A better railway for a better Britain

This is a big moment for Britain's railway. Investment from successive governments has enabled us to turn a once great but decaying part of our nation's heritage into a growth industry with huge potential for the future. In this document we explain more about the challenges that we face and how we are planning to make the most of the opportunities that lie ahead.

Contents

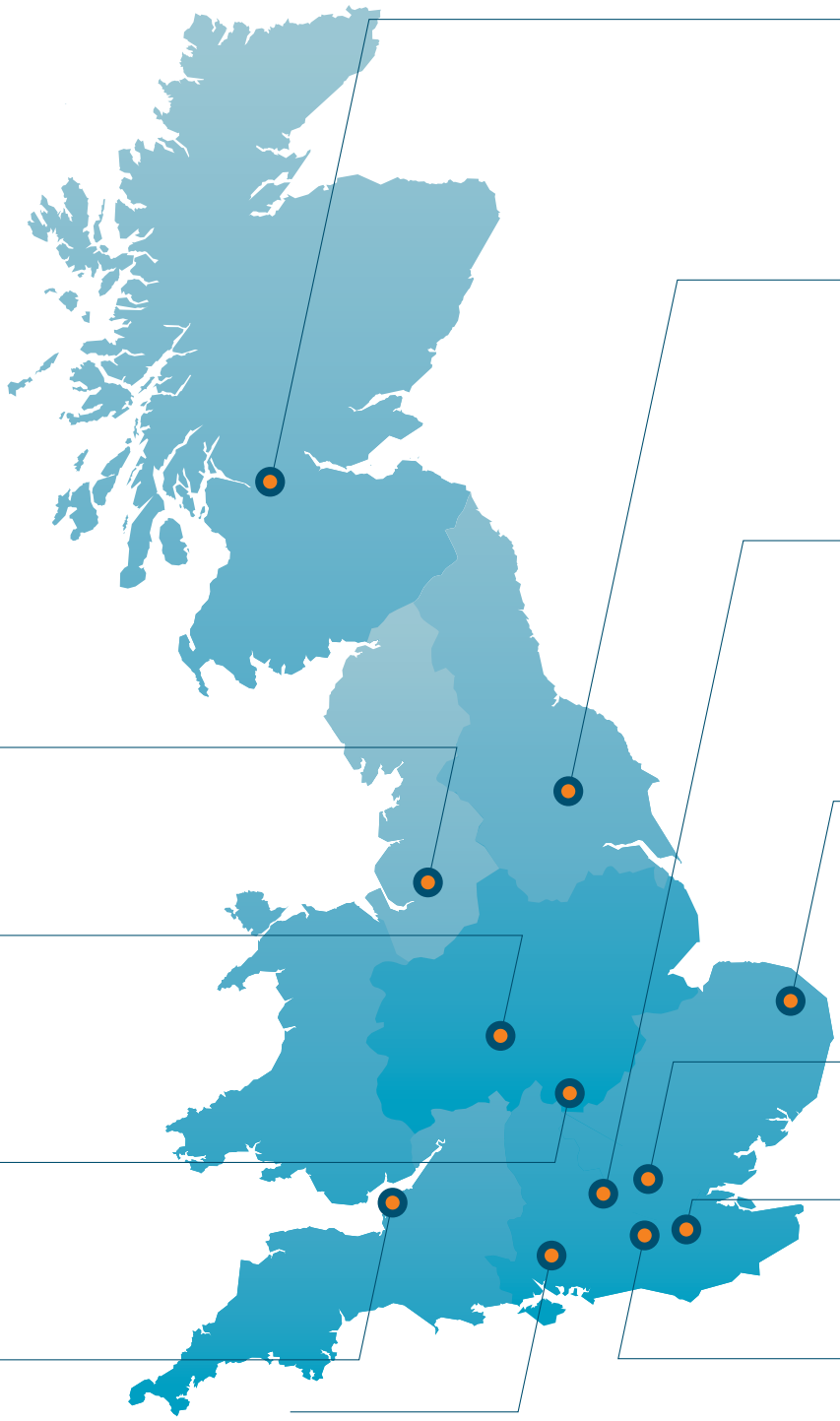
The rail industry benefits from the stability of five-year funding settlements. As part of discussions for 2014-2019, Network Rail has published Strategic Business Plans. These go into detail about how we would like to grow and develop the railway and our business in that period as well as defining our longer term vision.

W www.networkrail.co.uk/SBP

Who are we working with?

Since April 2009 Network Rail has worked with 6,223 suppliers, more than 40 per cent of which are small and medium sized enterprises. We would like to thank all of them, and all of our customers, for their help and support in delivering a better railway for a better Britain.

We recently held an awards ceremony to recognise some of the best work from partners based all around Britain.



Glasgow
Babcock Rail
Reducing the cost of track renewals Boston – Skegness

First ScotRail
Reducing energy use at stations across Scotland

York
Omnicomm Systems
Developing new technology to replace visual inspections of track (see p25)

Maidenhead
Costain
Laing O'Rourke (Dartford)
Turning Farringdon station into a new transport hub, integrating Crossrail, Thameslink and London Underground in a new station

Norwich
May Gurney
Simplifying maintenance through innovative bridge design

Warrington
Skanska Construction UK
Building a new viaduct over the historic Borough Market as part of the Thameslink Programme

Solihull
ARUP
John McAslan + Partners (London)
VINCI Construction (Watford)
Dramatically rebuilding King's Cross station

London
Benchmark Training
Working with front line employees to build new skills

Stowe
Buckingham Group Contracting
Delivering a new cutting-edge maintenance facility near Reading

Sevenoaks
Futronics Rail
Developing new train tracking technology to improve safety on a crossing in Suffolk

Weston-super-Mare
Sole Events
Giving young people alternatives to playing on railway lines

Redhill
Balfour Beatty Civil Engineering
Creating the first station to span the Thames at London Blackfriars

Aldershot
CSC Computer Sciences
Upgrading critical business software to time and budget

A better railway for a better Britain

Today's economic environment has placed the railway once again at the heart of the debate about the future of our country.

David Higgins
Chief Executive, Network Rail

Fig 1 – Passenger growth
Today we carry almost 50% more passengers than ten years ago

2002/03

2011/12

As the entrepreneurs who originally built the railway knew, railways don't just move people and freight, they also generate and spread prosperity – they can create jobs, open up new markets and, ultimately, support the growth of a new balanced economy.

The railway has just seen a decade of unprecedented growth (fig. 1), the kind that would be the envy of many other industries. Passenger numbers continue to grow every year and by 2020 another 400 million rail journeys will be made. In recent years rail freight has increased significantly and removes the equivalent of 6.7 million lorry journeys from our roads.

But as we take the opportunity to set out our agenda for the future, it is worth remembering that the success of our industry is built on safety. We have addressed many of the very real issues that led to the rail crashes of the past, making our railway one of the safest in Europe. But we cannot be complacent. We will continue to challenge ourselves to get everyone home safe every day.

We are very good at managing what in most part remains a Victorian railway, delivering some of the most complex infrastructure projects anywhere in the world. And we are doing this while continuing to reduce public subsidy year on year – that is not a statement you hear very often about the railway (see p32). But this success brings its own challenges as well as opportunities to do even more.

Challenges and opportunities

As we have made the railway safer and more reliable, private operators have invested in better services and more people have chosen to take the train. The good news is that this eases pressure on other modes of transport. The challenge is that critical parts of our network now run at close to 100 per cent capacity. Our biggest stations are busier than Heathrow (see p6) and the impact of something as simple as a blown fuse bears comparison with a breakdown on the M6 – you can fix the problem relatively quickly but there are tailbacks for the rest of the morning. And that, in part, explains why the public perception of the railway remains mixed at best.

Our industry does not lack ambition when it says that you cannot have everything. It is merely pointing to the hard facts. As more people use our trains they get more crowded, which means we need more train carriages. Longer trains need longer platforms, and when these carriages are full we squeeze more trains onto an already crowded network. More trains make it harder to recover delays and cause more wear and tear to our tracks. This requires us to close lines to carry out maintenance – meaning disruption for passengers, reduced reliability, and, again, a poor view of the railway.

Network Rail has been trying to get this trade off right for a decade. And as an industry we have become excellent at squeezing every last improvement out of what we have got. But as demand grows, this becomes harder, and in some places impossible. That is why we are investing to deliver a quantum leap in the application of technology – potentially the biggest in 100 years. Intelligent infrastructure is a game changer leading to smarter working, lower costs, improved safety and better reliability. But this requires long-term investment.

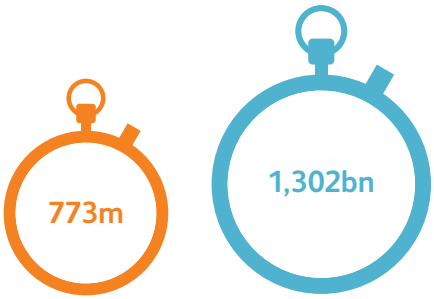
"We should never be afraid to make the case to invest today to reduce public subsidy in the years ahead."

400

Million more passenger journeys by 2020

Fig 2 – Cost per train km
Investment has enabled us to cut the cost of running the railway

Fig 3 – Passengers arriving on time
500 million more people get to their destination on time than when Network Rail was created



Investing in our future

We are continuing the biggest capacity improvement programme since the Victorian era.

- 170,000 extra commuter seats at peak times by 2019 – enough to fill Wembley twice over
- Rebuilding the line linking Wales and the west of England to London
- New lines to increase capacity in Scotland
- 700 more trains a day linking key northern cities
- Modern signalling allowing us to run more trains closer together, safely and reliably
- Electrifying far more of our railway

The scale of these improvements must not be underestimated but equally we should not fool ourselves. Carrying out this work will mean disruption and, in the longer term, as the railway gets better, demand will continue to grow outstripping even this extra capacity. Some lines, such as those to Brighton and on the West Coast Main Line, will soon be full. Therefore, the case for new lines is about capacity – faster speeds are a nice by-product. The question is not "why build High Speed 2?" but "how quickly can we build it?"

However, as necessary as High Speed 2 is, it is not a substitute for using our existing railway better. Every day we are building a deeper understanding of our infrastructure. This enables us to refine our plans, making better use of resources and developing our insight into the railway that we have inherited. Taking the cheap option, making false economies, deferring critical work or taking a maintenance holiday inevitably leads to an infrastructure deficit, higher long-term costs and a critical impact on safety. We must not repeat the mistakes of the past.

As our knowledge evolves we must be flexible enough as an industry to respond to the challenges that we face. For example, we have 30,000 bridges, embankments and tunnels; many of which are bespoke in design and more than 100 years old. Those who built these great structures could not have predicted that they would still be here a century later, carrying a greater load of passenger and freight trains than planned for. The age of our structures and earthworks coupled with decades of underinvestment is a safety risk.

Furthermore, their age makes them more vulnerable to extreme weather – the likes of which we are seeing more frequently these days. Therefore, we must invest enough to make our railway sustainable and fit for the long term. Failure to do so would reverse the benefits of the past decade, making the railway less safe and increasing costs for the future.

So we should never be afraid to make the case to invest today to reduce public subsidy in the years ahead. This approach is fundamental to driving down day to day costs (fig. 2). In an industry funded mainly by taxpayers and fares, Network Rail's purpose is to deliver outstanding value for customers and taxpayers. Put simply, that is why we are here.

A good partner

And we are achieving this through the most collaborative and transformational programme the railway has ever seen. In the past, Network Rail has not been viewed as an easy partner to work with. We are changing that. Accepting that there is no "one size fits all" solution reflects how far we have come. Every part of the country has its own unique challenges and different customers have different needs. Our past centralised "command and control" structure worked to tackle the chaos we inherited, but it is no longer effective or appropriate.

The future for our organisation is in empowering our people – devolving to those who understand what our customers want and our suppliers can offer. This means being honest with each other about the challenges and opportunities that we see, honest with the public, honest with the regulator and honest with our partners. This is the only way we will meet the challenges ahead.

Today 500 million more people arrive on time compared to 2002 (see fig. 3). By making the right decisions today we can build on this, creating a safer, reliable railway that can carry even more passengers. This will help drive a thriving, sustainable, low carbon economy with better connections between people and jobs – a better railway for a better Britain.

The state of the railway

To make the right decisions today we need to understand our history and the challenges that we face as a result. Only with this clarity can we define our plans for the future.

Where have we come from?

We were fortunate that our Victorian ancestors pioneered the railway, but we have lived off of their legacy for too long. While other countries improved and extended their railways, Britain took an investment and maintenance holiday from the late 1970s to mid-1990s. As more safety issues emerged, the response was to make do and mend; however, this did not fix the problems properly.

Over the past decade we have been tackling this under-investment, providing tangible proof that investing up front can reduce long-term costs.

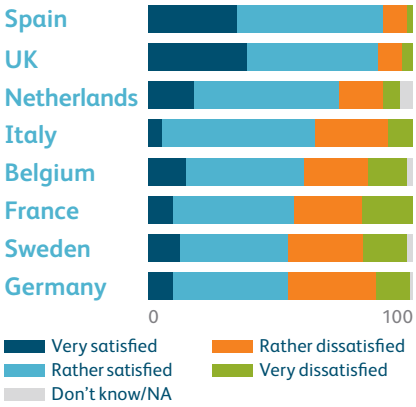
Where are we today?

It has been 10 years since Network Rail took over ownership and operation of the railway from Railtrack. The difference today could not be clearer.

- We are one of the safest railways in Europe, behind Luxembourg only
- Costs have reduced significantly, with maintenance alone coming down from £1.9bn to £1bn per year in real terms
- Investment in replacements and new infrastructure stands at almost £5bn per year
- The first deep alliance partnership with a train operator was launched in April 2012, just one of many partnerships that are changing the face of our railway
- Investing in GPS, thermal imaging and 3D camera technology is allowing our people to safely identify track issues and fix them more quickly (see p25).

We have a responsibility to future generations to continue this progress.

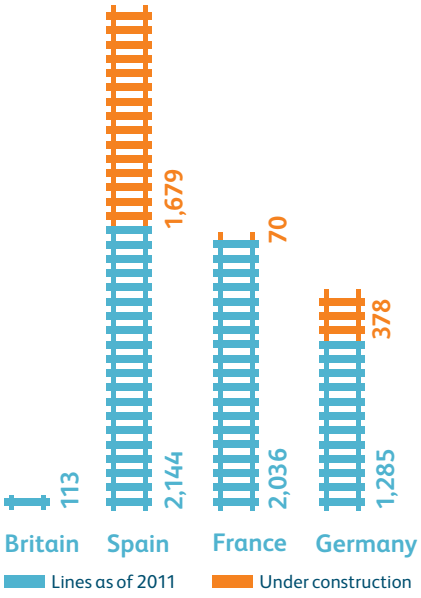
Satisfaction with punctuality and reliability (%)



Source: European Commission survey, June 2011

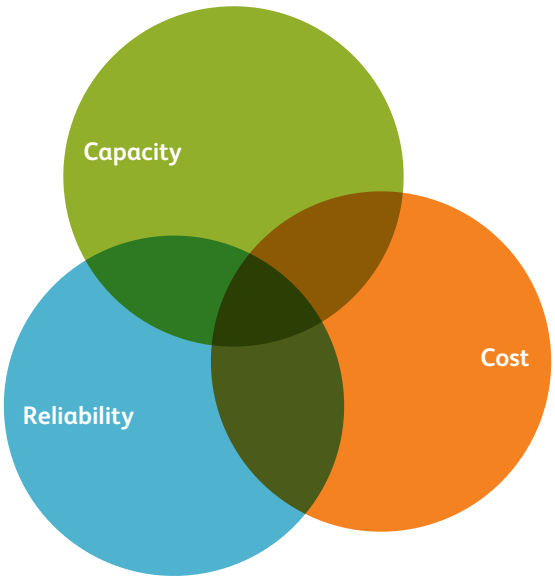
High speed lines (km)

New lines increase rail capacity and drive economic growth but Britain is falling well behind



Source: European Commission, UIC, Nov 2011
(high speed = 250 km/h+)

Competing priorities



Tough choices

In recent years the railway has soaked up the demand for rail without building any major new lines. This means our stations and tracks are getting ever busier. At the same time we have also improved performance and reduced costs.

As demand continues to grow on key parts of the network, in some places it is no longer possible to simultaneously cut costs, increase capacity and deliver more trains on time. Often one comes at the price of another.

As more people use the railway, more trains or longer trains are needed. This causes greater wear and tear on the track, which requires additional maintenance or new railway. These have a cost, both financial and in terms of passenger disruption. In addition, running more trains on the same network means it is harder to make up for any disruption, however small, so fewer trains arrive on time.

Therefore, the issue becomes more about how we make the right choices together with train operators to maximise value for taxpayers, passengers and freight companies.

By 2019, we will carry 30% more freight than today

170,000

Extra seats at peak times every day for commuters

Where are we going in the future?

By 2019, we will carry 30 per cent more freight than today and there will be an extra 170,000 seats at peak times every day for commuters. CO_2 emissions per passenger will be cut by 25 per cent, the equivalent of one million lorries off our congested roads.

This document outlines our plans for the future. How we will change our company, manage our assets, innovate, create more reliable timetables and work with our partners to deliver a better railway while reducing public subsidy. There will be some tough choices along the way, but these will be informed by greater transparency, honesty and closer collaboration with our partners, customers and suppliers.

Investing properly in the Forth Bridge means we do not need to go back and paint it for at least 20 years.

The railway and the economy

Railways don't just move people and freight they also generate and spread prosperity. Investing in this kind of infrastructure is important for the future of our country and provides tangible benefits for both rail users and Britain's economy.

Growing demand

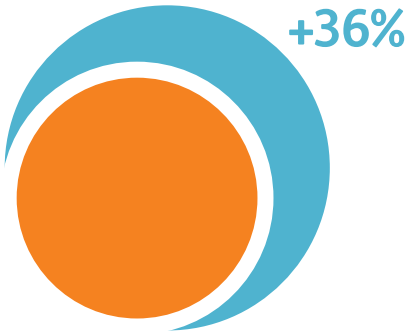
Improvements over recent years mean that more and more people are choosing to travel by rail in Britain, and for many, particularly in our biggest towns and cities, the railway is the best way to get to work.

Demand for rail has grown so much in recent years that today our busiest stations handle more people every day than our biggest airports (see below).

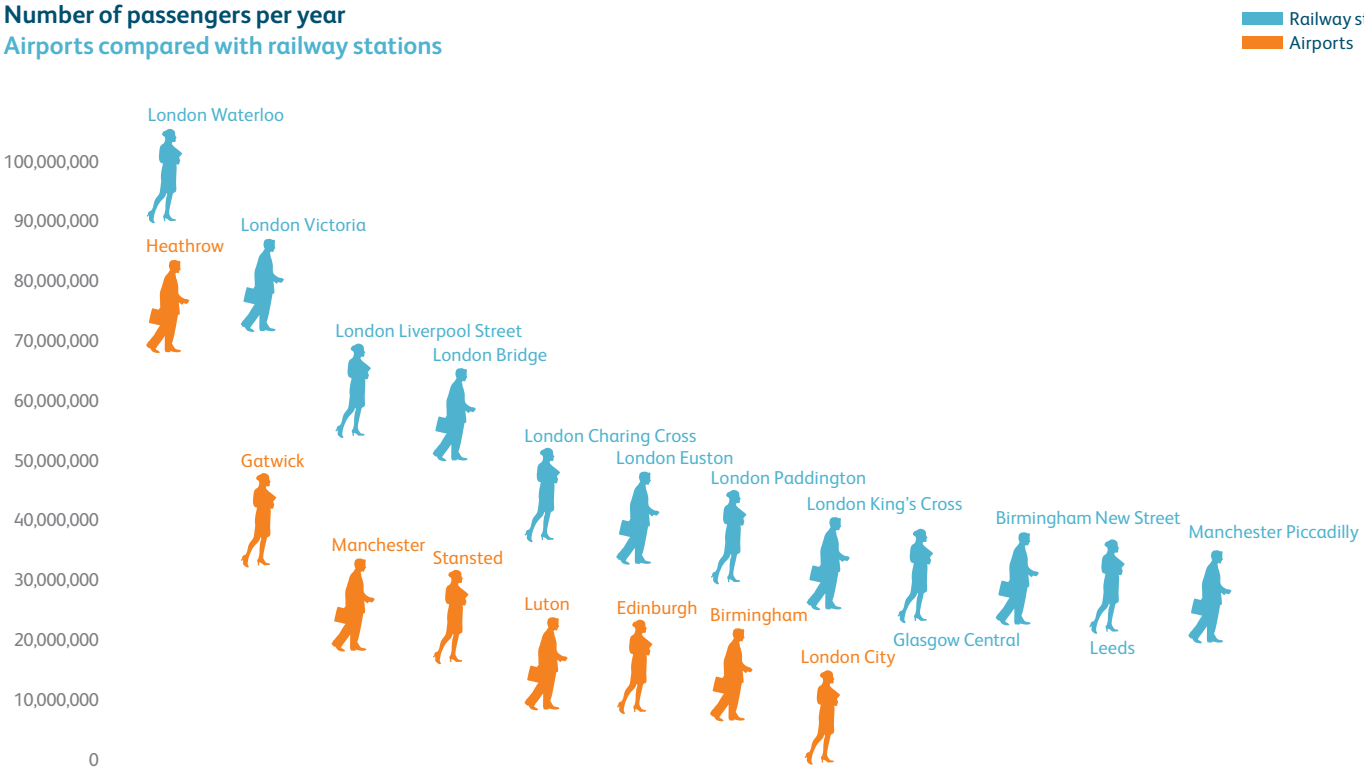
That is why we are continuing to invest to keep our railway safe, whilst at the same time balancing the trade off between reducing costs, enabling more people to arrive at their destination on time and creating more capacity where it is needed.

We know that every pound we spend is valuable. Much of it is money that comes from the pockets of passengers and taxpayers. That's why we're keen to explain what we spend it on and why it is money well spent.

Projected rail passenger growth in London by 2031



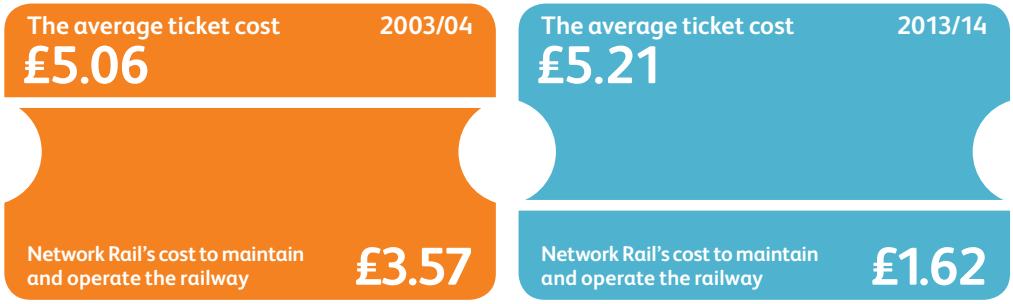
Number of passengers per year
Airports compared with railway stations



Source: CAA statistics, 2011; ORR statistics, 2011

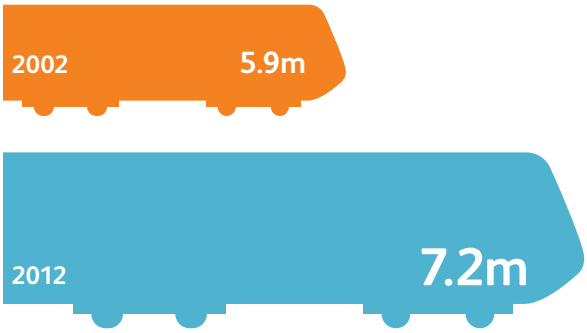
Where does the money go?

The cost of operating and maintaining the railway has gone down. We also pay to replace and improve it. The overall cost is funded by ticket revenues, public subsidy, property income and borrowing



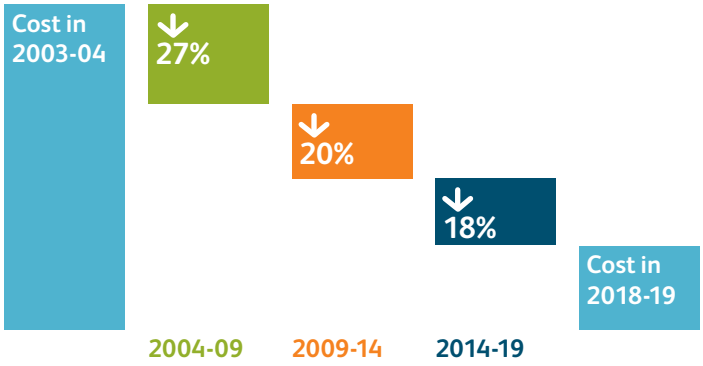
Benefits of investment

Running more trains



Investing upfront to cut day to day costs

Maintaining, operating and renewing the railway



Economic benefits

The Northern Hub project will generate £4 for every £1 invested

W www.networkrail.co.uk/improvements/northern-hub/

Changing communities

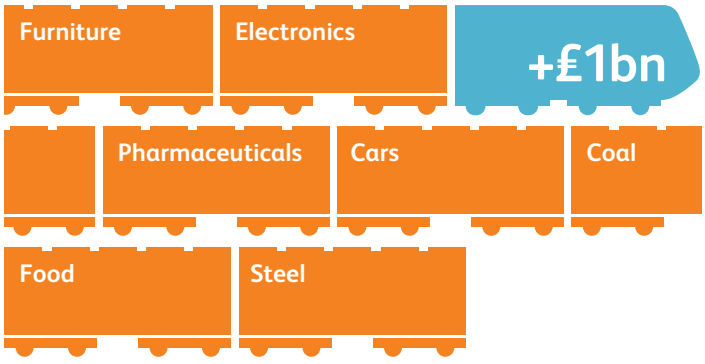
The Ebbw Valley in Wales is just one example where investing in rail links has opened up new job opportunities for local people

Creating jobs for our suppliers

We have generated £17.3bn of work for our supply chain since April 2009

Taking lorries off the road

Good for the environment and £1bn direct to the UK economy



Our future

We have bold plans. Delivering them requires not just sustained investment in our infrastructure but also in our people, addressing the culture of our organisation. The following statements set out where we are going and the importance of our employees in this.

Our Purpose
(Why we exist)

To generate outstanding value for customers and taxpayers

Network Rail does not pay dividends to shareholders. Instead, we reinvest our profits to make the railway better. As a company that relies on public funding and ticket revenues, we must always remain accountable to taxpayers and passengers.

Our Role
(What we do)

A better railway for a better Britain

A "better railway" means a safer, more reliable railway, with greater capacity and efficiency. "Better Britain" means a thriving, sustainable, low-carbon economy with better connections between people and jobs.

Our Vision
(What we want to be)

To be a trusted leader in the rail industry

This is our ambition – the type of organisation we want to be five to 10 years from now. Trust is the key word: we want to be a trusted leader working in close collaboration with our partners. And we know that trust must be earned.

Our Strategy
(How we are going to do it)

To work with our partners and use our full potential to improve safety, reliability, capacity and value for customers and taxpayers

Our priorities are safety, reliability, capacity and value for customers and taxpayers. To deliver this we need to unlock the potential and expertise of our people – creating an environment that promotes diversity, accountability and gives opportunity. By investing in our people we aim to become an employer of choice, attracting the best talent.

Our Behaviours
(How we need to work)

We will only be successful if we are customer driven, accountable, collaborative, and prepared to challenge.

Our report card

We have identified 10 key themes central to our plans for a better railway for a better Britain. Against each of these we have made a commitment, which we want to be held to account on.

1 Everyone home safe every day

By putting safety at the heart of how we design, manage and maintain our railway we will reduce safety risks for passengers, the public and our workforce not just in the next five years but for generations to come.

2 Reliable infrastructure

We will go from being world class in taking care of our track to becoming a world leader in the management of all of our assets.

3 Reliable timetables

We will continue to transform how we timetable and operate the railway, enabling us to deliver a better service for all.

4 The biggest investment since the Victorian era

We will deliver the biggest capacity increase on the railway for 100 years, benefiting people and businesses across Britain.

5 A technology enabled future

Investing in technology will transform our knowledge of the railway making us better at targeting when, where and how we improve it.

6 A customer focused organisation

Structuring our organisation to give clearer accountability to local people who best understand the needs of our customers will help us become a more flexible, collaborative company.

7 Investing in our people

We will create an environment that promotes accountability, opportunity and diversity. This will help us to become an employer of choice.

8 Opening up

We will become an open and accessible organisation which understands, and helps others to understand, the issues shaping the future of the railway.

9 A railway fit for the future

By placing sustainability at the heart of everything we do, we will make our business more efficient, protect the value of our assets, and deliver a railway fit for future generations.

10 Reducing public subsidy

We will continue to reduce public subsidy of the railway.

Everyone home safe every day

By putting safety at the heart of how we design, manage and maintain our railway we will reduce safety risks for passengers, the public and our workforce not just in the next five years but for generations to come.

Our railway is now one of the safest in Europe and people who want to travel by train should expect nothing less. We will never allow there to be a trade off between safety and any part of running the railway.

Our strategy is much broader than just putting in place safety systems. It includes educating the public about the dangers posed by the railway, giving our employees the knowledge to change the way they work and embedding a culture that encourages open and honest reporting, enabling us to find better ways of working in the future.

This will also have much wider benefits: encouraging innovation, creating a business where ideas are valued, where people feel included and where safety is seen as a driver of good performance.

We have introduced 11 Lifesaving Rules to our employees to further eliminate fatal and life-changing injuries. And we will follow this up by streamlining our 1,650 safety standards. This is a really important step – we believe that by using our common sense, trusting each other, and showing expert judgement in the way we assess and manage risks, we will make the railway safer.

And we will do everything that we can to raise public awareness – particularly amongst young people – of the dangers of level crossings. In an ideal world we would have none of these and we are committed to removing them wherever we can. Where we cannot remove them we will work with local communities and other partners to make them safer.

"We are investing £130m to make level crossings safer, including closing 750 by April 2014."

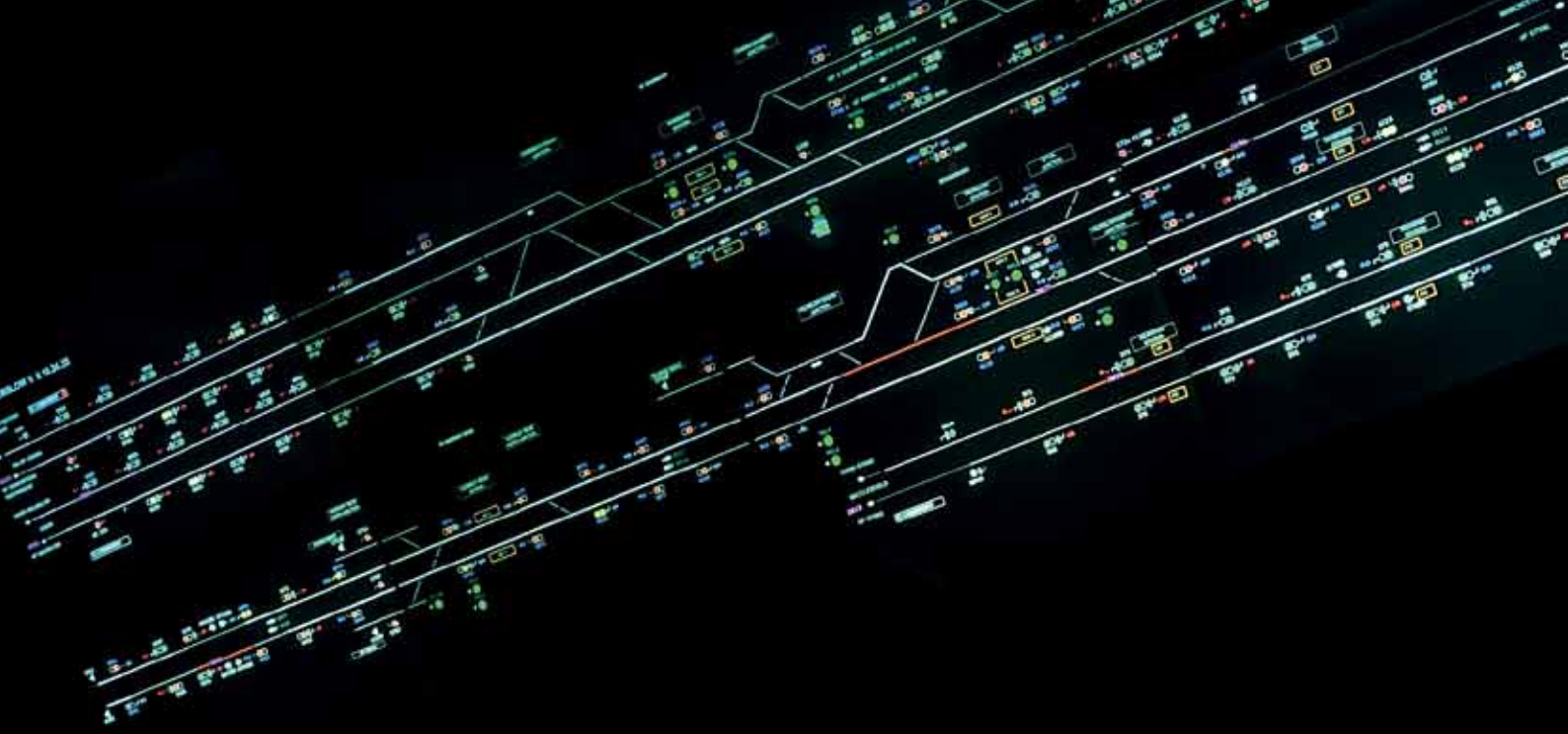
Head of Level Crossings, Network Rail

50%

Reduction in train accident risk

Zero

Our aim is to eliminate fatalities and major injuries on the railway



14

State of the art control centres are replacing thousands of outdated pull lever signal boxes

6

The number of minutes it took us to get to a fuse failure near Waterloo. But this resulted in three hours of delays

Reliable infrastructure

We will go from being world class in taking care of our track to becoming a world leader in the management of all of our assets.

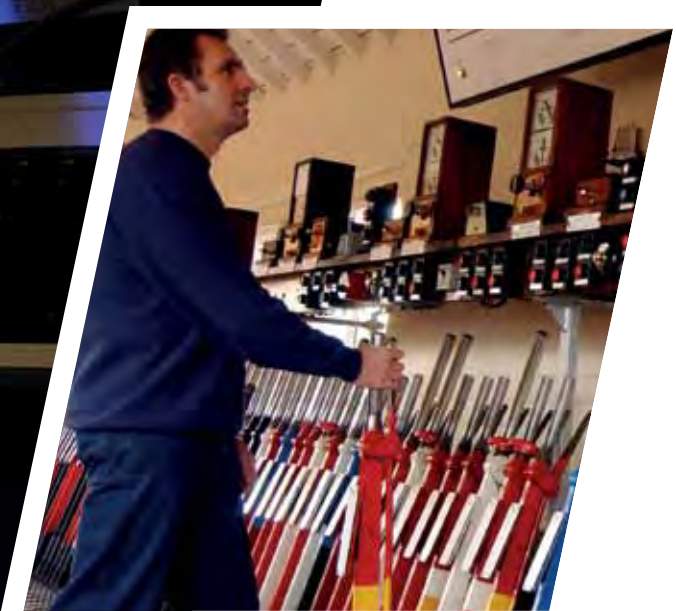
Network Rail is the custodian of the nation's railway, on which operators run their trains. We are responsible for 30,000 bridges, tunnels and embankments, 20,000 miles of track, and thousands of signals. Unlike most railways in Europe, our railway was not rebuilt and simplified after the war. It is an accumulation of railway built upon railway for more than 150 years.

The network we inherited was not only old, but had also suffered from almost 50 years of underinvestment. Over the last decade we have done a lot to put this right. We are currently half way through an unprecedented programme to replace outdated equipment. We are now a world leader in upgrading track and we are bringing all our other assets up to this level.

As part of this we are investing in signalling. Replacing outdated equipment makes maintenance simpler, whilst new systems are enabling trains to run closer together, without compromising safety. This helps us make the most of what we have got, and helps us reduce costs.

There are some areas where progress means new challenges. For example, over the last 12 months, as we have dealt with frequent extreme weather events, we have learnt more about some of the oldest parts of our network – our bridges, embankments and tunnels – and identified additional work that has to be done. Acting now will help us make the railway safer and fit for the long-term. Putting off a decision until tomorrow only makes it more expensive.

We expect further step changes in our knowledge and capabilities in the future. It is our job to continue to innovate, expand our knowledge and take smart decisions to address problems at the right time, reducing long-term costs.



Traditional signal boxes are making way for modern technology.

"If you do things right the first time, it saves you money in the long run."
Project Manager, Forth Bridge

Reliable timetables

We will continue to transform how we timetable and operate the railway, enabling us to deliver a better service for all.

Network Rail manages a complicated network of lines, servicing operators with different needs and expectations. A train path on our busiest routes is like a take off or landing slot at Heathrow – we cannot make any more, so have to make the most of the ones we have.

A line like the Victoria Line on London's Underground is a classic "up-down" railway. You have one operator, one type of train, travelling at the same speed as the next, in one direction, serving the same stations. Many parts of the national rail network are very different to this.

The West Coast Main Line is the busiest mixed traffic railway in Europe. There are 12 different operators. Fast and slow passenger trains mix with each other and heavy freight trains. Different trains stop at different stations, with different frequency, and other lines join it at regular intervals. And like Transport for London we need to find time to deliver maintenance and upgrade work.

The impact of this on our timetables is vast. We plan them carefully, but inevitably things happen every day to knock them. The quality of the timetable is therefore crucial – if you cram trains too closely together there is no flexibility and it becomes harder to recover if there are delays. In Scotland we have worked with our partners to build in better resilience to improve reliability. This is an area where the industry, governments and passengers need to have an honest conversation about what is possible.

The reliability of trains is also affected by the quality of our railway, how regularly we are able to maintain it and events that are outside of our control such as cable theft and the ever more frequent extreme weather. We have to plan as carefully for these as for the timetable itself.

"An assured service is better than a sketchy one."
Commuter, Manchester

12

The number of passenger and freight operators using the southern part of the West Coast Main Line

500

Million more rail passengers arrive on time than 10 years ago

15-20

The number of minutes that could be saved by electrifying the line between Cardiff and London

170,000

Extra seats at peak times for commuters

The biggest investment since the Victorian era

We will deliver the biggest capacity increase on the railway for 100 years, benefiting people and businesses across Britain.

Building good infrastructure needs investment, but it has an excellent rate of return for UK PLC. For example, every pound spent on the Northern Hub project will return four pounds to the economy and the story is similar across Britain. The major projects that we are currently delivering will generate a rate of return several times their cost.

Between 2014 and 2019 we will invest more than £4bn per year to replace and improve the railway. Projects such as Crossrail, Thameslink, the Northern Hub, electrification and the new Borders railway in Scotland will help us to run more trains. This will build on improvement that we have already delivered, such as the transformation of King's Cross and Newport stations, massive improvements in Liverpool, and the new Airdrie – Bathgate line in Scotland.

But there are some issues that we cannot solve on existing lines. The most prominent of these are the Brighton Main Line and the West Coast Main Line, both of which will soon be full at the busiest times. This alone justifies new high speed lines. It is not about faster trains – it is about more track to meet passenger demand. The alternative of pricing people off the railway is not something we, or the country, want to see.

But we must balance tomorrow's railway with the demands of today's passengers. We are finding new ways to minimise the inevitable disruption as we work, such as clever ways of phasing schemes. A 24/7 railway is a nice headline but the reality is that we cannot shelve important work. To minimise disruption, our people often work overnight, at weekends or on public holidays. Every time we close the railway it affects someone and we thank you all for bearing with us.

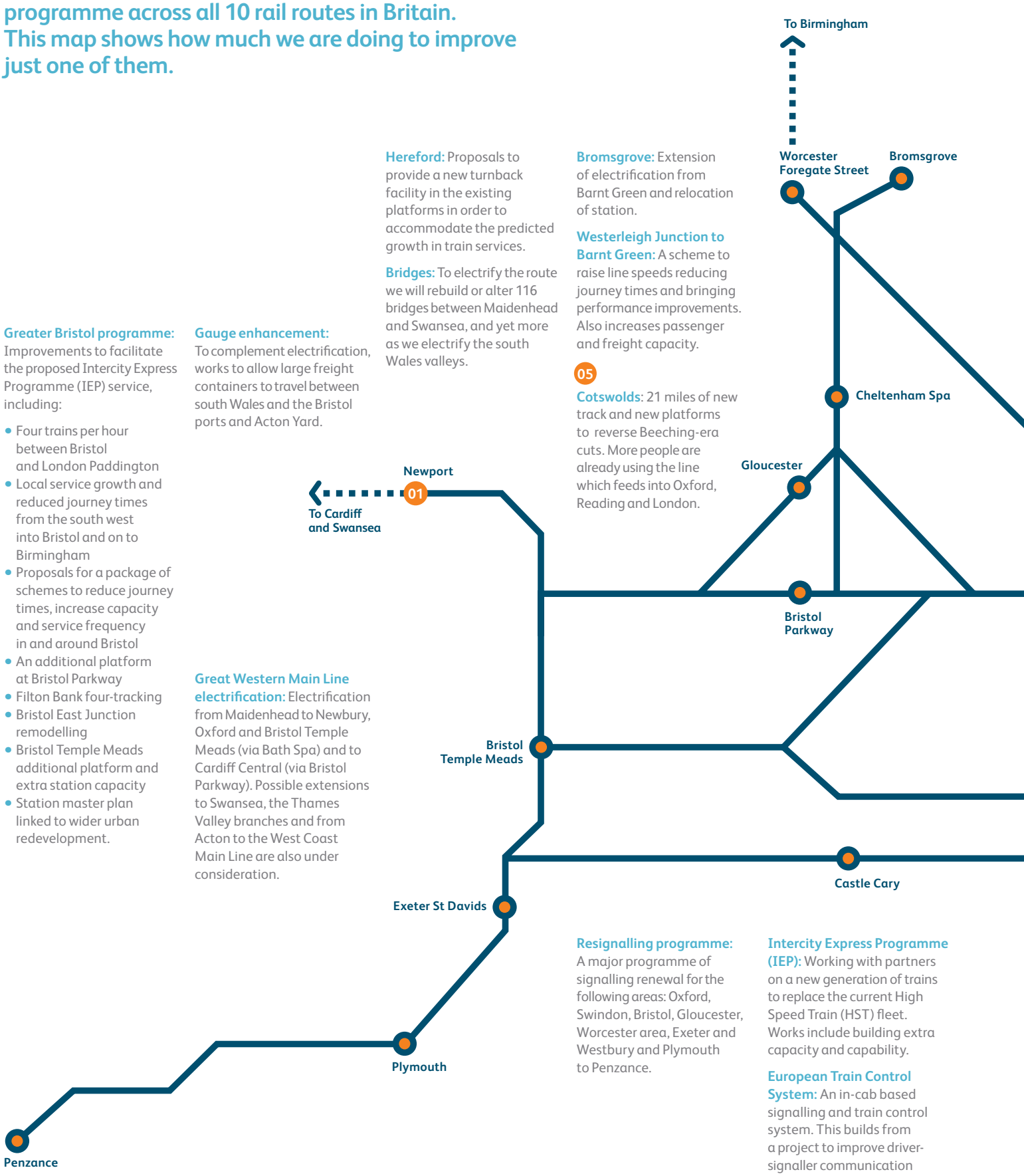
"There is now an urgent need to repair the decades-long degradation of our national infrastructure and to build for the future with as much confidence and ambition as the Victorians once did."

Prime Minister David Cameron, March 2012

London Bridge in the future: a modern station with increased capacity from 70 to 88 trains per hour at the busiest times.

The modernisation of the Great Western Main Line

Network Rail is delivering a massive improvement programme across all 10 rail routes in Britain. This map shows how much we are doing to improve just one of them.



Greater Bristol programme: Improvements to facilitate the proposed Intercity Express Programme (IEP) service, including:

- Four trains per hour between Bristol and London Paddington
- Local service growth and reduced journey times from the south west into Bristol and on to Birmingham
- Proposals for a package of schemes to reduce journey times, increase capacity and service frequency in and around Bristol
- An additional platform at Bristol Parkway
- Filton Bank four-tracking
- Bristol East Junction remodelling
- Bristol Temple Meads additional platform and extra station capacity
- Station master plan linked to wider urban redevelopment.

Gauge enhancement: To complement electrification, works to allow large freight containers to travel between south Wales and the Bristol ports and Acton Yard.

Great Western Main Line electrification: Electrification from Maidenhead to Newbury, Oxford and Bristol Temple Meads (via Bath Spa) and to Cardiff Central (via Bristol Parkway). Possible extensions to Swansea, the Thames Valley branches and from Acton to the West Coast Main Line are also under consideration.

Hereford: Proposals to provide a new turnback facility in the existing platforms in order to accommodate the predicted growth in train services.

Bridges: To electrify the route we will rebuild or alter 116 bridges between Maidenhead and Swansea, and yet more as we electrify the south Wales valleys.

Bromsgrove: Extension of electrification from Barnt Green and relocation of station.

Westerleigh Junction to Barnt Green: A scheme to raise line speeds reducing journey times and bringing performance improvements. Also increases passenger and freight capacity.

05

Cotswolds: 21 miles of new track and new platforms to reverse Beeching-era cuts. More people are already using the line which feeds into Oxford, Reading and London.

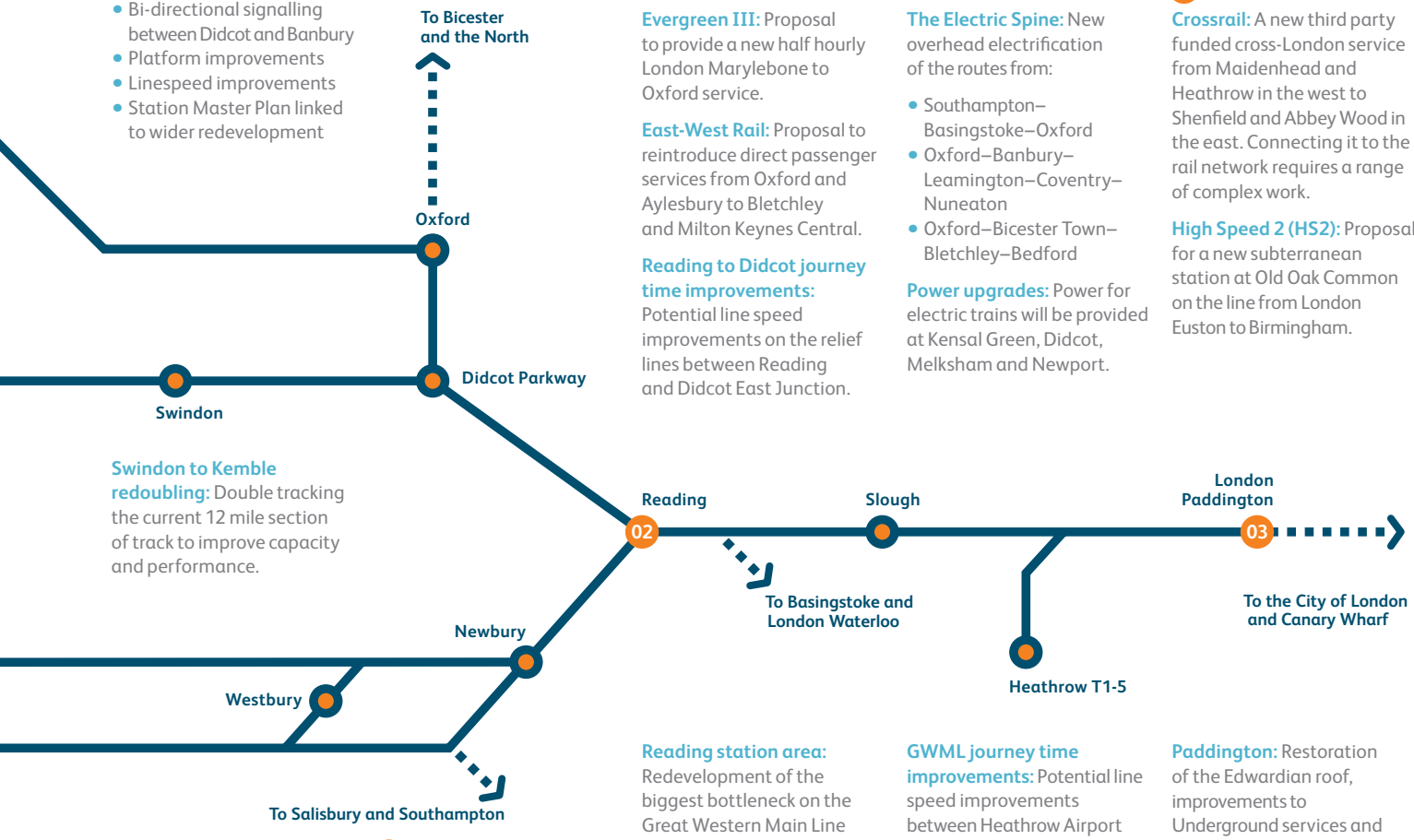
Resignalling programme: A major programme of signalling renewal for the following areas: Oxford, Swindon, Bristol, Gloucester, Worcester area, Exeter and Westbury and Plymouth to Penzance.

Intercity Express Programme (IEP): Working with partners on a new generation of trains to replace the current High Speed Train (HST) fleet. Works include building extra capacity and capability.

European Train Control System: An in-cab based signalling and train control system. This builds from a project to improve driver-signaller communication technology.

Oxford Corridor: To facilitate predicted growth in passenger and freight traffic through Oxford, a package of schemes is being reviewed to increase capacity and route availability, as well as to introduce higher line speeds to enable journey time benefits.

- Bi-directional signalling between Didcot and Banbury
- Platform improvements
- Linespeed improvements
- Station Master Plan linked to wider redevelopment



Evergreen III: Proposal to provide a new half hourly London Marylebone to Oxford service.

East-West Rail: Proposal to reintroduce direct passenger services from Oxford and Aylesbury to Bletchley and Milton Keynes Central.

Reading to Didcot journey time improvements: Potential line speed improvements on the relief lines between Reading and Didcot East Junction.

The Electric Spine: New overhead electrification of the routes from:

- Southampton–Basingstoke–Oxford
- Oxford–Banbury–Leamington–Coventry–Nuneaton
- Oxford–Bicester Town–Bletchley–Bedford

Power upgrades: Power for electric trains will be provided at Kensal Green, Didcot, Melksham and Newport.

04

Crossrail: A new third party funded cross-London service from Maidenhead and Heathrow in the west to Shenfield and Abbey Wood in the east. Connecting it to the rail network requires a range of complex work.

High Speed 2 (HS2): Proposal for a new subterranean station at Old Oak Common on the line from London Euston to Birmingham.

Swindon to Kemble redoubling: Double tracking the current 12 mile section of track to improve capacity and performance.

Reading station area: Redevelopment of the biggest bottleneck on the Great Western Main Line to deliver capacity and performance improvements. Working with local partners we will make improvements to the station and surrounding area.

GWML journey time improvements: Potential line speed improvements between Heathrow Airport Junction and Box Tunnel/ Bristol Parkway, and Reading to Basingstoke.

Western access to London Heathrow Airport: A link direct from the Great Western Main Line to Heathrow Terminal 5.

Paddington: Restoration of the Edwardian roof, improvements to Underground services and a new Crossrail connection.

High-Output Plant: A new factory train will speed up the installation of overhead power lines.

Westbury station: Potential reintroduction of a former platform in order to provide additional capacity and provide greater operational flexibility.

06

Southampton to West Coast freight upgrade and capacity improvements: Work to enable larger freight wagons, catering for growth in the deep sea container market. The Southampton to Nuneaton element takes 50,000 lorries off the roads per year.

A technology enabled future

Investing in technology will transform our knowledge of the railway making us better at targeting when, where and how we improve it.

When the railway was first built, it was at the cutting edge of innovation. Although we have made progress in many areas, a lack of investment means that much of our infrastructure remains outdated.

Today we stand on the verge of a quantum leap in the application of technology. We are innovating and leveraging technology from other industries. Innovative new ways of inspecting our railway are already enabling us to better target work, moving from a "find and fix" approach to one where potential problems are spotted and dealt with before they happen. Removing human error in inspecting safety critical components will make our railway safer.

In previous years we have underinvested in research and development, but we are rapidly making up for lost time. Our focus is on autonomous systems, new energy storage and harvesting technologies, and the use of modern materials to lower carbon emissions and reduce the cost of maintaining the railway. We have a fresh focus on bringing in new ideas and technology and by 2019 we will be investing more per year than other comparable British companies.

Real time information is helping us to manage our network better, run trains more closely together, and create better timetables. And as we have seen in London with smart ticketing, technology can make public transport easier to use. By opening up our data we will encourage app developers to find new consumer friendly ways of getting people information. This will transform the way the public engage with the railway.

Technology is showing us how far we have come but also how far we have left to go. Our response is to become more flexible and open. We are learning more about our railway all the time.

"We have good science and technology in this country, we should use it."
Commuter, Exeter

8,000

Handhelds with bespoke apps to log and record vital information

4.3

New apps replace the need to manually process 4.3 million paper-based inspection records per year

£28m

The original cost of Paisley Canal electrification

£12m

The new cost as a result of Network Rail working in alliance with First Scotrail and main contractor Babcock

A customer focused organisation

Structuring our organisation to give clearer accountability to local people who best understand the needs of our customers will help us become a more flexible, collaborative company.

Over the past few years, the rail industry has undergone a period of intense change. This change is far from over, but a number of new structures are in place.

The creation of the Rail Delivery Group (see p24) illustrates our commitment to working together as an industry.

Within Network Rail we have devolved decision making, allowing for closer collaboration with train operators, and moving away from a "one size fits all" approach across the network.

Devolution has allowed us to form alliances with our partners, bringing the operation of the trains and the running of the track closer together. We have formed various types of alliance across the country, depending on local needs.

And through the refranchising process, we are working with train operators to identify additional opportunities to improve the service for passengers.

We have created Infrastructure Projects as a business unit in Network Rail to focus on delivering quality and value for money in project delivery and closer collaboration with our suppliers. In addition, Network Rail Consulting will demonstrate our capability in international markets and learn from others abroad.

But this is far from the end of the development of Network Rail. We will continue to look at how we can improve our business and the way we work with our customers and suppliers.

"They are more accessible. I think they are on this collaborative agenda. They are walking the talk."

Anonymous supplier survey, March 2012

A changing industry

The Rail Delivery Group brings together the leaders of the rail industry from the major passenger owning groups, the largest freight operators and Network Rail.

- Leads the rail industry
- Develops rail strategies, policies and plans that will benefit passengers, freight shippers and taxpayers
- Provides the single and unified voice of the rail industry on key issues
- Identifies, pursues and facilitates the implementation of cross-industry efficiencies in areas such as asset management and technological innovation

Using new technology

Plain Line Pattern Recognition (PLPR) is just one of the cutting edge techniques that is bringing benefits for the whole industry.

Pre-PLPR

Crews walk lines across whole network to spot current defects

- Findings and location logged in books
- Information uploaded to computer
- Experts discuss solution
- Crew deployed to fix

With PLPR

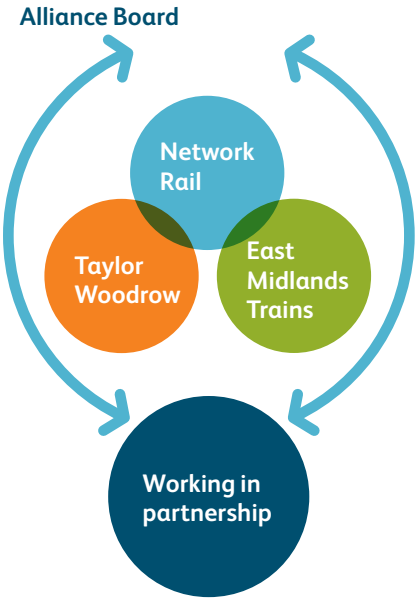
4 train rigs cover 80% of the network (15,000 miles) every fortnight

- Seven HD cameras take up to 70,000 pictures a second, along with 3D and thermal images. Computer algorithms recognise areas of current and future concern
- Analysis sent to track workers with GPS coordinates
- Crew deployed to fix

Nottingham Hub

This project is just one example of where closer working is saving time and money. The benefits include:

- A station upgrade in Nottingham
- An integrated transport hub (train-tram)
- Project savings of £1 million
- Earlier completion of project (saving 35 weeks)



Investing in our people

We will create an environment that promotes accountability, opportunity and diversity. This will help us to become an employer of choice.

Pioneers built our railway and great people continue to define our company. How we trust, value and support our people every day is central to transforming Network Rail into the company it must become to meet the challenges that lie ahead.

We directly employ 34,000 people in every region of Britain, and our work creates jobs for many more in our supply chain. Investing in people is at the heart of our business. Over a five year period we have recruited and developed over 1,000 apprentices, 500 graduates and sponsored 200 MSc students.

Our teams are committed to work day and night to keep our track safe: making decisions that help trains arrive on time, helping passengers at stations, delivering ambitious infrastructure schemes and designing the new technology that will change our industry forever.

We are committed to a diverse and highly skilled workforce, and we will continue to invest heavily in them. By doing this we will create an environment that promotes transparency and accountability. This means welcoming different points of view and diversity of outlook and background, and listening to our peers, colleagues, partners and customers. By continuing to invest in our people we will become a major employer of choice.

"It's worth investing in the future now."
Commuter, Woking

Investing in the next generation of engineers is good for the railway and for Britain.

1,000

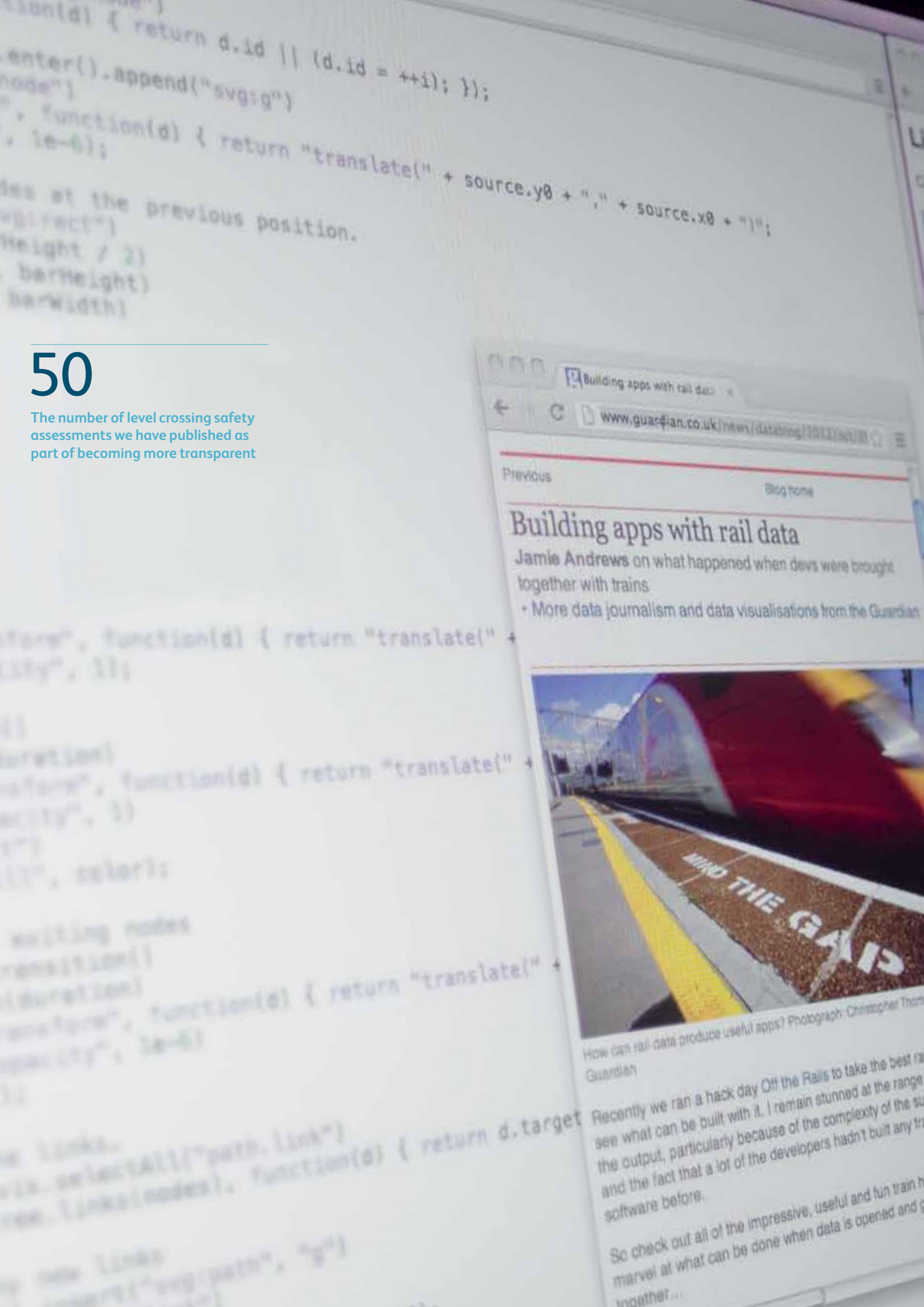
Apprentices taken on in the last five years

600

The number of Network Rail travel champions who, along with so many others, helped make London 2012 such a success

50

The number of level crossing safety assessments we have published as part of becoming more transparent

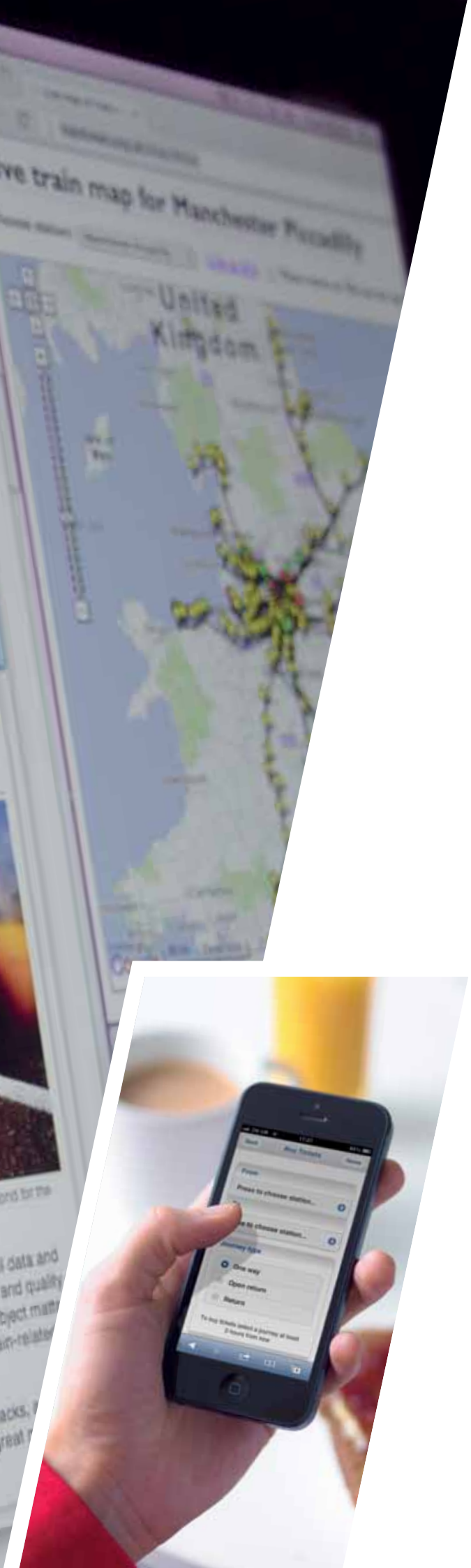


Opening up

We will become an open and accessible organisation which understands, and helps others to understand, the issues shaping the future of the railway.

We realise that for most people the rail industry is confusing and in the past Network Rail has been seen as unaccountable. We have not explained enough about how the rail industry operates, why we do things and what we spend the public's money on. We will tackle these issues head on.

The public needs to be part of the debate about the future of the railway. Building on the report, *Our Railway's Future*, we will transform the way Network Rail communicates with the public.



App developers are changing the way that people plan their journeys.

Through our role in the Rail Delivery Group we will work with the industry to be more open and transparent. This will help answer the big questions the public have about the railway: Why is it so crowded? Why are trains delayed? How do fares work? Who pays for the railway? And how do we make it more affordable?

We have made a start by opening up our data to web and app developers so that they can help passengers plan their journeys better. Other steps include extending the voluntary transparency scheme we began in 2012, which currently includes information on our level crossings, major project costs, IT spend, cost of employee travel and directors' expenses. There is also a place for people to suggest the information they'd like to see.

We want the public to be able to find out about Network Rail more easily, and to feel empowered to ask for information when it is not available. We take difficult decisions every day, but we want the regulator, the government and the public to understand how and why these decisions are taken, for the benefit of the railway.

"We will make Network Rail more accountable to its customers."
Coalition Agreement, May 2010

A railway fit for the future

By placing sustainability at the heart of everything we do, we will make our business more efficient, protect the value of our assets, and deliver a railway fit for future generations.

Good management of our economic, social and environmental impact makes for a strong and prosperous business. We recognise the role that the railway can play in helping to tackle climate change. Using low carbon energy sources will help governments to achieve their 2050 emissions targets. We will also reduce emissions by ending the dominance of diesel trains as we electrify large parts of the rail network.

The efficient use of energy also has significant financial benefits. By investing with our partners in new train technology, such as regenerative breaking and energy metering, we can become more energy efficient, thereby reducing costs.

Public transport also plays an important social role. It links communities, makes it possible for people to travel longer distances to find jobs, and provides vital freedom to thousands of people. Therefore, the railway that we build must provide accessible and inclusive provision for all.

In some areas we have big challenges ahead. Many of our structures are over 100 years old and it is important that we adapt infrastructure and operations to make them more resilient to future changes in the climate. As we have seen, global weather patterns are changing and it is our job to adapt our plans to meet this challenge. Therefore, we need sustained investment and we are committed to only make decisions which are for the long-term good of our railway and Britain.

"I'd rather see a couple of railway lines than dual carriageways."
Rural train user, South West

The flooding in November 2012 underlined the importance of investing to future-proof the railway.

2012

A year when extreme weather caused severe flooding on the railway in many places, including across south west England

1,000,000

Equivalent lorries off the roads per year from carbon reductions

£1.3bn

Money that will be generated by commercial property (2009-14), all of which goes to improve the railway

Reducing public subsidy

We will continue to reduce public subsidy of the railway.

Upgrading redundant arches under the railway creates space for businesses and revenue for the railway.

Our aim is to create a financially sustainable railway. Day to day funding comes from a combination of fares, taxes and commercial property revenue. Over the last few years successive governments have decided to balance more of that funding towards passengers, the users of the railway.

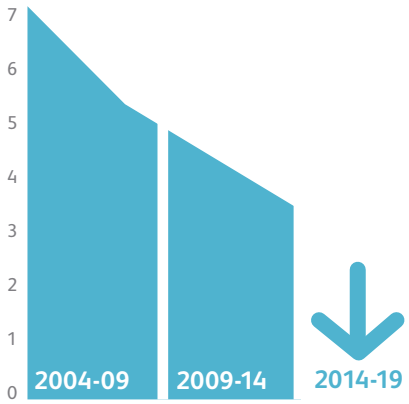
Network Rail does not set fares, but fare revenue helps to fund everything that we do, including projects that are critical to meet freight and passenger demand.

It is our responsibility to continue to seek efficiencies. In recent years growth in passenger numbers and reduction in our costs has cut public subsidy significantly, and we intend to cut this yet further.

While we are committed to reducing subsidy, we would fail the public if we did not learn from history and made short-term savings at the expense of higher long-term costs. In infrastructure, it will never be cheaper to put off to tomorrow what could be done today. For example, in the past corners were cut when electrifying lines. Ultimately passengers are paying the price for that decision, with disruption today. The cost of replacing this sub-standard equipment is far higher than if the job had been done properly the first time.

World class infrastructure requires substantial investment. Therefore we need to attract a greater proportion of private investment into the railway – this means making Network Rail, and Britain's rail network, an attractive place to invest, with consistent policies, good management and long-term decision making. This is the only way to sustainably reduce public subsidy.

Total public subsidy for the railway (£bn)



Mapping the biggest investment since the Victorian era

Network Rail is working with its customers to transform the railway, resulting in better stations and links across the country. This map shows just some of the improvements.

Locations

01 Forth Bridge
This iconic bridge won't need painting again for at least 20 years

02 Newcastle (Northern Hub)
More trains and better connections

03 Leeds (Northern Hub)
More trains and better connections

04 Liverpool Lime Street
Major improvements to Liverpool Central station and the Underground

05 Manchester Victoria
A dramatically improved station for passengers

06 Sheffield (Northern Hub)
More trains and better connections

07 Nottingham Hub
A new integrated transport hub, with station improvements

08 Stafford – West Coast Main Line
A new bypass to increase trains, but it won't solve capacity problems further south

09 Birmingham New Street
A radical overhaul, bringing significant wider regeneration benefits

10 Bletchley – West Coast Main Line
A major programme of renewals and resignalling

11 Newport
A new station delivered for the 2010 Ryder Cup

12 Reading
Unlocking a key bottleneck on the Western route and rebuilding the station

Routes

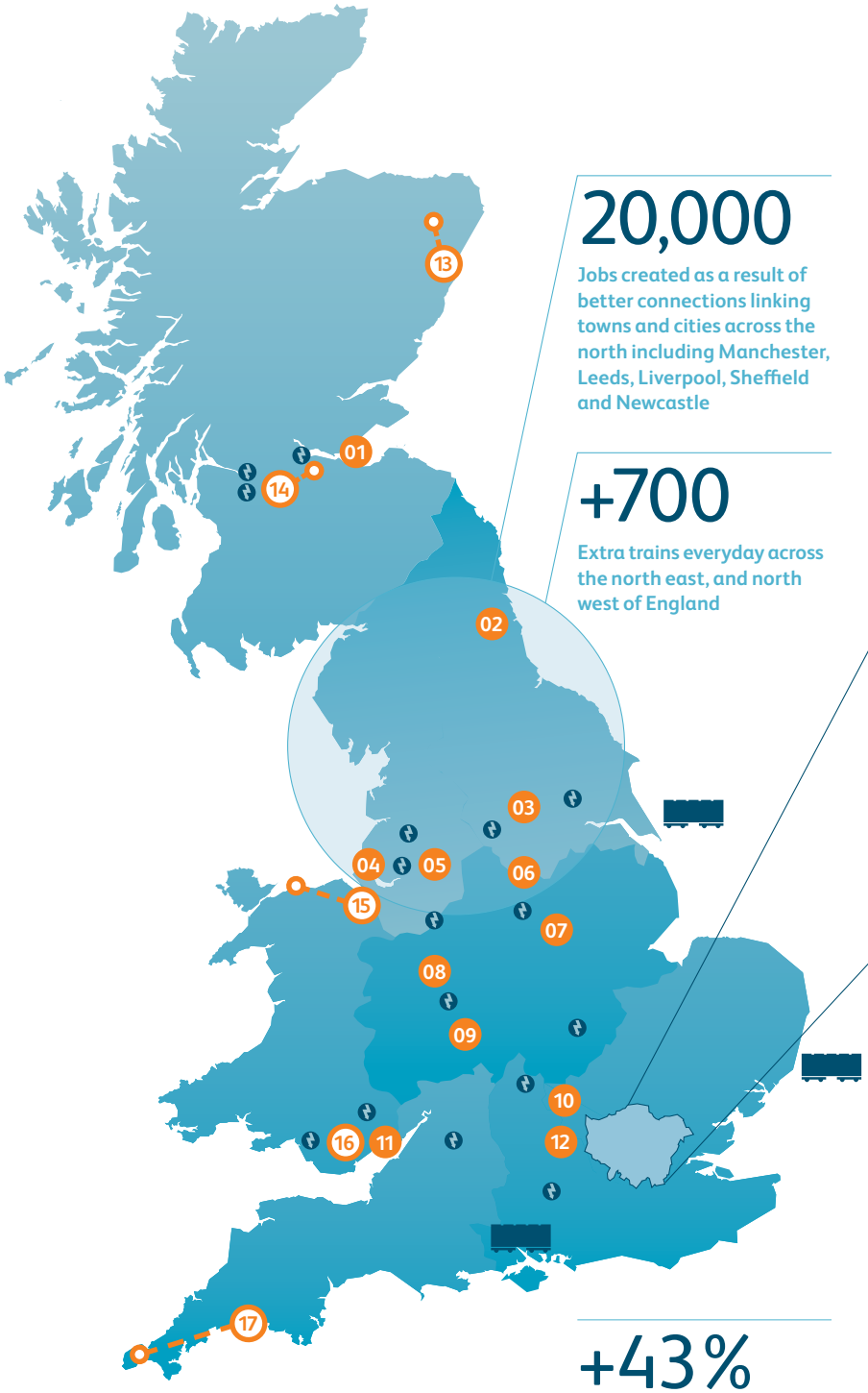
13 Aberdeen – Inverurie
Enhanced commuter services

14 Airdrie – Bathgate
The longest new section of passenger railway in the UK for over 100 years

15 Flint – Llandudno
A major resignalling programme to improve passenger journeys

16 Cardiff area
A major resignalling programme including station and track upgrades

17 Plymouth – Penzance
Resignalling as part of a long term programme across the south west



20,000
Jobs created as a result of better connections linking towns and cities across the north including Manchester, Leeds, Liverpool, Sheffield and Newcastle

+700
Extra trains everyday across the north east, and north west of England

+43%
Capacity in London and the South East

Key

Ports served by improved freight routes
Electrification of key routes

Greater London

18 King's Cross
A spectacular redevelopment of this Grade 1 listed station

19 Paddington
Restoration of an historic roof and Crossrail improvements

20 Farringdon
A new interchange – linking Thameslink, the Underground and Crossrail

21 Stratford
Transformed ahead of London 2012

22 London Blackfriars
London Blackfriars – The first station to span the Thames

23 London Bridge
More space for passengers and trains

Key

Crossrail route
Thameslink route

Contact information

Press Enquiries
T: +44 (0)20 3356 8700
E: mediarelations@networkrail.co.uk

Twitter: @networkrailPR

To view this document online please visit www.networkrail.co.uk/SBP

Designed by Further™
furthercreative.co.uk

Network Rail
Kings Place
90 York Way
London N1 9AG

www.networkrail.co.uk