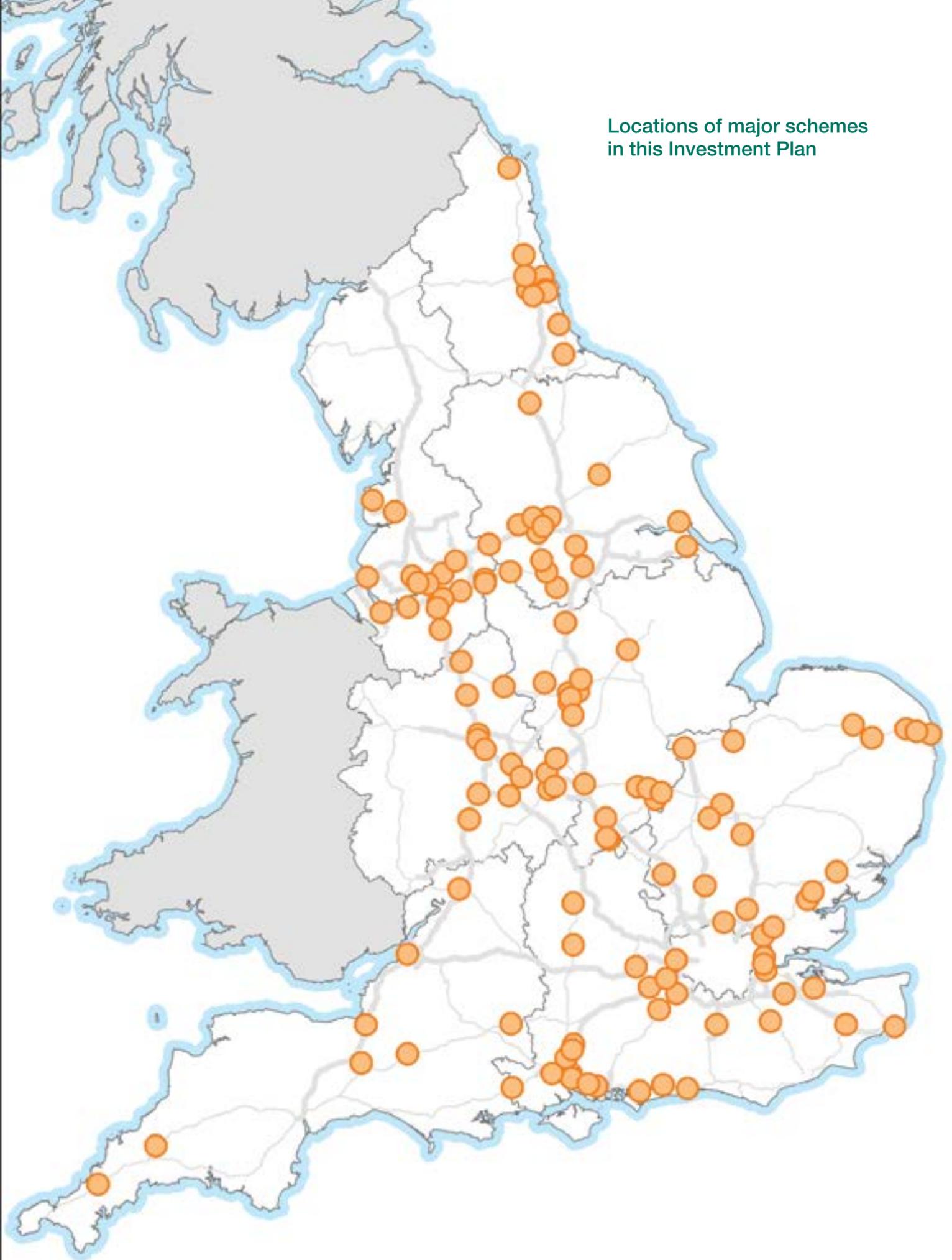
## South East and London

- 29 major schemes
- £2.2 billion invested this Road Period
- Upgrades around 10 out of 31 junctions on M25
- New smart technology on M25, M1, M3, M4, M20, M23, M27 and A1(M)
- Tackling 'missing links' on the South Coast A27

## South West

- 8 major schemes plus £500 million further investment in A303
- £2.0 billion worth of investment open or under construction by 2020
- Single largest new scheme in the programme – tunnel at Stonehenge
- Expressways for Cornwall, Gloucestershire

Locations of major schemes  
in this Investment Plan



## Investment status

Five types of investment commitment are listed in the section below:

**In construction** – all relevant design and planning hurdles have been cleared and construction of this scheme has already begun. We are committing ongoing funding to support its delivery.

**Committed** (*previously announced, or newly announced in this Investment Plan*) – we are committing the full anticipated funding for this scheme. In some cases, this may include funding from other sources within central government, including the Local Growth Fund. Provided that the necessary statutory approvals are granted and the scheme continues to demonstrate value for public money, it will enter construction during this roads period.

**Committed subject to other contributions** – we are committed to provide part of the anticipated funding for this scheme, based, on the expectation that the balance of funding will be available from other parties, including local authorities and/or affected property developers.

- In many cases, agreement over the relative scale of contributions has been reached. In these cases the scheme will in effect be committed provided the agreed contributions are made, and construction will begin during this Road Period.
- In other cases, the Company will first need to reach agreement with other parties over the scale of relevant contributions. Where agreement is reached in a suitable period of time, construction will also begin during this Road Period.

**Developed for the next Road Period** – this scheme will be developed during this Road Period, but may not enter construction until the next Road Period.

- This is usually because the design of the scheme is complex and needs to consider a number of potential options – a process which takes time to complete.
- In some cases, the interaction between a proposed scheme and other committed work on the network means that the disruption caused by doing all proposed work at once would be significant.

In either case, we are committing funding to prepare this scheme so it can be ready to enter construction early in the next Road Period. If the Company is able to develop the scheme more quickly than expected, and if efficiency savings at the Company mean that surplus funds are available during this Road Period, construction may begin during this Road Period.

**Funded from other sources** – a scheme that is being fully funded under other funding frameworks or by developers. While it is not formally part of the Investment Plan and will not draw on the funds set out in the Statement of Funds Available, this scheme will be delivered alongside the other schemes listed in this section.

## Yorkshire and the North East

### Schemes in construction

- **A1 Coal House to Metro Centre** – widening the A1 south of Gateshead from two to three lanes between junctions 67 and 71, plus new parallel link roads between junctions 68 and 69 to remove traffic from the main carriageway.
- **A1 Leeming to Barton** – upgrading the A1 between Leeming and Barton to three-lane motorway standard; connecting together the two sections of the A1(M) in the north of England and

completing the motorway link from the Teesside and Tye and Wear to the rest of England.

- **M1 Junctions 39-42** – upgrading the M1 to Smart Motorway, including the use of hard-shoulder running, between junction 39 (Denby Dale) and junction 42 (M62 interchange) near Wakefield.
- **M1 Junctions 32-35A** – upgrading the M1 to Smart Motorway, including the use of hard-shoulder running, between junction 32 (M18 interchange) and junction 35A (A616) around Sheffield and Rotherham.

### North East and Yorkshire

#### Construction

- A1 A1 Coal House to Metro Centre
- A2 A1 Leeming to Barton
- A3 M1 Junctions 39-42
- A4 M1 Junctions 32-35A

#### Committed – previously announced

- A5 A19 Coast Road
- A6 A19 Testos
- A7 A63 Castle Street
- A8 A160/A180 Immingham

#### Committed – new

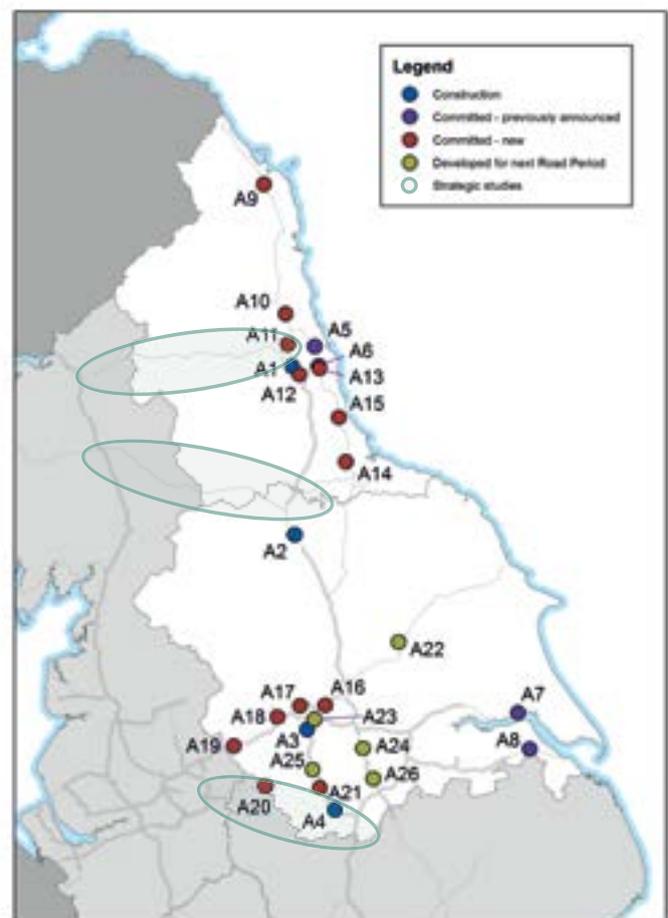
- A9 A1 North of Ellingham
- A10 A1 Morpeth to Ellingham dualling
- A11 A1 Scotswood to North Brunton
- A12 A1 Birtley to Coal House widening
- A13 A19 Down Hill Lane junction improvement
- A14 A19 Norton to Wynyard
- A15 A1 & A19 Technology enhancements
- A16 M1 Junction 45 Improvement
- A17 M621 Junctions 1-7 improvements
- A18 M62/M606 Chain Bar
- A19 M62 Junctions 20-25
- A20 A628 Climbing Lanes
- A21 A61 Dualling

#### Developed for next Road Period

- A22 A64 Hopgrove Junction
- A23 M1/M62 Lofthouse Interchange
- A24 A1 Redhouse to Darrington
- A25 M1 Junctions 35A-39
- A26 A1(M) Doncaster Bypass

#### Strategic studies

- Northern Trans-Pennine
- Trans-Pennine Tunnel



## Schemes Committed

### *Previously announced*

- **A19 Coast road** – replacement of the junction between the A19 and the A1058, allowing free-flowing movement for traffic along both the A19 and A1058. This provides uninterrupted access to the northern end of the recently-widened Tyne Tunnel. Together with the A19 Testos, this scheme raises the A19 to expressway standard from Yorkshire to north Newcastle.
- **A19 Testos** – grade separation of the junction between the A19 and A184, providing free-flowing access to the southern end of the Tyne Tunnel. Together with the A19 Coast Road, this scheme raises the A19 to expressway standard from Yorkshire to north Newcastle.
- **A160/A180 Port of Immingham** – improvements to the junction between the A180 and A160 near Immingham port, plus upgrading the A160 to a full dual carriageway between the A180 and the port itself.
- **A63 Castle Street** – grade separation of the A1079 Mytongate junction in Hull and improvements to the surrounding roads, including the provision of improved pedestrian and cyclist access across the A63. Along with the Connecting the City Bridge, funded through the Humber Growth Deal, this will improve cyclists' and pedestrians' access to and from Hull Marina and road access to and from the port of Hull.

### *Newly announced in this Investment Plan*

- **A1 Morpeth to Ellingham** – 13 miles of upgrades to dual the carriageway linking the Morpeth and Alnwick bypasses with the dual carriageway near Ellingham, to create a continuous, high-quality dual carriageway from Newcastle to Ellingham.
- **A1 North of Ellingham enhancements** – a set of measures to enhance the A1 beyond Ellingham, including:
  - Three stretches of climbing lanes totalling 2.5 miles
  - Five junctions enhanced with dedicated right-turn facilities
  - Better crossings for pedestrians and cyclists
- **A1 Scotswood to North Brunton** – narrow lane widening in Newcastle between junction 74 and junction 79 to allow three lanes of traffic through the junctions, and four lanes between some junctions.
- **A1 Birtley to Coal House** – online widening of the A1 south of Gateshead to three lanes. Alongside this enhancement, a separate maintenance scheme will replace and improve the Allerdene Bridge. Linking with the existing Coal House to Metro Centre scheme, this will provide three lanes of capacity from the Metro Centre to the A194(M) interchange.

- **A19 Downhill Lane** – significantly enhanced capacity on the junction between the A19 and the A1290 in Sunderland, supporting local plans for an International Advanced Manufacturing Park to the north of the existing Nissan Plant.
  - **A19 Norton to Wynyard** – widening of the A19 Billingham bypass in Teeside to three lanes, between the A139 and the A689, including replacement of the concrete surface with low-noise surfacing.
  - **A1(M)/A1 & A19 Technology enhancements** – new technology including vehicle detection loops, CCTV cameras and driver information signs, to allow better information to drivers and active management of traffic across Tyne and Wear.
  - **M1 Junction 45** – improvements to junction 45 of the M1, to the east of Leeds near the Aire Valley enterprise zone, through signalisation and improved slip roads.
  - **M621 Junctions 1-7 improvements** – improvement of key junctions on the M621 in central Leeds, providing safer and more reliable journeys for those travelling in the city.
  - **M62/M606 Chain Bar** – provision of a direct link from the M62 westbound to the M606 northbound and removing significant congestion from the main part of the existing junction.
  - **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 already under construction in Greater Manchester and existing Smart Motorways in Yorkshire, this will provide a full four lane Smart Motorway link between Leeds and Manchester.
  - **A628 climbing lanes** – consideration of the provision of two overtaking lanes on the A628 near Woodhead Bridge and near Salter's Brook Bridge
  - **A61 Dualling** – dualling of the A61 north of Sheffield between the A616 roundabout and junction 36 of the M1.
- Schemes developed for the next Road Period**
- **A64 Hopgrove junction** – upgrading the Hopgrove roundabout, to the east of York, to a grade separated junction.
  - **M1/M62 Lofthouse interchange** – reconstruction of the junction between the M1 and the M62 as an all-direction free-flowing interchange.
  - **A1 Redhouse to Darrington** – upgrading the A1 to motorway standard between A1(M) junction 38 and junction 40. This will mean that the whole of the A1 in Yorkshire has been upgraded to motorway standard, providing traffic between the North East and the Midlands with an alternative route avoiding Sheffield and Leeds.

- **M1 Junctions 35A-39** – upgrading the M1 to Smart Motorway between junction 35A (A616) and junction 39 (Denby Dale) near Barnsley. Together with other Smart Motorways already under construction in Yorkshire, this will provide a full Smart Motorway link between Sheffield and Leeds; and together with improvements in the East Midlands will provide a fully upgraded link between Leeds and London.
- **A1(M) Doncaster bypass** – adding further capacity to the two-lane section of the A1(M) between junction 35 and junction 38, to ensure that the A1(M) can form an alternative strategic corridor between the Midlands and the North East and to deal with congestion on the route.

## North West

### Schemes in construction

- **M60 Junction 8 to M62 Junction 20: Smart Motorway** – installation of Smart Motorway technology on the M60 between junction 8 and junction 18, plus the introduction of Smart Motorway with all-lane running between M62 junction 18 and junction 20.
- **A556 Knutsford to Bowdon** – online and offline widening of the A556 between the M56 and M6 with grade-separated dual carriageway, including a bypass around Mere. This improves the A-road that serves as the main southern access to Manchester to Expressway standard.

### Schemes committed

#### *Previously announced*

- **M6 Junctions 21A-26** – upgrading the M6 to Smart Motorway between junction 21A (M62 Croft interchange) and junction 26 (Wigan) in southern Lancashire. This links to the M62 junctions 10-12 scheme to the east.

### North West England

#### Construction

- B1 M60 Junction 8 to M62 Junction 20: Smart Motorway
- B2 A556 Knutsford to Bowdon

#### Committed – previously announced

- B3 M6 Junctions 21A-26
- B4 M62 Junctions 10-12
- B5 M60 Junctions 24-27 & J1-4
- B6 M56 Junctions 6-8
- B7 M6 Junctions 16-19

#### Committed – new

- B8 A585 Windy Harbour – Skippool
- B9 A5036 Princess Way – Access to Port of Liverpool
- B10 Mottram Moor link road
- B11 A57(T) to A57 Link Road
- B12 M6 Junction 22 upgrade
- B13 M53 Junctions 5-11
- B14 M56 new Junction 11A
- B15 M6 Junction 19 Improvements

#### Funded from other sources

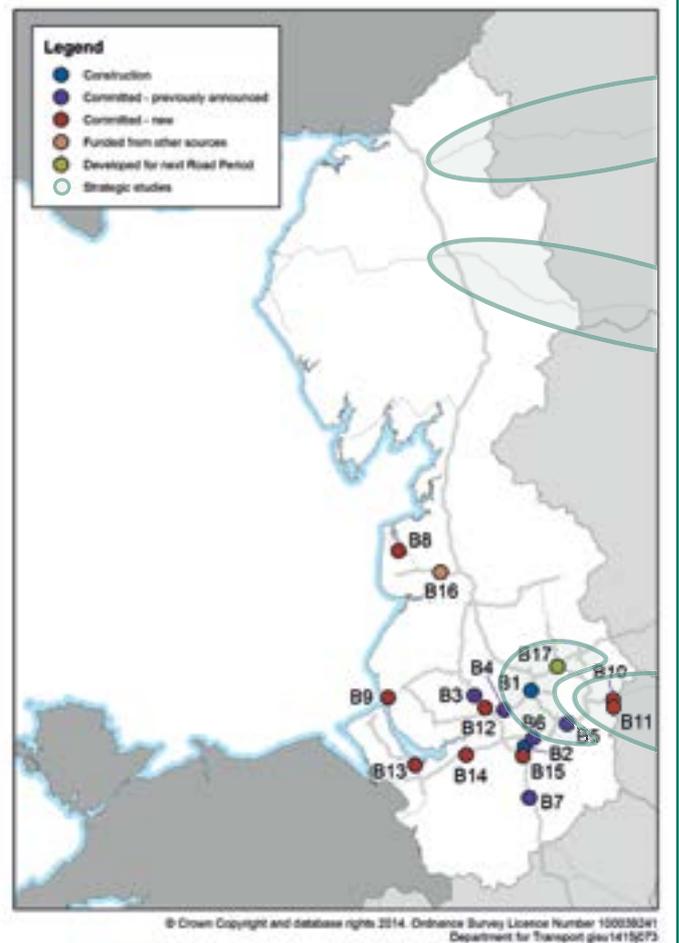
- B16 M55 Junction 2

#### Developed for next Road Period

- B17 M60 Simister Island Interchange

#### Strategic studies

- Northern Trans-Pennine
- Manchester North-West Quadrant
- Trans-Pennine Tunnel



- **M62 Junctions 10-12** – upgrading the M62 to Smart Motorway between junction 10 (M6 Croft Interchange) and junction 12 (M60 Winton interchange) west of Manchester. This links with the M60 Smart Motorway schemes to the east and the M6 junctions 21A-26 schemes to the north.
- **M60 Junctions 24-27 & 1-4** – upgrading south-eastern quadrant of the M60 to Smart Motorway between junction 24 (M67 Denton interchange) and junction 4 (M56 Kingsway interchange).
- **M56 Junctions 6-8** – upgrading the M56 to Smart Motorway between junction 6 (Manchester Airport) and junction 8 (A556). Together with improvements to the A556, the M6 junction 19 and Smart Motorways on the M6, this forms part of a comprehensive upgrade to Manchester's southern access.
- **M6 Junctions 16-19** – upgrading the M6 to Smart Motorway between junction 16 (Stoke) and junction 19 (Knutsford) in Cheshire. Coupled with other improvements to the M6 and M1, this forms the northern end of the 'smart spine' linking the North West and London.
- **A5036 Princess Way – access to Port of Liverpool** – comprehensive upgrade to improve traffic conditions on the main link between the Port of Liverpool and the motorway network. This scheme was identified as a central element of the Liverpool Local Growth Deal.
- **Mottram Moor link road** – a new dual-carriageway link road from the M67 terminal roundabout to a new junction at A57(T) Mottram Moor and a new single-carriageway link to bypass Mottram.
- **A57(T) to A57 link road** – a new single carriageway link from the A57 at Mottram Moor to a new junction on the A57 at Brookfield, bypassing the existing A628/A57 and A57 Woolley Lane/Hadfield road junctions
- **M6 Junction 22 upgrade** – improvements to junction 22 near Warrington, improving access to nearby developments.
- **M53 Junctions 5-11** – upgrading the M53 to Smart Motorway between junction 5 (A41) and junction 11 (M56 interchange) around Ellesmere Port.
- **M56 new Junction 11A** – a new junction to link the M56 to the A533 at Runcorn, creating an improved link to the new Mersey Gateway bridge from the south.

#### *Newly announced in this Investment Plan*

- **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.
- **M6 Junction 19 Improvements** – major improvements to the junction between the M6 and the A556 in Cheshire. Together with improvements to the A556, M6 and M56, this forms part of a comprehensive upgrade of Manchester's southern access.

### Schemes funded from other sources

- **M55 Junction 2** – this new junction will link the recently-approved Preston Western Distributor Road to the strategic road network.

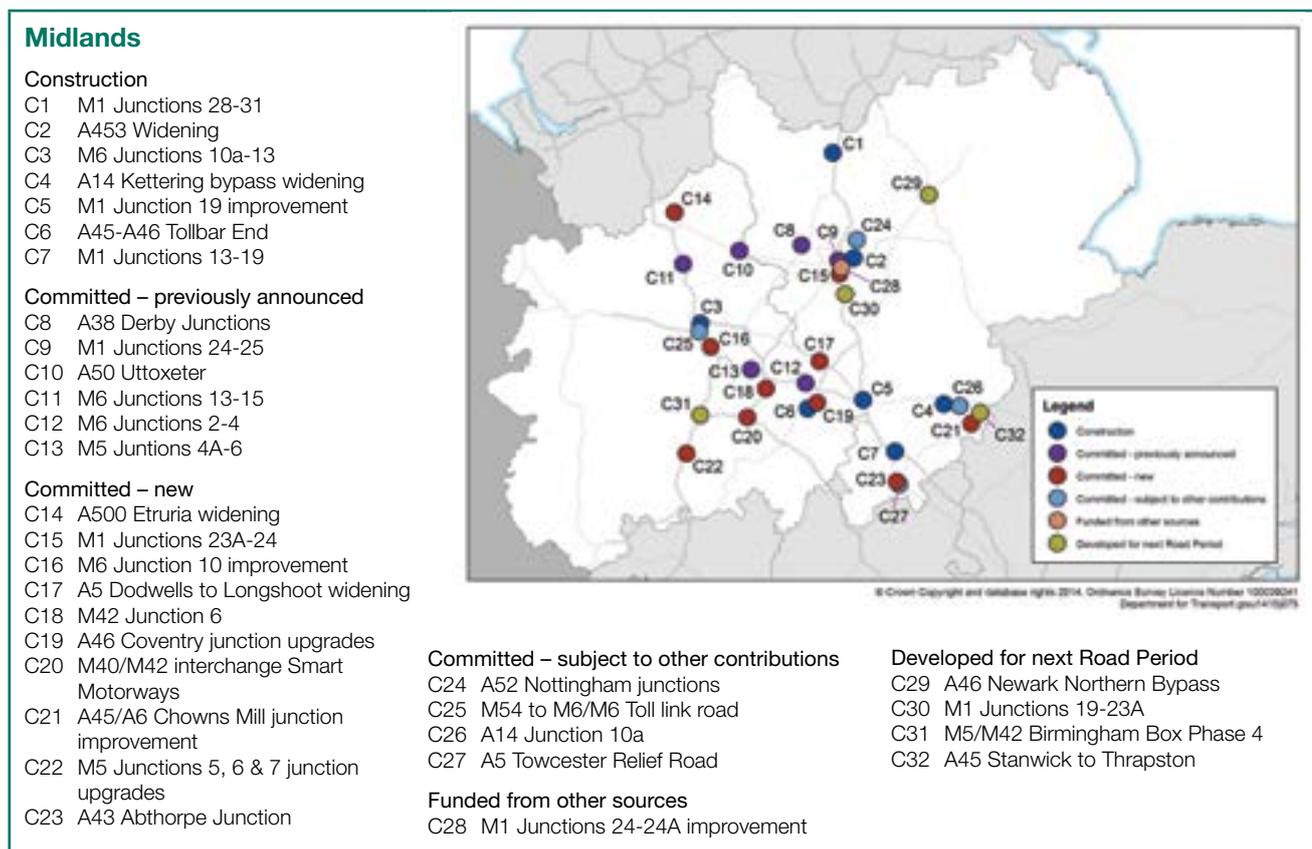
### Schemes developed for the next Road Period

- **M60 Simister Island interchange**  
– comprehensive improvement of the intersection between the M60 (junction 18), M62 and M66 north of Manchester, upgrading the critical junction for traffic heading eastwards over the Pennines.

## Midlands

### Schemes in construction

- **M1 Junctions 28-31** – upgrading the M1 to Smart Motorway between junction 28 (Mansfield) and junction 31 (Sheffield). Together with existing improvements to the south, this creates a Smart Motorway link between Derby, Nottingham and Sheffield.
- **A453 Widening** – upgrade of the A453 between Nottingham and the M1, replacing rural sections with new dual carriageway, adding an extra lane in each direction to the urban sections and improving junctions along the route.
- **M6 Junctions 10a-13** – upgrading the M6 to Smart Motorway between junction 10a (M54 interchange) and junction 13 (Stafford) north of Birmingham.
- **A14 Kettering bypass widening** – widening of the A14 to three lanes around Kettering between junction 7 and junction 9.
- **M1 Junction 19 improvement** – reconstruction of the Catthorpe interchange linking the M1, M6 and A14. In addition to the existing free-flowing connections between the M1 and M6, the improvement will allow free-flowing movement between the A14 and the M6, and the A14 and the M1 north.



- **A45-A46 Tollbar End** – replacement of the Tollbar End roundabout with a grade-separated junction, plus associated improvements to the neighbouring sections of the A46 and A45.
- **M1 Junctions 13-19** – upgrading the M1 to Smart Motorway between junction 13 (Milton Keynes South) and junction 19 (M6 Catthorpe interchange). Coupled with other improvements, this is an important link in the ‘smart spine’ linking London and the North West. Initial work on this scheme has begun, and full construction will start next year.
- **M6 Junctions 2-4** – upgrading the M6 to Smart Motorway between junction 2 (M69 interchange) and junction 4 (M42 interchange). Coupled with other improvements, this is part of the ‘smart spine’ linking London and the North West.
- **M5 Junctions 4A-6** – upgrading the M5 to Smart Motorway between junction 4A (M42 interchange) and junction 6 (Worcester).

#### *Newly announced in this Investment Plan*

### Schemes committed

#### *Previously announced*

- **A38 Derby junctions** – replacement of three roundabouts on the A38 in Derby with grade-separated interchanges, raising the A38 in the East Midlands to Expressway standard and removing congestion.
- **M1 Junctions 24-25** – upgrading the M1 to Smart Motorway between junction 24 and junction 25 in the East Midlands.
- **A50 Uttoxeter** – replacement of two roundabouts on the A50 in Staffordshire with grade-separated junctions.
- **M6 Junctions 13-15** – upgrading the M6 to Smart Motorway between junction 13 (Stafford) and junction 15 (Stoke south). Coupled with other improvements, this is an important link in the ‘smart spine’ linking London and the North West.
- **A500 Etruria widening** – widening of the A500 between Wolstanton and Porthill junctions near the Etruria Valley development. This compliments measures on the local road network funded under the Stoke-on-Trent and Staffordshire Growth Deal.
- **M1 Junction 23A-24** – extends the previously-announced M1 Smart Motorway junctions 24-25 improvement to junction 23A (East Midlands Airport).
- **M6 Junction 10 improvement** – additional capacity on junction 10, including the replacement of both bridges allowing the widening of the roundabout to four lanes. This scheme has been partly funded through the Black Country Local Growth Deal.
- **A5 Dodwells to Longshoot** – widening of a short section of the A5 near Hinkley, which carries the traffic of both the A5 and A47, to dual carriageway. This will improve access to the MIRA Enterprise Zone.
- **A43 Abthorpe junction** – improvement to the Abthorpe junction on the A43 near Towcester in Northamptonshire. Together with the A5 Towcester relief road, this

supports the Towcester southern extension and helps remove traffic from the centre of the town.

- **M42 Junction 6 improvement** – comprehensive 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 junction upgrades** – grade separation of the Binley and Walsgrave roundabouts on the A46 near Coventry, upgrading the trunk road sections of the A45 and A46 between the M6 and M40 to full Expressway standard.
- **M40/M42 interchange Smart Motorway** – introduction of Smart Motorway 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 Smart Motorway section between junctions 3A and 4 on the M42.
- **A45/A6 Chowns Mill junction improvement** – upgrade of the Chowns Mill junction between the A45 and A6 in Northamptonshire.
- **M5 Junctions 5, 6 & 7 junction upgrades** – significant expansion of junction 6 near Worcester, with improvements to approach roads, plus additional measures to improve capacity on junctions 5 and 7.

#### *Schemes committed subject to other contributions*

- **A52 Nottingham junctions** – a two-phase package of measures to improve

the junctions along the length of the A52 in Nottingham, including signalisation and junction reconstruction.

- **M54 to M6/M6 Toll link road** – adding a north-facing access between the M54 and the M6 and M6 Toll around junctions 10A and 11.
- **A14 Junction 10a** – a new grade-separated junction on the A14, to facilitate access to the East Kettering Sustainable Urban Extension.
- **A5 Towcester relief road** – A new link road to the south of Towcester, agreed as part of the Towcester southern expansion, allowing traffic to bypass the town centre.

#### Schemes funded from other sources

- **M1 Junctions 24-24A improvement** – as part of the transport mitigation measures associated with the new Roxhill rail freight interchange, developers are proposing to fund improvements to junctions 24 and 24A on the M1, including removal of the roundabout at junction 24A, a new direct southbound link from the A50 to the M1 and better links to junction 24.

#### Schemes developed for the next Road Period

- **A46 Newark northern bypass** – widening of the A46 north of Newark to dual carriageway, raising the last section of the A46 between the A1 and M1 to Expressway standard. Improvement of the A46/A1 junction to allow for better traffic movement to Newark and Lincoln.

- **M1 Junctions 19-23A** – upgrading the M1 to Smart Motorway between junction 19 (M6 Catthorpe interchange) and junction 23A (East Midlands Airport). Coupled with other improvements, this will complete a Smart Motorway corridor between London and Yorkshire. It also includes an upgrade to junction 21 to provide better links between the M1 and M69, reducing pressure on the main junction and to improve access to south Leicester.
- **Birmingham box Phase 4** – upgrading the remainder of the Birmingham box to Smart Motorway standard, with additional capacity and technology on the M5 and M42 on the western and southern sections of the road and supporting upgrades to junctions.
- **A45 Thrapston to Stanwick** – upgrading the existing single carriageway section of the A45 between Stanwick and Thrapston, so the A45 can provide a continuous Expressway between the A14 and the M1. This improvement will have to manage carefully the interaction of the road with the Stanwick Lakes SSSI<sup>1</sup> and the wider Nene Valley.

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1 Site of Special Scientific Interest

## East of England

### Schemes committed subject to other contributions

- **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. This scheme supports a number of local developments, and a series of developer contributions have been agreed – provided these contributions stand, the scheme is fully committed.
- **A5-M1 Link road** – a new junction 11A on the M1 north of Luton plus a road

linking to the A5 north of Dunstable. This will effectively serve as a diversion for the A5 through Dunstable, allowing strategic traffic to bypass the town. The scheme creates the capacity for major development at Houghton Regis and the developer has agreed to provide part of the funding.

### Committed Schemes

#### Newly announced in this Investment Plan

- **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.

### East of England

#### Committed – subject to other contributions

- D1 A14 Cambridge to Huntingdon
- D2 A5-M1 Link Road

#### Committed – new

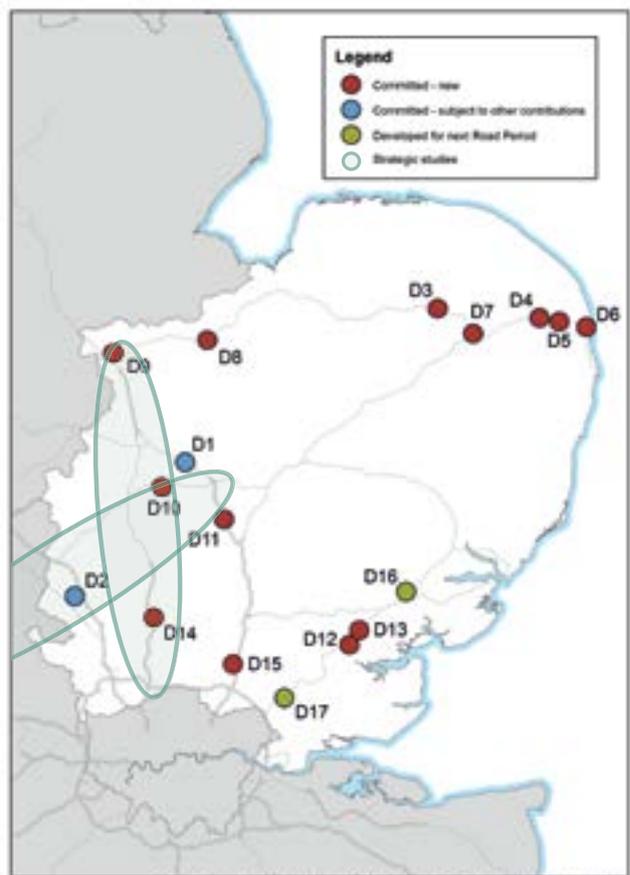
- D3 A47 North Tuddenham to Easton
- D4 A47 Blofield to North Burlingham dualling
- D5 A47 Acle Straight
- D6 A47/A12 junction enhancements
- D7 A47/A11 Thickthorn Junction
- D8 A47 Guyhirn Junction
- D9 A47 Wansford to Sutton
- D10 A428 Black Cat to Caxton Gibbet
- D11 M11 Junctions 8 to 14 – technology upgrade
- D12 A12 Chelmsford to A120 widening
- D13 A12 whole-route technology upgrade
- D14 A1(M) Junctions 6-8 Smart Motorway
- D15 M11 Junction 7 junction upgrade

#### Developed for next Road Period

- D16 A12 Colchester Bypass widening
- D17 A12 M25 to Chelmsford

#### Strategic studies

- Oxford to Cambridge Expressway
- A1 East of England



- **A47 Blofield to North Burlingham dualling** – upgrade of the A47 to fill a gap in the dual carriageway section between Norwich and the Acle Straight.
- **A47 & A12 junction enhancements** – improvements to junctions throughout Great Yarmouth, including reconstruction of the Vauxhall roundabout.
- **A47/A11 Thickthorn junction** – improvement of the interchange between the A47 and A11, improving access into Norwich
- **A47/A141 Guyhirn junction** – creation of a new, larger junction linking the A47 and A141.
- **A47 Acle Straight measures** – addressing safety concerns by making short-term and long-term improvements, potentially including installation of safety barriers, junction and road widening improvements. These will be subject to appropriate environmental mitigation, working with Natural England and the National Park Authority at all stages.
- **A47 Wansford to Sutton** – dualling of the A47 between the A1 and the dual carriageway section west of Peterborough.
- **A428 Black Cat to Caxton Gibbet** – improvement of the A428 near St Neots, linking the A421 to Milton Keynes with the existing dual carriageway section of the A428 to Cambridge, creating an Expressway standard link between the two cities via Bedford. The scheme is expected to include significant improvements to the Black Cat roundabout, where the A1 currently meets the A421.
- **M11 Junctions 8 to 14 – technology upgrade** – addition of several elements of the Smart Motorway package on the M11 between Stansted Airport and the Girton interchange north of Cambridge to help deal with congestion.
- **A12 Chelmsford to A120 widening** – widening the A12 to three lanes between junction 19 (north of Chelmsford) and junction 25 (A120 interchange).
- **A12 whole-route technology upgrade** – a major upgrade to technology applied to the A12 between the M25 and Ipswich, including vehicle detection loops, CCTV cameras and driver information signs, to allow better information to drivers and active management of traffic on the route.
- **A1(M) Junctions 6-8 Smart Motorway** – upgrading the existing two-lane section of the A1(M) around Stevenage to Smart Motorway to provide a third lane of capacity.
- **M11 Junction 7 upgrade** – expansion of junction 7 on the M11 to provide better access to Harlow.

### Schemes developed for the next Road Period

- **A12 Colchester bypass** – widening of the A12 between junctions 25 and 29 to three lanes and improvements to local junction layout, to relieve congestion and improve access between London and Ipswich.
- **A12 M25 to Chelmsford** – widening to three lanes between the M25 and the Chelmsford bypass (junctions 11 to 15), improving a road, which is a patchwork of smaller-scale improvements, to a modern, safe standard.

## London and the South East

### Schemes in construction

- **M3 Junctions 2-4A** – upgrading the M3 to Smart Motorway between junction 2 (M25 interchange) and junction 4A (Farnborough).

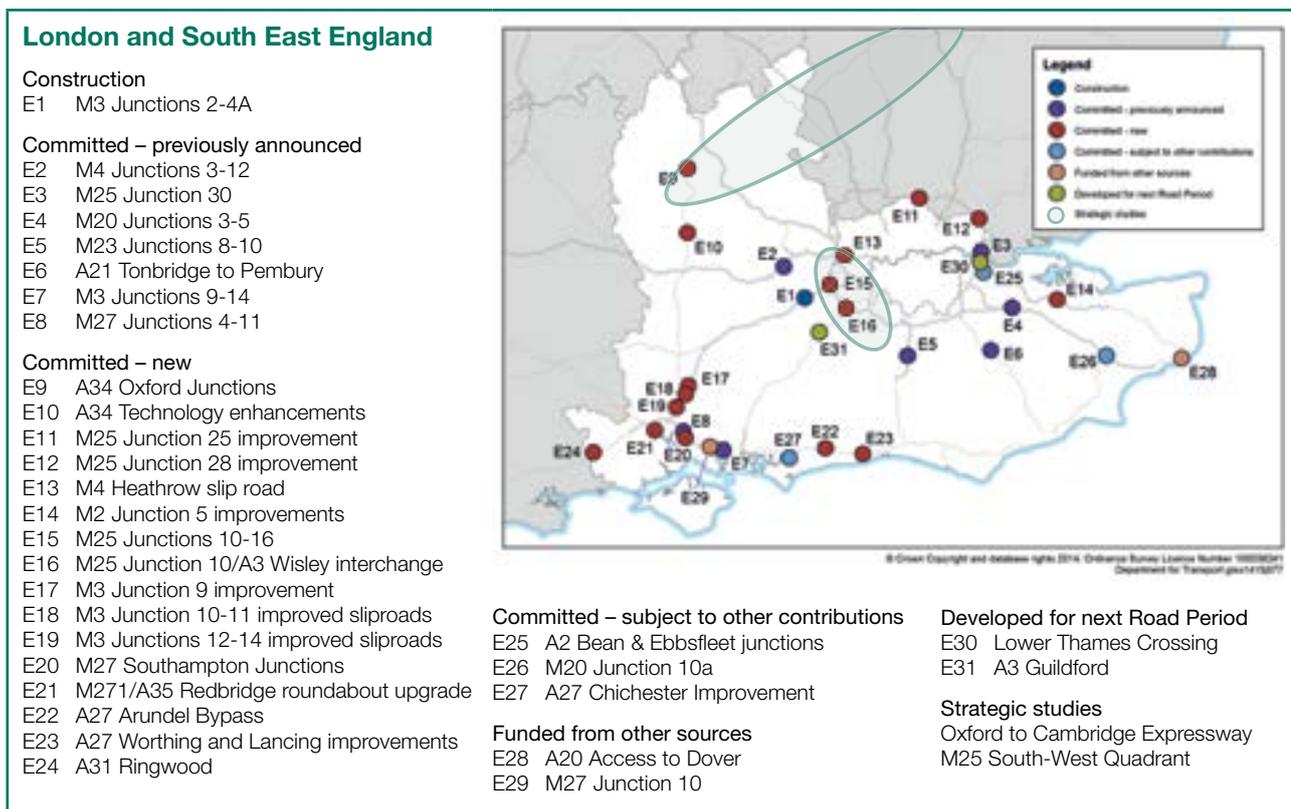
### Schemes committed

#### Previously announced

- **M4 Junctions 3-12** – upgrading the M4 to Smart Motorway between junction 3 (Uxbridge) and junction 12 (west of Reading), linking Reading and Heathrow.
- **M25 Junction 30** – comprehensive expansion of the junction between the

M25 and A13, including the introduction of free-flowing links for traffic from the southbound M25 to the eastbound A13.

- **M20 Junctions 3-5** – upgrading the M20 to Smart Motorway between junction 3 (M26 interchange) and junction 5 (Maidstone).
- **M23 Junctions 8-10** – upgrading the M23 to Smart Motorway between junction 8 (M25 interchange) and junction 10 (Crawley), improving connections to Gatwick.
- **A21 Tonbridge to Pembury** – dualling of the A21 around Tonbridge, linking the existing high-quality dual carriageway



north of the town with the remaining stretches to the south and grade separating the Longfield Road junction.

- **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.
- **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.

#### *Newly announced in this Investment Plan*

- **A34 Technology enhancements** – introduction of vehicle detection loops, CCTV cameras and driver information systems on the A34 between the M4 and the M40.
- **A34 Oxford junctions** – improvements to the Peartree and Botley interchanges.
- **M25 Junction 25 improvement** – upgrade of the between the M25 and the A10 at Cheshunt, providing greater capacity for traffic.
- **M25 Junction 28 improvement** – upgrade of the junction between the M25 and the A12 in Essex, potentially including the provision of dedicated left-turn lanes and improvement of the gyratory system.
- **M4 Heathrow slip road** – improved technology to allow better traffic management on the slip road into Heathrow.
- **M2 Junction 5 improvements** – additional capacity for the junction, through improvements to slip roads and enhanced junction approaches.
- **M25 Junctions 10-16** – upgrading the M25 between junction 10 (A3) and junction 16 (M40) through a mixture of enhancements, including hard shoulder running between junctions 15 and 16, as well as four-lane through-junction running between junctions 10 and 12.
- **M25 Junction 10/A3 Wisley interchange** – improvement of the Wisley interchange to allow free-flowing movement in all directions, together with improvements to the neighbouring Painshill interchange on the A3 to improve safety and congestion across the two sites.
- **M3 Junction 9 improvement** – upgrade to the junction to allow free movement from the A34 to the M3.
- **M3 Junctions 10-11 improved sliproads** – improvements to the most pressured sliproads on junctions 10 and 11 near Winchester.
- **M3 Junctions 12-14 improved sliproads** – improvements around junctions 12 and 13, providing an additional lane on part of the route and improving capacity through the junction.
- **M27 Southampton junctions** – additional capacity at junction 8 through improvements to the Windhover roundabout. In addition, parallel improvements to the local road network funded through their investment plan will improve two railway bridges, near junction 5 and in central Southampton, to allow traffic to avoid unnecessary travel on the motorway.

- **M271/A35 Redbridge roundabout upgrade** – creation dedicated left-turn lane for traffic leaving the M271 for Southampton docks and city centre, plus an improved roundabout layout for traffic from the docks turning onto the M271.
- **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** – improvements to the capacity of the road and junctions along the stretch of single carriageway in Worthing and narrow lane dual carriageway in Lancing.
- **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.

#### Schemes committed subject to other contributions

- **A2 Bean & Ebbsfleet junctions** – improvements to junctions on the A2 near Bluewater to enable major developments in the vicinity of Ebbsfleet.
- **M20 Junction 10a** – a new junction near Ashford in Kent, in order to support a major new development to the south east of the town.
- **A27 Chichester Improvement** – upgrades to four junctions on the Chichester bypass.

#### Schemes funded from other sources

- **A20 Access to Dover** – upgrades to the at-grade junctions along the A20 along Dover's harbour front, providing better access to the ferry terminal, improving pedestrian access and supporting the development along the Waterfront.
- **M27 Junction 10** – major development north of Fareham creates a need for expanded capacity on the M27 at junction 10. Developers, with support from the Local Growth Fund, are likely to fund the addition of new sliproads to allow west-facing movements onto the motorway.

#### Schemes developed for the next Road Period

- **Lower Thames Crossing** – the Government continues to consult on the different route options for a new Lower Thames Crossing. A decision on a preferred option will be reached during this Road Period, and design work is likely to begin.
- **A3 Guildford** – improving the A3 in Guildford from the A320 to the Hogs Back junction with the A31, with associated safety improvements.

## South West

### Schemes committed subject to other contributions

- **A30 Temple to Higher Carblake** – upgrading the A30 to dual carriageway at the remaining single carriageway section north of Bodmin, connecting together the existing high-quality dual carriageway.
- **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. Coupled with the Temple to Higher Carblake scheme and smaller-scale safety enhancements on the route, this improves the A30 to a consistent Expressway standard from Camborne to the M5.

### Newly announced in this Investment Plan

- **M49 Avonmouth junction** – creation of a new junction on the M49 to support development at Avonmouth.
- **M5 Bridgwater junction** – improvement of junction 23 through enhanced slip roads and more capacity on the junction itself.
- **A303 Amesbury to Berwick Down** – construction of a twin-bored tunnel of at least 1.8 miles as the road passes Stonehenge, coupled with a dual carriageway bypass for Winterbourne Stoke to link the existing dual carriageway section around Amesbury with the dual carriageway at Berwick Down.

### South West England

#### Committed – subject to other contributions

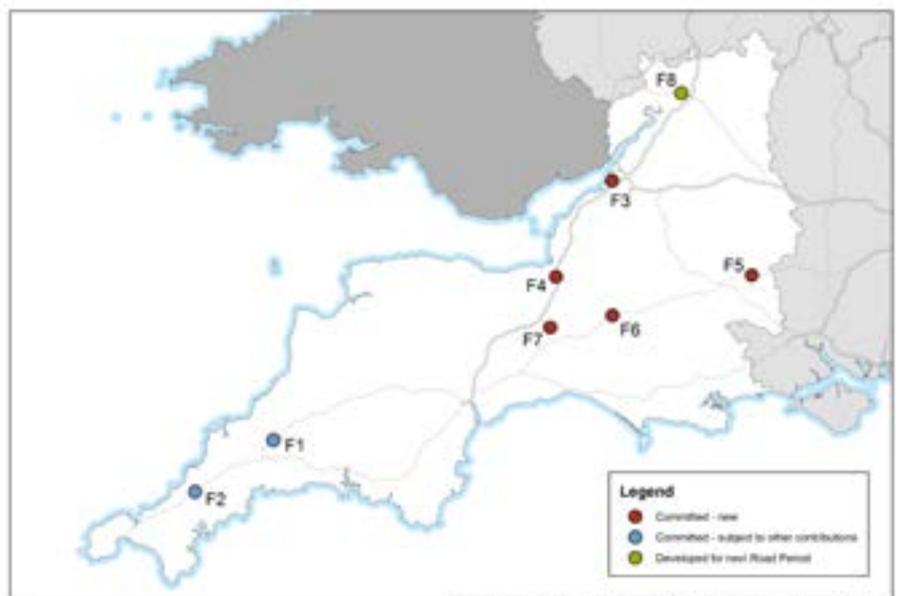
- F1 A30 Temple to Higher Carblake
- F2 A30 Chiverton to Carland Cross

#### Committed – new

- F3 M49 Avonmouth Junction
- F4 M5 Bridgwater Junctions
- F5 A303 Amesbury to Berwick Down
- F6 A303 Sparkford – Ilchester dualling
- F7 A358 Taunton to Southfields

#### Developed for next Road Period

- F8 A417 'Missing link' at Air Balloon



- **A303 Sparkford – Ilchester dualling**  
– 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 strategic road network where appropriate.

### Schemes developed for the next roads period

- **A417 ‘missing link’ at Air Balloon improvement** – connection of 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.

## 4. The strategic studies

Transforming our road network is the work of a generation. Chapters 2 and 3 set out the improvements that need to be made to the road network in the short and medium term to start this process. However some of the challenges and opportunities facing the network are too large and too complex to fix in a single Road Period. The answers could involve major new network connections, or fundamental choices about the future of transport in congested parts of the country. These issues need to be examined carefully, and the conclusions need to reflect the views of local residents, business, local authorities and road users of all kinds.

Building on the feasibility study approach in Section 2, we are commissioning a series of new strategic studies, to address of the biggest challenges facing the road network.

As with our previous feasibility studies, we will engage closely with interested stakeholders to set out and agree the details of the scope, timing and management of our study work, and how this may fit with other work considering future transport investments.

### Northern Trans-Pennine

Between Leeds and Manchester in the south and Edinburgh and Glasgow in the north, there is no complete dual carriageway link between the east and west of the country. This is one of the most visible gaps in the UK transport network, and is seen as a barrier to

business in the north of England. It also leaves the economy of the north of England heavily dependent on one road – the M62 – to provide strategic east-west connectivity.

There is potential to create a new strategic corridor in the region and link the A1 and the M6. Doing so could help the economies of the North East and Cumbria, as well as improve journeys between England and Scotland.

The two main east-west roads in this area, the A69 and A66, have been partially upgraded over the years. Both roads have a mix of high-quality dual carriageway and single carriageway. This study will examine the case for dualling one or both of these roads and making other improvements along their length. In doing this, we would further help the development of a northern powerhouse.

### Trans-Pennine Tunnel

Following the Trans-Pennine routes feasibility study there is a need for further examination of the case for Manchester and Sheffield to be connected by a high-performance link. We are keen to explore the costs and feasibility of this potentially transformational improvement.

Such a connection could have a dramatic impact on the economy of the north, particularly in combination with plans for high speed rail links. It would be capable of

fundamentally changing the nature of the journey between two of the most important cities of the north. But the invaluable landscapes and ecological significance of the Peak District National Park rule out a surface link. The only credible solution may be to construct a tunnel under the central part of the Pennines. This carries with it the potential to bring important environmental improvements to the Peak District National Park.

Such a project would be the most ambitious road scheme since the construction of the first motorways fifty years ago. The engineering and delivery of such a tunnel would be a national first. The proposal therefore needs to be studied in detail to confirm its viability, and we want to begin a national debate.

Working in conjunction with Transport for the North, this study will examine the strategic options for the tunnel, to understand the viability, costs and deliverability of such a connection, and determine its role and priority within the emerging transport strategy for the north.

### Manchester North-West Quadrant

The M60 plays a vital part in the life of Manchester and is a critical part of the North West transport network. The north-west quadrant of the road between junctions 8 and 18 contains some of the busiest stretches of road outside the M25. The mix of local traffic and strategic traffic, coupled with the design of the road, further exacerbates congestion and environmental problems.

Projected development is expected to put significant extra pressure on the road. To prevent the M60 becoming a block on Manchester's growth, more transport

capacity must be provided in the area. This study will look at the options for improving the transport network around the north-west quadrant. It will need to consider a range of different modal options, to make sure that the local road network and public transport options play their part. If major enhancements to the SRN are a part of the solution, they will also need to be considered.

This study will need to work closely with Transport for Greater Manchester, the Greater Manchester Combined Authority and local transport providers.

### A1 East of England

The A1 is one of our oldest trunk roads, and also one of the least consistent. With more than fifty years of local upgrades, the road today is a patchwork of different standards, ranging from four-lane motorway to elderly dual carriageway – sometimes in the same ten-mile stretch.

Major upgrade work will improve the road to motorway standard in Yorkshire, and to Expressway standard north of Newcastle. This study will look at bringing consistency to the southern section of the route, from the junction with the M25 in the south to Peterborough in the north. In particular, it will look at the case for improving the non-motorway section linking the two parts of the A1(M) to motorway standard.

Given the age of the road, much of the current route was chosen with little thought to the impact on the nearby environment. This study will examine whether improvements, including changing the alignment of the road, could reduce the environmental impact of the existing route and benefit local communities.

## Oxford to Cambridge Expressway

Some of the fastest growing towns in England are located in a belt to the north of London. However transport connections between cities such as Cambridge, Milton Keynes and Oxford are notably poor and create an artificial barrier between hubs of knowledge-based growth. With better links, the synergies between these cities would be stronger, and would do more to drive growth in nearby towns.

Much of this Expressway can be created through improvements to the existing road network. This investment plan commits to widening the A428 from Caxton Gibbet to the Black Cat Roundabout, which will create an Expressway from Cambridge to Milton Keynes. The A34 near Oxford could also form part of the route.

However, a gap remains between the M1 at Milton Keynes and the M40 near Oxford: traffic travelling the 30 miles between the two cities by dual carriageway has to take a 60 mile route. Growth around Milton Keynes and Bicester creates strong arguments for upgraded transport infrastructure in the area. This study will examine the case for creating an Expressway to connect the towns and cities of the 'Brain Belt' together. It will also look at other enhancements on existing roads along the route, including the A34 around Oxford.

This work will take into account work already planned to improve the rail network in this area.

## M25 South-West Quadrant

The south-west quadrant of the M25 is the busiest road in Britain. Pressure is also increasing fast: since 2004, the stretch between junctions 11 and 12 has gone from

carrying 158,000 vehicles a day to over 187,000. And the busiest parts now carry over 220,000. Nine of the ten busiest sections on the SRN are in this area, and severe congestion is a regular occurrence. The road is essential to local people, to traffic between the south east and the rest of England and to those getting to and from our busiest airports.

This investment programme will help improve conditions on this stretch, but further widening of the road beyond this point would be a considerable feat of engineering. It is time for a far-reaching study that can consider all of the options for transport in this area, taking account of any relevant findings from the Airports Commission. This will need to consider how to make best use of different transport modes and the local road network. It will also need to consider whether it is possible to strengthen or provide alternative routes for traffic to relieve pressure on the M25 itself.

The end result needs to be a lasting solution, which can keep people moving for a generation to come.

## Severn Crossing

In addition to these strategic studies, the next Road Period is expected to include the end of the private concession on the Severn Crossings. Following the construction of the second crossing, which was almost entirely funded through private finance, the concessionaire was entitled to reclaim a defined sum, through tolls on the two bridges.

Current projections indicate that this sum will be recouped by 2018, at which point the concessionaire will no longer have the right to toll the bridge. From this point onwards, the Government has the right to recoup its own costs from the construction,

maintenance and management of the bridge until 2027. However, the exact nature of that regime has yet to be determined.

This is an appropriate moment to think about the long-term future of the crossing, including how best to secure its continued maintenance, how to support the economies on both sides of the bridge, and whether the legal regime at the crossing can deliver this. The Department for Transport, working with the Company, the Welsh Assembly Government and other affected parties, will examine the future of the crossing in detail during this Road Period.



## 5. Maintaining the Network

Expanding the network is important to helping our economy. Maintaining our network is essential to keeping it functioning. Road maintenance affects all aspects of performance – the time that roads must be affected by repairs; the likelihood of accidents; even emissions from vehicles on the network.

Most of the traffic on the SRN in 2040 will still drive on roads that are familiar to us today. On our most important corridors, where hundreds of thousands of vehicles travel daily at high speeds, the need for maintenance is greatest of all. The challenge of maintaining the network is therefore central to making sure that our roads continue to support our economy in the long term. Surfaces and structures need to be resilient for the long term – regardless of their age or the differing impacts of time – and the Company must continue to manage the challenge of maintaining an asset that is in use 24 hours a day.

A programme of effective asset management is integral to any investment programme. Our bridges and tunnels need to be fit to last for a century or more, not only in the face of current challenges but also in readiness for the potential impact of climate change. Plans need to be laid to protect the network for the long term, and the capacity must always be there to deal with emergencies.

As part of this Investment Plan, we are committing over three quarters of a billion pounds to long term capital renewals every

year. This will allow for the repair and replacement of 80% of the road surfaces on the network, accelerating the transition from older surfaces to new ones that can be maintained overnight with less disruption for traffic. This also means that the noise impact of the network will be reduced further, as new surfaces are quieter than their predecessors.

This is on top of normal year-on-year maintenance, which handles day-to-day management of the network, and which is worth around £300 million a year. The total spending on maintaining and renewing the network will be over a billion pounds a year, 41% higher than it is at present, and fully committed as part of the investment plan. This will be coupled with a 38% increase in annual funding for local authority highway maintenance, helping to tackle potholes and other road repairs.

Overall, this means that our major roads and motorways will be among the best maintained in the world, and fit to last for future generations.



40  
No Right Turn  
When Red Light is on

RAMP

NEW HOLLAND  
E135

HINO  
HINO

## 6. Ring-fenced investment funds

In setting out such a significant programme of investment, it is important not to lose sight of the wider impacts the network can have. This means striving to ensure that the interventions we make to the network are sustainable and beneficial to society as a whole. And we want the Company to be at the cutting edge of innovation in road construction and network management.

With this in mind, we have created a series of ring-fenced funds, worth £900 million up to 2020/21 to address a range of specific issues over and above the traditional focus of road investment. These five funds allow for actions beyond business as usual and will help the Company invest in retrofitting measures to improve the existing road network as well as maximising the opportunities offered by new road schemes to deliver additional improvements at the same time. The funds are:

- **Environment**
- **Cycling, Safety and Integration**
- **Innovation**
- **Air Quality**
- **Growth and Housing**

## Environment Fund

It is vital that we strike a balance between increasing road capacity and mitigating the impacts of our roads on neighbouring communities and the environment.

As outlined in section 1, thanks to widespread improvements in design, we no longer face a stark choice between a well-functioning road network and a well-protected environment. We want to continue this progress, but also to tackle parts of the road network where previous road design has led to particular environmental problems. In addition, we need to ensure that the Company plays its part in reducing carbon emissions from road transport and adapting our roads to cope with a changing climate.

In order to do this we are setting up a £300 million Environment Fund to deliver specific enhancements to the network. This will enable the Company to deliver the improved environmental outcomes described in the Performance Specification, Statutory Directions and Guidance. In particular, the fund will be used to mitigate the worst impacts of noise on those living close to the network, support the transition to low-carbon road transport, improve local water quality and resilience to flooding, maintain an attractive landscape, and work to halt the loss of biodiversity.

The Company will also continue to draw on the expertise of different environmental organisations, deepening and widening these partnerships, and work with local authorities to help drive the best outcomes. Specialist input will be crucial to achieving our environmental aspirations for the network through sensible interventions and funding focused where it can have the greatest impact.

The Environment Fund will enable us to make a real difference. For example, by spending up to £75 million on the likes of noise barriers, combined with the extensive resurfacing programme, we expect to reduce the amount of people severely affected by noise from the SRN by at least 250,000. We will also support the shift to a lower carbon network by investing in rapid chargers to ensure that people will rarely be more than 20 miles from a rapid charger on the SRN, as well as converting the Traffic Officer Service fleet to ultra-low emission vehicles. We will spend around £100 million to enhance the network's landscape, address areas where there are negative impacts on sites of historic or cultural heritage and improve the impacts in local biodiversity.

| <b>Environment Fund: areas targeted and potential interventions</b> |   |
|---|---|
| <b>Noise</b>  | Low noise surfacing on road links that would not be resurfaced due to age or condition, where benefit to the local community can be demonstrated.   |
|   | Feasibility assessment of Two Layer porous asphalt on one or more sections of urban motorway.   |
|   | Provision of noise mitigation to those properties exposed to the highest noise levels.  |
| <b>Carbon</b>   | Support for ULEVs on the road network (vehicle chargers). 95% of the Strategic Road Network will have a charging point every 20 miles. Where ever possible, these will typically be rapid charging points that can charge a battery electric vehicle in less than 30 minutes. |
|   | Convert highways patrol fleet vehicle to ULEVs.   |
|   | LED lighting for Motorways and LED traffic signals.   |
|   | Reducing carbon emissions from maintenance depots.  |
|   | Renewable energy generation on the Strategic Highways Company's estate.   |
| <b>Flood Risk Management &amp; Water</b>                            | Reducing flood risk to communities adjacent to the network and improving network resilience to flooding.  |
|   | Delivering water quality improvements (drainage and runoff) through use of Sustainable Drainage Systems.  |
| <b>Landscape</b>  | Mitigation of existing landscape problems on the network, especially in protected areas.  |
|   | Enhancing landscape quality through new schemes.  |
| <b>Cultural Heritage</b>  | Enhance the setting and condition of cultural heritage and historic features in the Company's ownership.  |
|   | Enhance the setting and condition of cultural heritage and historic features in proximity to the Strategic Road Network.  |
| <b>Biodiversity</b>   | Increasing the number of SSSIs in good or recovering condition.   |
|   | Interventions to support Nature Improvement Areas.  |

## Cycling, Safety and Integration Fund

The SRN is an asset of enormous proportions. Inevitably this means that it runs close to, or in some cases through, local communities. On the one hand this means the SRN is well placed to provide the connectivity needed by individuals and business, including through its connections to other modes of transport. On the other it means the network has the propensity to sever pedestrian and cyclist access routes, and even whole communities. Another even more important consequence of the network's scale, particularly with the number of vehicles carried at high speeds, is the impact on safety. We have therefore ring-fenced £250 million in a Cycling, Safety and Integration Fund to help deliver improvements in these areas through both bespoke interventions, as well as enhancements to new and existing schemes.

### Cycling

The SRN does not just impact on motorists but on other road users, especially cyclists. We want the road network to offer better provision for the needs of cyclists. This means, amongst other things, more segregated cycleways alongside trunk roads and safer junctions and crossings.

To promote a more cyclist-friendly network, we are committing around £100 million of this fund to deliver improvements for cyclists at 200 locations on the network.

### Safety

The devastating impact of serious and fatal accidents mean that network safety remains the number one consideration of road users and a priority for those tasked with developing and managing the SRN. There is also a considerable economic cost associated with collisions, estimated at £15 billion annually to the UK economy. The long term strategic vision for the network set out in this first RIS includes an aspiration to eliminate accidents on the SRN that result in death or serious injury. To further this aspiration, around £105 million will be spent on additional measures to boost safety that extend beyond the high safety standards already in place.

### Integration

The SRN is just one part of a multi-modal transport network that works best when its component parts are well connected and working in harmony. Such circumstances

#### Cycling, Safety and Integration Fund: areas targeted and potential interventions

|                    |  |
|--------------------|--|
| <b>Cycling</b>     | 600 potential areas identified for specific cycling improvements. Work ongoing to carry out feasibility assessments and develop schemes. 200 schemes expected. |
| <b>Road Safety</b> | Fence to fence maintenance (enhancing safety measures at the same time as planned maintenance to reduce overall costs)   |
|                    | Road safety improvements (junctions, speed restrictions, anti-skid measures).  |
|                    | Road safety innovation – HGV incident protection, new car technology etc.  |
| <b>Integration</b> | Accessibility – Pedestrian crossings, bridges, disabled access etc.  |
|                    | Modal Integration – to fund better links with local networks, e.g. Park and Rides, Station access.   |

offer users real choice and improved door-to-door journeys. The SRN plays a key role in integrating this overall network helping connect local transport networks, our international gateways, rail-freight interchanges and, in the coming years, HS2 stations. A further, no less important, aspect of integration is focused on accessibility and inclusion, including issues such as community severance, access for pedestrians and other non-motorised road users. Our network must be easier to get over, under or around to ensure that roads serve communities instead of severing them. Around £45 million of this fund is therefore dedicated to improving all elements of integration.

## Innovation Fund

The RIS *Strategic Vision* sets out the potential that technology holds to transform transport by exploiting novel and innovative technologies and techniques in road construction and management. This has the potential to revolutionise what it means to travel on our roads.

Improved gathering and dissemination of data, together with better information provision, will lead to better informed drivers and improved journeys, while in the longer term, increasing automation can enhance road safety and efficiency and reduce congestion.

With Smart Motorways we have already begun to see the positive effects that innovative approaches can have. But that is just the tip of the iceberg as we move towards a technology-led SRN. To help us get there, we have created a £150 million Innovation Fund to allow the Company to place a greater emphasis on the future technologies that will positively impact users

and the network. This will involve the full range of research, development, demonstration and deployment activities, whilst also supporting British innovation and capitalising on progress made internationally. The Government is determined that we are at the vanguard of road-sector innovation.

As stated in the Performance Specification, the Company will set out its approach to innovation, technology and research by the end of the first year of the Road Period, and this will include detailed plans for how the Innovation Fund will be spent.

Indeed, through the Innovation Fund we anticipate investing almost £40 million to further support the development of driverless and co-operative vehicles technologies, around £15 million to improve the information and data that helps drivers plan their journeys and over £20 million to work with academics and small to medium enterprises on research and development.

| <b>Innovation Fund: areas targeted and potential interventions</b> |   |
|--|---|
| <b>Safety Technology</b>   | Investigate collision avoidance and casualty reduction through research into e-systems.   |
|  | Trials and deployment of new tunnel safety systems (e.g. Hindhead acoustic incident detection).   |
| <b>Improving Infrastructure</b>                                    | Research the use of data to improve asset management.   |
|  | Centralised lighting management system.   |
|  | Investigate ways to use technology, new surface materials and modular construction techniques effectively to improve performance.   |
|  | Roll-out alternative vehicle detection technologies, such as side-fire radar or Low Cost Congestion Detection technologies, to reduce on-road intervention.                   |
| <b>Data and Information</b>  | Investigate the use of improved location technologies such as Galileo and 4G/5G in information provision.   |
|  | Provision of better information to customers. Roll-out an above-ground communication system to provide a platform for in-vehicle system developers. Target M2, M20, M25, M26. |
|  | Expand the market potential for journey and customer specific information services.   |
|  | Provision of fuel price information on the motorway network.  |
| <b>New (Emerging) Technologies</b>                                 | Incentivise the advancement of in-vehicle, vehicle-to-vehicle, and vehicle-to-infrastructure technologies, through the provision of roadside wifi. Target M2, M20, M26, M25.  |
|  | Trial Co-operative Vehicle Highway Systems (CVHS) on the strategic road network including investigating HGV Platooning systems.   |
|  | Trial driverless vehicles on the strategic road network.  |
|  | Development and roll out of technologies to support Expressways.  |
| <b>Support to Sustainable Operation</b>                            | Development of Smart Motorways operational algorithm to optimise air quality and journey times.   |
|  | Trial of electric vehicle charging loops embedded in the road surface including vehicle to vehicle.   |
|  | Technology enabled demand management.   |
| <b>Innovation and Technical Development</b>                        | Promote the use of innovation to support the transformation programme in the Strategic Highways Company.  |
|  | Collaborate with Transport Catapult, Universities and SME organisations to take advantage of innovations or support development on the strategic road network.                |

## Air Quality Fund

Overall, air quality has improved significantly in recent decades. But we recognise there is more to be done. Vehicles that drive on our network are a major source of air pollution at the roadside. It is essential that we work with others, as many people and organisations, from the public to local councils to central Government, have an important role to play.

Government is playing its part, investing heavily in measures to reduce emissions. We have committed billions to increase the uptake of ultra-low emission vehicles, sustainable travel and green transport initiatives, all of which will help improve air quality. These measures will address both particulate matter and NO<sub>x</sub> (oxides of nitrogen).

But we want to go further. In this Road Period, we are committing £100 million of funding in addition to the separate Environment Fund, specifically to target improvements in air quality. Interaction with local authorities will help shape how this fund is used and inform how the Company addresses this difficult but vitally important issue.

It is expected that this fund could tackle a number of locations and the Government is already in the early stages of pioneering this approach in Manchester, working with the local transport authority.

## Growth and Housing Fund

Given the number of people and the amount of freight the SRN carries, not to mention its nationwide coverage, the SRN is vital to England's prosperity. In combination with local roads and other modes of transport, the SRN is an enabler of job creation and new homes thanks to its role in linking people and places.

We want to ensure that the Company is sufficiently equipped to play its part in realising growth in different parts of the country and has flexibility to engage positively with development plans and proposals that may still be at a formative stage. To enable this, we are establishing a £100 million Growth and Housing Fund.

This fund will provide enough leverage and flexibility for the Company to engage positively in progressing schemes on the SRN required to unlock strategic growth. It is to supplement – not substitute – developer contributions and other existing sources of funding. The fund will normally only be applicable to investment on the SRN that:

- Unlocks major housing development (for example, in the order of 5,000 new homes or more) or key economic growth; and
- Involves multiple developers; and
- Is funded – at least in part – by developer contributions.

We are already aware of some proposed SRN schemes where the Company may decide to draw on the Fund to supplement development contributions and other sources of funding. For example, we will consider adding capacity around junction 15 of the M4, in support of housing and employment development in Swindon, with appropriate support from local developers.

As with the other ring-fenced funds, it is vital that the Company works closely with local planning and highway authorities, the Homes and Communities Agency and Local Enterprise Partnerships in order to prioritise where SRN schemes are required to unlock growth. In this case the Company will also work with private developers, in negotiating the details of investment required.



## 7. Statement of Funds Available

This Statement of Funds Available outlines the level of funding for the Company to deliver the objectives set out in the Investment Plan and the Performance Specification.

Funding is outlined up to 2020/21, in line with the Spending Round 2013 (SR13) settlement, but the length of the first Road Period will be 5 years, ending in 2019/20. As a result, funding for 2020/21 is in fact the first year of the second Road Period. This funding is committed in the same way as that for the first Road Period, and a large part of its capital spend will be used to deliver the work set out in the Investment Plan; however a new Road Investment Strategy will cover the period from 2020/21 onwards. This additional certainty should assist planning at the company and among suppliers, by preventing the 'saw-tooth' funding profile seen in some regulated sectors.

In common with other areas of Government spending, resource budgets were set for 2015/16 in the 2013 Spending Round. The Government has therefore agreed a total 2015/16 resource budget of £1,027 million for the Company, including £285 million for maintenance. However, as an exception the Government also agreed future budgets for resource maintenance spending up to 2020/21, reflecting the importance of the Company taking sound maintenance decisions in line with good asset management principles. Resource funding for other areas in 2015/16 will be £742 million. Remaining areas of resource funding for future years will be agreed at the next spending review in the usual way.

| Statement of funds available, £m |                                       |         |         |         |         |                           |   |  |
|----------------------------------|---------------------------------------|---------|---------|---------|---------|---------------------------|---|--|
| Sub Category                     | Spending Round 2013 Settlement Period |         |         |         |         |                           | RIS 1 Total<br>(2015/16<br>to<br>2019/20) | SR13 Total<br>(2015/16<br>to<br>2020/21) |
|                                  | RIS 1 Period                          |         |         |         |         | RIS 2<br>Period<br>(Part) |   |  |
|                                  | 2015/16                               | 2016/17 | 2017/18 | 2018/19 | 2019/20 |                           |   |  |
| <b>Capital enhancements</b>      | 1,064                                 | 1,101   | 1,509   | 1,789   | 2,230   | 3,114                     | 7,693                                     | 10,807                                   |
| <b>Capital renewals</b>          | 718                                   | 726     | 732     | 738     | 744     | 750                       | 3,658                                     | 4,408                                    |
| <b>Resource maintenance</b>      | 285                                   | 290     | 295     | 300     | 306     | 311                       | 1,476                                     | 1,787                                    |

Note: As part of the SR13 settlement, it was agreed that the Company will have 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 capital totals may be subject to change if this arrangement is utilised. Updated capital totals will be published annually in the Company's Delivery Plan (see below).

## Ring-fenced Investment Funds

As described above in section 6, ring-fenced funding will be made available within the capital allocation for specific areas, namely: Environment, Cycling, Safety and Integration, Innovation, Air Quality, Growth and Housing. This will be subject to maximising the value for money of interventions.

| Fund, £m                                   | RIS 1 Total<br>(2015/16 to<br>2019/20) | SR13 Total<br>(2015/16 to<br>2020/21) |
|--|--|---------------------------------------|
| <b>Environment</b>                         | 225                                    | 300                                   |
| <b>Cycling, Safety<br/>and Integration</b> | 175                                    | 250                                   |
| <b>Innovation</b>                          | 120                                    | 150                                   |
| <b>Air quality</b>                         | 75                                     | 100                                   |
| <b>Growth and<br/>Housing</b>              | 80                                     | 100                                   |

## Other sources of funding

In addition to the funding in the RIS outlined above, the Company will be expected to secure contributions from third parties for certain schemes. These other sources of funding include developers and other sources of public sector funding such as the Local Growth Fund, EU funding and funding from Local Authorities.

The Department expects the Company to obtain third party contributions where possible. The exact amount will be subject to negotiation between the Company and the other parties.

## Efficiency Savings

Transforming the Highways Agency into a Government owned company with a long term capital funding settlement will enable it to plan for the long term, delivering significant cost savings. These efficiencies are over and above those that the Highways Agency is currently delivering as part of the SR10 settlement.

The major schemes and other spending proposals described above in the Investment Plan include capital efficiencies to be made over the first roads period, 2015/16-2019/20. These are based on efficiency assumptions of 2-3% year on year for enhancements and 2-4% year on year for renewals. Overall, the Company will commit to delivering total capital efficiency savings of £1.212bn over the first roads period.<sup>1</sup>

Efficiency savings are included in the estimated costs of the projects in the Investment Plan. Any further efficiency savings will be recycled into additional projects.

<sup>1</sup> Efficiency savings in nominal terms, based on the efficiency assumptions used to develop the Investment Plan. These proposed efficiencies, and the underlying cost modelling and assumptions have been reviewed by external consultants Arup/Oxera. In the event that the Investment Plan undergoes significant revision – for example, movement between funding lines or years – the efficiency assumptions that underpin this target may need to be revisited which might necessitate a change to the headline number.

## Monitoring arrangements

The Strategic Road Network Monitor will scrutinise the Company's delivery of the RIS. The Company will develop and publish a Delivery Plan (to be updated on an annual basis) that will set out detailed cost baselines and delivery timescales for schemes which start construction in that year and estimated costs and delivery dates for schemes which will start in subsequent years. It will also set out the plans for delivering the Ring-fenced Investment Funds, ensuring that these represent value for money.

This will allow the Monitor to examine the Company's performance against the assumptions of cost and timeframes set out in the Delivery Plan. The Monitor will also scrutinise the delivery of the efficiency targets set out by the Company, as well as the other elements of the performance specification. Further information is set out in *Transparency for Roads* [DfT, October 2014].

## Protocols

Protocols are a way of managing additional functions or actives which are not core to the Company's role as a strategic highways company. Many of these functions and actives are currently carried out by the Highways Agency on behalf of the Secretary of State, and it is the Government's intention that this should continue. The Company is therefore instructed to undertake the following protocols, managed within its overall funding envelope (subject to confirmation of resource funding at the next spending review). Current protocols include:

### Salt stocks

The Company will continue to maintain a strategic salt stock as an emergency reserve

for local highway authorities for winter maintenance. The Company will also manage the allocation and distribution of salt to local authorities.

### Management of non-core estates

The Company will continue to have responsibility for inspecting, maintaining and managing certain estates on behalf of the Secretary of State, which are not core to the SRN. The most significant of these is the Historical Railways Estate, which includes approximately 3,500 legacy bridges, abutments, tunnels, cuttings, viaducts and similar properties associated with closed railway lines. The Company will be responsible for inspecting and maintaining these disused former railway structures on a risk and priority basis, making sure they are safe.

### Abnormal loads

The Company 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.

### Support of tolling concessions

The Company will be responsible for fulfilling the Government's side of the M6 toll and Severn Crossings concession arrangements.

This will include:

- Approving certain matters relating to the road e.g. traffic signing
- Incident liaison

## Standards and Guidance

The Company 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.

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