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# Contents

Corporate Summary .....	1
Delivering for our customers .....	1
Route Supervisory Boards .....	1
Strategic Business Plan .....	1
Leading indicators for start of CP6 .....	2
Digital Railway strategy .....	3
Company Matters .....	3
Contact us .....	3
National Scorecard .....	4
Scorecard Definitions .....	5
Safety .....	6
Financial performance .....	8
Investment .....	8
Asset Management .....	12
National Performance .....	17
Locally driven measures .....	20
Customers and communities .....	20
Sustainable Development .....	21
Route Comparison Scorecard .....	23
Scotland .....	24
Anglia .....	27
London North Eastern & East Midlands .....	30
London North Western .....	33
South East .....	36
Wales .....	39
Wessex .....	42
Western .....	45
Freight and National Passenger Operators .....	49
System Operator .....	51
Glossary .....	55

# Corporate Summary

The Annual Return 2018 is the formal means by which we report on our progress in delivering the outputs that were established by the Office of Rail and Road (ORR) in its Final Determination for Control Period 5 (CP5), covering the period from 1 April 2014 to 31 March 2019.

This report, which covers the period from 1 April 2017 to 31 March 2018, also includes our national and route scorecards with commentary. In 2015/16, Network Rail introduced route-based scorecards, developed in consultation with our customers and other stakeholders, which set out performance and delivery targets for the year. Our route and national scorecards, which are presented in this document, are a key mechanism by which Network Rail monitors overall business performance. For the first time, we are also publishing our route comparison scorecard which compares the performance of each route relative to their own targets.

To support this document, we have published [Annual Return data tables](#), which present an ongoing record of our stewardship of the rail network, on the [Annual Return](#) page of our website. The Annual Return follows the format agreed with the ORR and is prepared in accordance with Condition 12 of our Network Licence.

Our 2018 [Annual Report and Accounts](#) are also published on our website as well as our [Regulatory Financial Statements](#) which provide annual financial performance information and allow the financial performance of Network Rail to be monitored.

## Delivering for our customers

Network Rail provides a vital public service, but we know that future taxpayer funding will be insufficient to support all the improvements necessary to meet growing demand. A combination of public and private investment on the railway will stimulate Britain's economy.

We have been delivering our Transformation Plan to become competitive, customer focused and more attractive to investors. We are acting on the recommendations of the [Hansford Review](#) into project contestability, opening up Network Rail to competition in the delivery of projects, which will drive efficiency and encourage new sources of funding.

Transforming our business into one which is devolved allows each route to make decisions more effectively, putting the customer and passenger at the heart of everything we do. In 2017/18 we announced new route leadership structures to make

sure each route has the capacity and capability to deliver an increased focus on project delivery, customer expectations and third party funding, as well as day-to-day operational excellence.

The ORR has agreed to use route based scorecards as the basis for regulation from the start of CP6. Scorecards summarise our annual performance. The 2017/18 route scorecards include locally driven measures, set in alignment with train operators. Up to 60 per cent of route performance targets are now set locally, link to customer priorities and roll up into the national scorecard.

In October 2017, the Rail Delivery Group announced 'In Partnership for Britain's Prosperity – Britain Runs on Rail'. This long-term, joint plan will boost Britain's economy by £85 billion. We have outlined four commitments for improvement:

- Strengthen the railway's contribution to the economy, keeping running costs in the black, freeing up taxpayer's money
- Increase customer satisfaction by improving the railway to remain the top-rated major railway in Europe
- Boost local communities through local decision-making and investment
- Create more jobs, increase diversity and provide our employees with rewarding careers.

The Secretary of State for Transport's strategic vision aligns with 'In Partnership for Britain's Prosperity' and aims to bring track and train closer together as well as increasing railway capacity.

## Route Supervisory Boards

Route Supervisory Boards have been introduced to facilitate 'one voice' for passengers, operators and infrastructure providers and enable track and train to work even closer together. The cross industry representation is led by an experienced and independent chair, driving collaborative discussions and enabling effective decision making which takes into account wider industry considerations. The priorities of the Route Supervisory Boards will be aligned to local needs.

Boards have been created for Western, East Coast Main Line, Wales, West Coast Main Line and Chilterns, with further boards being set up during 2018.

## Strategic Business Plan

In February 2018, Network Rail published its Strategic Business Plan (SBP) to improve Britain's railway over the five years from 2019 to 2024,

known as Control Period 6 (CP6). This was a major milestone in the ongoing process to determine Network Rail's funding for CP6.

The plan represents Network Rail's detailed response to the High Level Output Specifications (HLOS) and Statements of Funds Available (SoFA) published by Governments in 2017.

The ORR has reviewed the SBP and issued a Draft Determination of Network Rail's funding needs, to be followed by a Final Determination in the autumn.

### Leading indicators for start of CP6

Our SBP outlines an ambitious programme of works to be delivered in CP6. In order to deliver this challenging plan we will need to hit the ground running from the start. We have therefore developed, and shared with the ORR, a series of leading indicators to assess and monitor our preparations to efficiently deliver CP6. The leading indicators have been newly developed and at the time of publication of this Annual Return, targets are still being developed and there is still some uncertainty about what 'good' looks like. The quality of our insights and analysis will improve over the coming months.

These leading indicators compare readiness across routes and progress is reported to and monitored by our Executive Committee periodically. We are sharing these progress reports with the ORR in order that it can track and assess our readiness for CP6. We provide a progress update against our CP6 leading indicators below.

#### Network access

Measuring the time routes have booked in the Possession Planning System (PPS), compared to the estimated access required to deliver the planned workbank, gives an indication of whether we have sufficient access to deliver our planned works. We have used historic expenditure per hour of access to estimate the level of access needed in year 1 of CP6, which we compare against the latest access booked in PPS. The proportion of access booked should build as we progress through year 5. Access bookings typically fall into either large, disruptive possessions associated with major renewals or enhancement programmes (including blockades), or 'rules of the route' possessions for shorter, less disruptive access, including midweek night-time maintenance and renewals work. At this stage we would only expect the disruptive possessions to be booked in PPS.

Based on historic levels of access booked in PPS, at Period 2 of 2018/19 all routes are ahead of where they were in prior years, with Anglia (39 per cent)

and South East (35 per cent) having the largest percentage of access bookings secured.

#### Project authorisation

Identifying the level of capital projects that have detailed forecasts and authorised expenditure in the project planning system (Oracle Projects) gives an indication of how confident we are in project delivery. We are using the project forecasts in Oracle Projects to identify the amount of projects with authority and compare this to the planned capital spend in year 1 of CP6 (2019/20). The level of authorised expenditure should build towards the start of the next control period. We have also calculated an indicative target level of authority based on historic project authorisation and delivery.

There is currently regional variation in the authority levels, reflecting differing levels of maturity of CP6 project plans as well as variations in project deferrals from previous years. LNW and South East are ahead of target while all other routes are currently behind target.

At Period 2 of 2018/19 Network Rail is a little behind where it has been at this stage in previous years. This should be expected given the changeover of control period at the end of the year; however all routes are focusing on developing their project plans over the summer.

#### Workbank stability

The ability of our own internal teams, as well as those provided by external resources, to deliver projects to time and budget is dependent on a stable workbank. To assess the stability of our plans, we are tracking the changes of each route's project workbank from one period to the next. There is regional variation in workbank stability as measured at the end of Period 2 of 2018/19, with some routes having more robust project plans than others. Across all routes, 33 per cent of the workbank is stable against a target of 37 per cent. However, workbank stability is more relevant during the control period than at this point (workbanks which are still in development, are by their very nature, not stable).

At this stage the metric is focused on how much of the year 1 forecast is supported by individual projects in Oracle; as we progress through the year the changes in these project plans will become increasingly important.

#### Efficiency maturity

Realising our efficiency plans will be instrumental in our ability to deliver the outputs in our plan in the most efficient way. The financial plan incorporates net cost reductions in year 1 of CP6 compared to current levels, and each route and function is

developing detailed initiatives to support these efficiencies. In order to assess our confidence in realising these cost reductions, we have developed an indicator around the maturity and robustness of the route plans. The metric is a confidence indicator based on the level of detail in individual initiatives (i.e. whether there is an initiative owner and defined milestone plan).

Overall, 84 per cent of operating cost efficiency initiatives have defined owners and milestone plans.

Information around our renewals efficiency plans is less readily available. We are working to improve visibility of these efficiency initiatives over the coming months.

### **Infrastructure Projects framework contract awards**

Infrastructure Projects (IP) is re-negotiating framework contracts with major suppliers ahead of the start of CP6 to ensure continuity of available resources and to optimise framework rates and terms. The metric represents our assessment of progress towards successful implementation of these contracts, based on the milestone delivery plan. All contract awards are currently on track, with no major risks highlighted.

### **Maintenance capacity**

A critical success factor of our performance in the first year of CP6 will be our delivery of planned maintenance activities. We need to ensure that each route has the capacity to deliver the planned maintenance works, particularly where the projected hours exceeds current capacity levels. We are therefore comparing maintenance headcount levels to the estimated requirement for the first year of CP6 to ensure delivery units are adequately resourced to manage maintenance delivery. Currently, two routes (Anglia and Western) are ahead of target in terms of increasing maintenance headcount and most routes have made progress. Other routes are currently finalising recruitment strategies with the aim of beginning recruitment towards the end of summer, so momentum is expected to build in the latter part of the year.

### **Digital Railway strategy**

In May 2018 Mark Carne together with the Secretary of State for Transport launched the Digital Railway strategy. This will ensure that from 2019 all new trains and signals in Great Britain are either equipped with digital technology or ready for it.

Digital rail technology allows more trains to run per hour by safely running trains closer together, this in turn allows more frequent services and more seats to be available to passengers. Delays will be cut by allowing trains to get moving more rapidly after

disruption, improved mobile and Wi-Fi connectivity will enable passengers to make the most of their travel time and communities close to the railway can connect more easily.

### **Company Matters**

Mark Carne, chief executive, announced in February 2018 that he will be retiring from Network Rail. Since Mark's appointment in 2014, he has set out a strategic vision for Digital Railway and has transformed our safety culture, making the railway and our workforce safer whilst driving devolution and efficiency. He has also emphasised the importance of equality and diversity, Mark will continue to lead discussions with the regulator regarding our SBP for CP6, before his successor transitions into the company in summer 2018.

The appointment of Andrew Haines as Network Rail's new chief executive was announced on 21 May. Andrew will take up his role in late summer following a period of handover with Mark.

This year we have welcomed a new non-executive director to our Board. Mike Putnam has previously worked in businesses across the development, construction and services sectors, and has successfully delivered many high-profile projects.

### **Contact us**

If you have any questions or feedback about this Annual Return or the [Annual Return data tables](#) please contact us at:

[annualreturn@networkrail.co.uk](mailto:annualreturn@networkrail.co.uk)

To contact us about a safety concern, general queries or to make a complaint about one of our managed stations, please [visit our website](#) or call our 24 hour national helpline:

03457 11 41 41

Our website also provides guidance on activating Type Talk facilities and live chat.

You can find more information and support for our neighbours on the [contact us](#) page of our website.

If you would like to access more information about Network Rail, please visit the [transparency](#) page of our website, or contact us at:

Email [FOI@networkrail.co.uk](mailto:FOI@networkrail.co.uk) or:

Post Network Rail, Freedom of Information  
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Elder Gate  
Milton Keynes  
MK9 1EN

# National Scorecard

Safety	Worse than Target	Target	Better than Target	2017/18 Actual
Lost Time Injury Frequency Rate (LTIFR)	0.425	0.402	0.380	0.364
Close calls raised	153,750	205,000	256,250	259,009
Close calls % closed within 90 days	80.0%	85.0%	90.0%	82.2%
Train accident risk reduction measures	60.0%	80.0%	100.0%	87.9%
Top 10 milestones to reduce level crossing risk	60%	80%	100%	100%
<b>Financial Performance</b>				
Financial Performance Measure – excl. enhancements	£(225)m	£0m	£225m	£(125)m
Financial Performance Measure – enhancements only	£(335)m	£0m	£335m	£4m
Cash Compliance – Income & Expenditure	£(60)m	£0m	£300m	£38m
<b>Investment</b>				
Top 10 Renewals & Enhancements Milestones	6	8	10	7
All Delivery Plan enhancement milestones (%)	60.0%	80.0%	100.0%	80.6%
<b>Asset Management</b>				
Composite Reliability Index (CRI)	15.6%	16.5%	17.5%	18.1%
7 Key Renewal Volumes	90%	95%	100%	100%
<b>Train Performance</b>				
Train Performance	0.0%	50.0%	100.0%	24.4%
<b>Locally Driven Measures</b>				
Locally driven customer measures	0.0%	50.0%	100.0%	60.4%
<b>Route performance</b>				
Anglia	0.0%	50.0%	100.0%	47.2%
London North Eastern & East Midlands (LNE & EM)	0.0%	50.0%	100.0%	56.9%
London North Western (LNW)	0.0%	50.0%	100.0%	37.1%
Scotland	0.0%	50.0%	100.0%	52.1%
South East	0.0%	50.0%	100.0%	70.7%
Wales	0.0%	50.0%	100.0%	64.8%
Wessex	0.0%	50.0%	100.0%	53.4%
Western	0.0%	50.0%	100.0%	48.3%
Freight and National Passengers Operators (FNPO)	0.0%	50.0%	100.0%	61.5%



## Scorecard Definitions

### Safety

#### Lost Time Injury Frequency Rate (LTIFR)

LTIFR measures the number of injuries leading to absence from work among Network Rail employees and contractors employed by Network Rail, per 100,000 hours worked.

#### Close calls

The number of close calls reported for any occurrence that has the potential to cause injury or damage.

#### Close calls closed within 90 days

The percentage of close calls raised since 1 January 2017 that have been addressed and closed within 90 days.

#### Train accident risk reduction measures

Measures our achievement of the key milestones and metrics to reduce train accident risk.

#### Level Crossing Risk Reduction

A measure of milestones hit to reduce level crossing risk, including closures, downgrade in status and crossing enhancements.

### Financial Performance

#### Financial Performance Measure (FPM)

A comparison of income, operational expenditure and renewals expenditure to the baseline set at the start of the year. The baseline is adjusted to reflect the capital works actually delivered in the year to create a like-for-like comparison. The scorecard reports on the financial performance for expenditure on enhancements only, and expenditure excluding enhancements.

#### Cash Compliance

This is a measure of how well we have remained within our funding envelope in total. This is an aggregation of all variances against our financial budgets within Capex, Opex and income.

### Investment

#### Infrastructure Projects Renewals and Enhancement Milestones

Relates to the top ten renewals and enhancements milestones of our Infrastructure Projects work.

#### All Delivery Plan Enhancement Milestones

Our investment projects are managed using the Governance for Railway Investment Projects (GRIP) approach, which has milestones at stages three and six of the eight-stage project process.

### Asset Management

#### Composite Reliability Index (CRI)

This is a measure of the short-term condition and performance of our assets including track, signalling, points, electrification, telecoms, buildings, structures and earthworks.

#### 7 Key Renewal Volumes

Our seven key volumes for renewals are plain line track, switches and crossings, signalling equivalent units, underbridges, total earthworks, wire runs, and conductor rail.

#### Reduction in Service Affecting Failures

A service affecting failure is an asset failure causing train delays on Network Rail owned infrastructure.

### Train Performance

An aggregation of all train performance measures on route scorecards consolidated into one measure to summarise train performance. Route scorecards also include measures of train performance agreed with customers, such as:

#### Public Performance Measure (PPM)

Measures the percentage of trains arriving within ten minutes of scheduled arrival time for long distance services, and five minutes for London and South East and regional services.

#### Cancellations and Significant Lateness (CaSL)

A train that is cancelled (at origin or on its journey), fails to make a scheduled stop at a station, arrives at its terminating station 30 minutes or more after its scheduled arrival time, or the originating or terminating station is changed.

#### Right time arrival

Measures the percentage of trains arriving at their terminating station early or not more than 59 seconds later than scheduled.

### Locally Driven Customer Measures

An aggregation of all locally driven customer measures on route scorecards consolidated into one measure. Route scorecards also include:

#### Reduction in Railway Work complaints

Measures the number of railway work complaints received throughout the year.

### Route Performance

The weighted performance of each route against their targets set in consultation with stakeholders.



## Safety

There has been continuing improvement in safety performance over the year. More than ten years have now elapsed since the last passenger or workforce fatality as a result of a train accident. We continue to be one of the safest railways in Europe.

Sadly, however, in June 2018 a young man died while working at a station site in Scotland. Our deepest sympathies are with his family, friends and colleagues. A full investigation into how this tragedy happened has been initiated; we are determined to harness the insights from this to help make our safety culture stronger, for employees, passengers and the public.

We achieved our corporate safety targets for Lost Time Injury Frequency Rate (LTIFR), the number of close calls raised by our workforce, passenger train accident risk reduction measures, and key level crossing risk reduction milestones. We did not meet our target to close out 85 per cent of close calls within 90 days.

We targeted a 10 per cent improvement on the previous year LTIFR workforce safety target (within which we include our contractors) and we exceeded this target with an improvement of 18 per cent at 0.364 (lower score is better). There were no workforce fatalities in 2017/18. In addition we have made significant progress in improving the safety of our workforce whilst driving.

The reporting of close calls continues to highlight where action can be taken to address unsafe conditions or acts; and over 259,000 close calls were reported throughout the year. Slips, trips and falls remain a significant area to address to reduce the number of specified injuries; the main underlying cause is poor housekeeping at sites.

The true value, however, is achieved when prompt action is taken to effectively close out those calls within a reasonable timescale. We closed 82.2 per cent of close calls within 90 days, worse than our target of 85 per cent. The close call system has been enhanced with a feedback loop which has improved the quality of close out significantly. There is also now an assurance check in place securing that all close calls are closed out with a proper explanation to the employees that reported them.

The level of train accident risk, monitored through the industry precursor indicator model, is at its lowest ever level (1.421 compared to 1.704 in 2016/17). Significant progress has been made in implementing the risk reduction work streams, meeting 88 per cent of milestones for Train Accident Risk Reduction Measures compared to a target of 80 per cent.

Despite progress being made in reducing the total number of derailments, there were still several derailments during the year, including a freight train north of Ely on 14 August 2017, the derailment of a passenger train outside London Waterloo station on 15 August 2017 and the derailment at London Paddington station on 20 August 2017. These incidents continue to act as a reminder of train accident risk potential and the importance of implementing effective risk-based controls.

During 2017/18, the ORR issued seven improvement notices to Network Rail under the Health and Safety at Work Act 1974, covering a range of specific aspects of our health and safety performance. Details can be found on the ORR's [website](#).

On 15 March 2018 Network Rail was fined £733,000 at Bristol Crown Court for failing to undertake adequate maintenance to prevent a freight train derailment near Gloucester in 2013.

### Small Talk Saves Lives

Network Rail worked with Samaritans, British Transport Police and train operating companies, to launch 'Small Talk Saves Lives' campaign to give travellers the confidence to act if they notice someone who may be at risk of suicide on or around the rail network. By highlighting that suicidal thoughts can be temporary and interrupted with something as simple as a question, the campaign aims to give the public the tools to spot a potentially vulnerable person, start a conversation with them, and help save a life. More than 16,000 rail employees have been trained in suicide prevention by Samaritans.

The campaign was developed after research showed passengers have a key role to play in suicide prevention. Further research showed the majority of people are willing to act to prevent a suicide, but many wanted guidance on how to help, and reassurance they wouldn't 'make things worse'.

### Level crossing risk reduction

At the beginning of CP5, a £99 million ring-fenced fund was identified to maximise risk reduction at level crossings through closures and improvements. The fund has been devolved to routes, each making a commitment to achieve a minimum risk reduction. With this and other risk reduction work, we have delivered 21 per cent level crossing risk reduction since the end of CP4.

55 level crossings were closed in 2017/18 and a small number have been downgraded in risk status. All ten of the top ten level crossing milestones, based on potential risk reduction, were delivered as

planned. The total number of closures since the start of CP5 now stands at 319, with the total closures since the start of CP4 at 1,123. Since the start of CP5, 22 level crossings have been downgraded in risk status totalling 70 since the start of CP4, with a further 71 temporarily closed through a Traffic Regulation Order.

### Occupational health

Implementation of a new IT system by our Occupational Health (OH) provider in July 2017 had a created a significant impact on Network Rail's ability to report on occupational health. The OH provider has since focussed its resources towards stabilising the platform and improving operability through functionality and efficient and accurate workflows. Whilst this is a continuous process, operational checks have been installed to ensure that all transactions can be accurately captured and reported in management information. We are working with our OH provider to ensure that we have a reliable and efficient platform so that we have access to timely and accurate reports.

Positively, in 2017/18 we have delivered a significant improvement in Hand Arm Vibration Syndrome (HAVS) tier two and three health surveillance compliance rate, assessing 93.2 per cent of the 'at risk' population.

### Home Safe Plan

The [Home Safe Plan](#) consolidates a large number of projects into a workable plan to deliver the greatest health and safety impact. Ongoing projects in the Home Safe plan include:

- Fatigue Improvement Programme
- Risk Management (including Work Activity Risk Assessments and risk awareness)
- Electrical Safety Delivery Programme
- Safer Trackside Working
- Safety Hour
- Community Safety
- Level Crossing Risk Reduction
- Prioritised Technology for Level Crossing Safety
- Identification and Monitoring Train Accident Risk Reduction
- Manual handling
- Frontline Safety Critical Communications
- Health and wellbeing resilience
- Business Critical Rules
- Integrated Management System
- Suicide Prevention Programme.

A number of workforce safety improvement initiatives in the Home Safe Plan have been implemented and progress has been monitored during 2017/18. Management of occupational road

risk included installing vehicle monitoring systems to over 7,000 road vehicles and has progressed well, significantly reducing the number of speeding offences. An 80 per cent reduction in road traffic accidents involving Network Rail employees was seen in the year. The revised Planning and Delivering Safe Work (PDSW) company standard for those working on or near the railway line was rolled out in September 2017 following some previous delays. A robust process is in place to monitor compliance across the business. This programme has provided clarity to employees about who is accountable for their safety and how health and safety risks are managed on site.

### Security

We recognise that to continue to deliver a safe, high performing railway we need to tackle increasing security risks, in cyberspace and in the real physical world. We have made great progress in our cyber security arrangements this year, aligning to the 'National Cyber Security Centre 10 Steps', which protected us from high-profile attacks in 2017 such as the WannaCry and NotPetya Ransomware attacks reported widely in the press. However threats to the railway are increasing; trespass, theft, vandalism and cyber attacks are a daily challenge impacting our operations and costs.

#### Focusing on security excellence

To create a strong strategic focus on security, we have for the first time introduced a Group Security function and recruited a chief security officer. Security is a key part of everything that we do and everyone plays a role in keeping the railway secure. However we recognise that strong leadership is required to provide clear direction and professionalism to our security management activities. The Group Security team have published Network Rail's Security Strategy, initiated research and development into key security challenges and are establishing the policies, processes, tools and methods to help Network Rail secure the railway, its users and our workforce from persistent and growing threats.

#### Responding to terrorist threats

Sadly, during 2017/18 terrorist incidents occurred at Manchester Arena, adjacent to Manchester Victoria station, and on London Bridge in front of the station which resulted in 30 deaths (22 lives were lost in Manchester and 8 lives were lost at London Bridge). Each of these incidents involved our stations and employees. We are proud of the actions our employees took to assist those who were involved in these tragic incidents and are developing a Rapid Reaction First Aid capability to supplement

emergency services in mass casualty incidents on or around the railway.

Security regulations for the railway were revised in June 2017, focusing on countering terrorist threats such as those experienced in London, Manchester and across major European cities. The UK Security Services continue to highlight the threat to transport systems from terrorist attacks and this increase is reflected in our plan to deliver and maintain our security measures. Incidents such as the improvised explosive device on a train at Parsons Green and the Manchester Arena attack highlight the need for better detection and response to explosive devices. We have concluded research and development work to improve our understanding of how best to control this threat and will introduce and improve existing measures in the coming year.

#### Improving security at our key facilities

We have introduced security plans for all of our critical facilities and managed stations, in line with revised railway regulations. Whilst the details of our security measures are held confidentially, we report compliance to the security regulator in the Department for Transport (DfT) and have full approval for all of our site security, security training and communications plans. Each of our routes has established Security and Resilience Councils to give a clear focus on security performance and to drive continuous improvement and sharing of threat intelligence and best practice.

#### Establishing a security culture

Underlying all of our security measures are the people who work on the railway. Strong security behaviours, based on clear accountabilities, effective training and a supportive environment are needed to protect the railway. This year we introduced our Security Culture Plan, focused on the principles of 'Protect our railway, Take responsibility and Behave securely'. Our Security Culture was benchmarked in January 2018 using the Centre for the Protection of the National Infrastructure's Secure Survey resulting in a score of 76 per cent, improving on our score of 64 per cent in March 2016 and 52 per cent in 2014. For the first time we exceeded the benchmark average for critical national infrastructure companies of 73 per cent.

### Financial performance

Our corporate scorecard assesses financial stewardship across three measures; financial performance excluding enhancements, financial performance for enhancements, and cash compliance. Whilst costs were higher than anticipated, they were much closer to the target this

year compared to previous years, mainly due to better planning and tighter cost control. Train performance continues to be an issue, with suicides and asset failures contributing to compensation to train operators costs as well as nearly £40 million resulting from the disruption caused by Storm Emma. Renewals like-for-like costs were higher than planned, notably in electrification and structures due to extra scope and contractor cost escalation.

More information about our financial performance can be found in [Annual Report and Accounts](#) and [Regulatory Financial Statements](#).

### Investment

Network Rail is undertaking a huge upgrade plan to deliver a bigger and better railway, with more trains, as well as enabling longer and faster train services through longer platforms and the electrification of key lines. Through 2017/18, we delivered seven of the top ten renewals and enhancement milestones, missing our scorecard target of eight. Out of these ten milestones eight were enhancements related, and of these, we completed six of the eight. Completion of London Bridge station and the Ordsall Chord contributed to this achievement.

As part of the Thameslink programme, the £1 billion transformation of London Bridge station was completed. Over five years, London Bridge station has been transformed by Network Rail, while remaining open for the 50 million passengers that use London's oldest station each year. The new concourse unites all 15 platforms for the first time and modern facilities make the landmark station accessible for all. There are two new entrances which connect the north and south sides of the station, while the completion of the five new platforms allow London Cannon Street services to stop once again at London Bridge station. The redeveloped station opened to the public on 2 January 2018 and was officially opened by HRH the Duke of Cambridge on 9 May 2018.

The first passenger service crossed the Ordsall Chord in Manchester on 10 December 2017 marking the completion of the centrepiece of the Great North Rail Project. It is a key link in the modernisation of rail services in the north of England, connecting Manchester's three main stations for the first time, as well as allowing for an increase in direct rail links between Manchester, Liverpool, Newcastle and other cities in the North.

During the Bank Holidays in May, enhancement work was completed as part of the Redhill station project including new platform, track and signalling that, together, allow additional splitting/joining of services, and removes conflicts between North



Downs and Brighton Main Line services. This has provided increased capacity at the station and provides greater flexibility to train services through the area and additional operational resilience to facilitate operation of the Thameslink timetable.

In Scotland the new station was opened at Forres on 17 October 2017, the first benefit passengers saw from the Aberdeen-Inverness Improvement Project. This will bring more commuter services into both Inverness and Aberdeen and shorter journey time. Works were also completed with the extension of the existing double track section at Elgin station to enable simultaneous train arrivals / departures and journey time improvements.

College Road bridge, Rotherham, was demolished and replaced with a new, higher bridge to allow electrification of the line which will power the Tram-Trains. Over the same weekend a new signalling panel at Woodburn signal box was also installed. When this project is complete passengers in South Yorkshire will be the first to ride on a Tram-Train in the UK and these connections will allow Tram-Trains to run seamlessly between Rotherham Parkgate into Sheffield city centre.

Over the August Bank Holiday period Network Rail undertook High Speed 2 (HS2) preparation and enabling works at London Euston station where a significant 11kV power supply was replaced and rerouted ready for the clearance of the old London Euston Downside Carriage Shed by HS2 Ltd.

In the North-West, there was a 16-day closure while Bolton station was remodelled, as part of Phase 4 of the Great North Rail Project. Including remodelling the track, a new platform and a complete resignalling of the area. The blockade paved the way for future electrification and line speed increases on the route. The Manchester to Bolton electrification project works have faced delays due to poor ground conditions caused by unmapped mines and changes to engineering standards which have resulted in some reworking of designs. The recovery to timelines ultimately proved impossible, further compounded by the collapse of Carillion. This delay caused the whole timetable for the north to be rewritten. The System Operator (SO) took the lead, in collaboration with the train operator community, to develop viable options to mitigate the impact on the industry's ability to deliver a timetable to informed traveller timescales.

Electrification, line speed improvement and parapet works took place during a blockade at Bloxwich as part of the wider line speed improvement and electrification programme on the Walsall-Rugeley Trent Valley line. When the electrification work is complete, electric trains will be able to run from Birmingham New Street to Rugeley Trent Valley

and allow more frequent services and reduce journey times between Staffordshire and the West Midlands.

Liverpool Lime Street station reopened on 23 October 2017 after Network Rail completed a 23 day transformation of Merseyside's main station. The remodelling project was delivered as part of several projects in the Liverpool area to upgrade existing assets and improve transportation links. Engineers replaced more than 1,300 metres of track, built two new platforms and redesigned and lengthened other platforms all of which will help provide passengers with more seats on more trains in and out of the city.

Over the Christmas period over 32,000 colleagues delivered work on more than 260 projects across Britain. In LNW, our teams replaced track through platforms 13 and 14 at Manchester Piccadilly station, and completed track and signalling upgrades between Birmingham New Street and Wolverhampton. By completing these works, passengers will have a more efficient and reliable service.

At Edinburgh Waverley station the track through platforms 10 and 11 was realigned and a new track crossover layout was installed to increase flexibility of train movement through the station by allowing trains to move between the two lines. Platforms were also extended in preparation for new Intercity Express Programme (IEP) trains which will run on the East Coast Main Line (ECML). Track was also replaced between Waverley and Haymarket stations. Signalling and tracks were renewed and replaced at locations around Glasgow and electrification works also continued with new overhead powerlines and equipment installed on sections of the Stirling-Alloa-Dunblane route.

On the Midland Main Line (MML), more than 200 colleagues spent the Christmas period upgrading the concrete slab which supports the track through Kentish Town. The concrete slab was laid in the late 1970s and while routine maintenance had preserved it, major work was needed to continue to allow trains to pass through the area safely and reliably for years to come.

Christmas Crossrail highlights included the largest signalling data enhancement ever undertaken on Britain's railway at Old Oak Common and the approach to London Paddington station. Critical new points were installed at Ladbroke Grove and Royal Oak in west London. Commissioning of more than 100 driver-only operation cameras, piling for the new enhanced stations buildings and electrification work, including installation of overhead line equipment (OLE) at platform 2 at London Paddington station was completed.

**Highlights of 2017/18**

**Projects which completed their development stages**

**Transpennine Route Upgrade**

This investment will deliver faster and more frequent rail services with space for more passengers by improving connections between key towns and cities across the north of England.

Network Rail completed Single Option Development and presented these options to the DfT to agree how to unlock benefits.

**East West Rail Phase 2**

Phase 2 of the East West Rail Western Section will upgrade and reconstruct sections of line that link Bedford with Bicester, and Milton Keynes with Aylesbury.

Network Rail completed development work, which includes integration with HS2 designs in the Calvert area to maximise efficiencies and benefits.

**Bristol Temple Meads**

Planning work was completed in preparation for work to accommodate the forecast passenger growth up to approximately 2025. This will include changes to access and passenger circulation within the station. Provision will also be made for future platform lengthening, which may be progressed as part of the wider plan for the station

**Projects that were completed and entered into service**

**Edinburgh to Glasgow Improvement Programme – EGIP (Key Output 1)**

The project passed another milestone with the first electric test train running end to end on the main Edinburgh-Glasgow route. Once the project is complete, we will be running faster, longer, greener trains across the central belt. This will mean shorter journeys, more seats and more services for our customers, making rail travel more attractive than ever.

**North of England Programme – Ordsall Chord**

In December 2017, the first passenger train travelled over the 300 metres of new track, including the world's first asymmetric rail bridge. The chord has created a link between Manchester city centre's main railways stations for the first time, as well as enabling new, direct services to Manchester Airport station from the north.

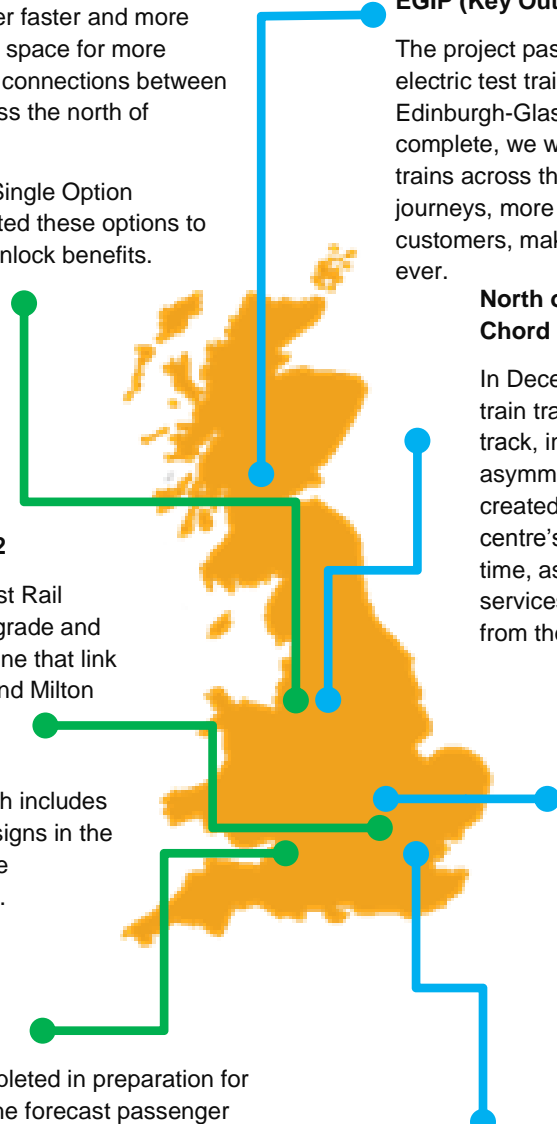
**Midland Main Line Programme – Kettering to Corby**

Passengers have begun using the newly commissioned track and signalling installed by Network Rail between Kettering and Corby. This marks the successful completion of this £130 million capacity project. The project has seen a significant amount of work carried out since construction began in 2014 to improve the capacity, speed and resilience of the railway between the two Northamptonshire towns.

**London Waterloo**

During August, a 24 day blockade was successfully completed. This paved the way for increased capacity through longer trains which have been running since December 2017.

London Waterloo works will conclude with the re-opening of the old London Waterloo International Eurostar platforms in December 2018, with additional train services being provided.



## Regulated milestones due in 2017/18

In this Annual Return we have used the March 2017 Enhancements Delivery Plan (EDP) as the baseline against which we are reporting our delivery of regulated outputs. EDP sets out the outputs, scope and key milestones for every key project that Network Rail is committed to deliver in CP5. An update to the EDP is published quarterly to reflect our ongoing delivery of the CP5 portfolio.

Network Rail's initial obligation for each project is to develop it to GRIP 3 (Governance of Railway Investment Project stage 3). In line with the agreements published in the EDP, once GRIP 3 is completed and funding is established, the GRIP 6 / Entry into Service (EIS) milestone is then set to be the regulated obligation.

Each milestone is assigned a status with the following definitions:

- **Regulated output** – a regulated milestone. For the Annual Return 2018 we are using the definition of a regulated output that is in line with that used in the March 2017 EDP.
  - GRIP 3: 'option selection' this stage examines the different engineering options available for delivering the project and selects a single option to be developed
  - GRIP 6: 'EIS constructing testing and commissioning' this stage focusses on the physical work associated with delivering a project, and ends with completion/ commissioning
- **Complete** – milestone completed on time
- **Missed** – milestone not completed on time
- **Revised** – milestone that has been changed through the regulatory change control process due to changes outside of Network Rail's control, or six months in advance of the milestone date.

Table 1 below provides an overview of our delivery of the regulated outputs milestones against the March 2017 EDP. Further detail of all GRIP 3 and GRIP 6 / EIS milestones due in 2017/18 is provided in the [Annual Return data tables](#)

Table 1

	GRIP 3		GRIP 6/EIS		All	
	No.	%	No.	%	No.	%
Complete	10	63	19	53	29	54
Missed	1	6	11	26	12	22
Revised	5	31	8	21	13	24
Total	16	100	38	100	54	100

Note: Huyton & Roby Phase 2 milestone was delivered two days late and therefore reported as missed.

## Enhancement Improvement Programme

The Enhancements Improvement Programme (EIP) was created to strengthen the processes and capabilities to develop and deliver major enhancements programmes and was completed in September 2017.

All aspects of the EIP contribute to improving Network Rail's capability to plan and deliver enhancements and Network Rail has monitored these improvements through project cost and schedule milestone performance. The embedment of the EIP has contributed to an improved schedule and cost adherence.

There has been improved overall schedule adherence during and after EIP, consistently remaining above the 80 per cent target, since Period 2 of 2017/18. Since the Hendy re-plan, Network Rail has successfully adhered to the cost forecasts of Hendy baseline for the CP5 England & Wales portfolio.

Network Rail currently uses a range of capability models to measure capabilities including the Portfolio, Programme and Project Management Maturity Model (P3M3), the Asset Management Excellence Model (AMEM) and the Risk Management Maturity Model (RM3).

Continued monitoring of delivery against cost and schedule outputs combined with monitoring outputs from the broad suite of capability assessment models will provide a comprehensive view of the improvements being driven through the embedment of the EIP alongside highlighting areas where there is scope for improvement.

During CP6, we will continue to monitor scorecard performance in relation to cost and schedule delivery. It will also be important to measure capability. This importance is recognised in One Vision One Way, an IP wide change programme designed to strengthen and improve the way IP works. A key focus of the programme is to robustly demonstrate our competence and the pipeline of progression for our people which will give our stakeholders increasing confidence in our capability.



During June 2017, Network Rail carried out an assessment of its project management capability in line with the P3M3. This has been benchmarked by Aspire and the assessment demonstrated that Network Rail has delivered significant improvement across all project management areas since 2014 (a score of 3.3 up from 2.4, out of a score of 5) and is significantly out performing both the database average and the transport sector average. Network Rail is now the global benchmark in two areas: management controls and resource management. Our programme integrated assurance is now a case study for best in class worldwide. Aspire has carried out 400 assessments in 100 different project and programme management companies worldwide.

## Asset Management

### Composite Reliability Index

In 2017/18 the Composite Reliability Index (CRI), which measures the cumulative improvement in asset reliability during the current control period, continued to improve reaching 18.1 per cent, which was better than our 16.5 per cent target. This improvement has been driven by a combination of benefits from the commencement of our Intelligent Infrastructure programme, targeted improvements in component design, for example weather resilience, and the introduction and training of both Network Rail employees and suppliers in 'Design for Reliability' techniques.

The largest improvement in reliability during the year has been in signalling faults, with a reduction of over five per cent in the number of failures. Signal reliability has worsened in recent years due to high failure rates of light-emitting diode (LED) signal components, used to replace conventional lamp bulbs, which were introduced several years ago. Following a detailed product and supplier quality review, a significantly enhanced version (Mk3 LED Light Engine) has been developed and approximately 6,000 units have been installed under extended trial product certification. This period has demonstrated the vastly improved reliability of the product and has also allowed some further product and sub-component improvements, prior to achieving full product acceptance in April 2018.

This collaborative development, focussing on product design to address known and potential failure modes, supported by an enhanced approach to manufacturing quality and testing, has demonstrated the benefits of Network Rail's strategic approach to product reliability. This is now embodied in the Design for Reliability approach to new products (mandated since 1 April 2017), ongoing engineering investigations to address reliability issues arising in existing products, and

further recognition of the important role of supplier quality assurance.

There were also improvements in signalling power-related faults, axle counter reliability following some installation issues and technical product improvements during the course of the previous year, and other component reliability improvements including signalling relays which have been subject to some design and manufacturing changes.

Overall points failures increased slightly in 2017/18. This reflects the hot summer and harsher winter weather and the greater challenge this creates, with the number of failures including with points heating. Underlying reliability of points, as well as track circuits, continued to improve, with the benefit of the continued rollout of remote condition monitoring as part of the Intelligent Infrastructure programme, which was extended to a further type of points, signalling busbars and track circuits during the year. In addition to extending the scope of monitoring equipment, improvements have continued in the process of diagnosing faults, responding to remote alarms and improved maintenance interventions, to ensure we deliver the maximum benefits from the capital invested in this monitoring equipment. The Intelligent Infrastructure programme will provide further improvements in 2018/19 with the introduction of predictive advanced data analytics and algorithms with trials of enhanced points and track circuit monitoring. In addition, to specifically address points reliability, a new more resilient points design, the NR60 Mk2 design, has been successfully trialled on LNE Route and will be further rolled-out.

The Intelligent Infrastructure programme also utilises train-borne monitoring. This includes Plain Line Pattern Recognition (PLPR) technology, which has been rolled out across the network to provide more consistent track defect identification and to help monitor degradation and intervention actions. In addition, Eddy Current crack defect monitoring has continued to be developed which is providing greater detail on rail defects to enable more accurate removal timescales for intervention, and a reduction in track incidents caused by emergency rail defects (usually requiring imposition of a Temporary Speed Restriction (TSR)). The latest development was deployed in December 2017 alongside an improved Rail Defect Management System (RDMS) upgrade, providing important engineering information on the condition of our rails to aid more accurate decision making capability.

Points reliability has also benefitted from the recent wide-ranging switches and crossings (S&C) improvement programme (including work with manufacturers, transportation arrangements and

installation), which has been followed up with the introduction of dedicated inspectors to check layouts prior to delivery and commissioning. A new track standard for installation of modular S&C designs has also been issued to improve the quality of installations and their reliability. For other newly installed asset types, an increased focus on post-implementation asset failures has also been implemented within our IP teams, including incident learning reviews.

While asset reliability has improved substantially in recent years, asset failures continue to cause a significant impact on train performance delivery. The most severe infrastructure equipment failure incidents during the year were:

- OLE failure on the West Coast Main Line (WCML) at North Wembley, London, causing significant disruption (28,446 delay minutes) over the following 48 hours whilst repairs were carried out. The failure was due to a contact wire fatigue in a neutral section, which is a known failure mode being mitigated through enhanced 'boro-scope' inspections. A modified lever arm design is being trialled on LNW route, which will be rolled out if successful.
- Intermittent signalling fault (track circuit failure) at Vauxhall on Wessex route, causing 15,806 minutes delay over seven days in December, before full rectification. The fault was caused by a loose connection on a traction return cable, with fault-finding complicated by the intermittent nature of the fault (only evident when trains were running), the location of the track connection and the distance from the immediate symptoms. The route is mitigating future risks of similar occurrences by sharing learning from the incident and through its reliability improvement process.
- Signalling power supply failure between Woking and Weybridge on Wessex route, causing 9,828 minutes delay. The fault was caused by a faulty power supply connection in a lineside location case. To avoid similar faults occurring in the future, the route has improved its focus on carrying out thermal imaging checks as part of location case inspections.

In addition, the number and impact of TSRs continues to be a concern both internally and to our stakeholders. The largest single type of track faults requiring speed restrictions are a geometry fault, known as cyclic top, which primarily affects freight trains. The average number of weekly speed restrictions has fallen since last year, both overall and for cyclic top, as we continue to address these concerns through the TSR summit working group, deployment of a decision support tool and focus on high-impact speed restrictions, including use of a

performance impact analysis tool. LNE & East Midlands achieved the largest contribution to the reduction in condition of track TSR service affecting incidents, and was an early beneficiary of this new decision support tool.

### Renewals

Our national scorecard measures our delivery against forecast of the seven key renewals volumes: track plain line, track S&C, signalling, underbridges, earthworks, OLE and conductor rail. At the end of 2017/18, delivery was above target for all seven of the asset types.

Robust plain line delivery saw volumes achieved that were 14 per cent higher than planned, with additional refurbishment units driving the strong performance. LNE targeted this worktype through its Critical Assets programme and other routes, principally Sussex and Western, undertook emerging work which bolstered national performance in this area. This was offset by an underperformance in High Output Delivery mechanism caused by plant reliability issues and loss of access in favour of other schemes.

S&C renewals were ten per cent ahead of target, with refurbishment works in LNE linked to its Critical Assets programme in Doncaster, York, Sheffield and Newcastle contributing to the wider favourable performance by an additional 42 point ends.

Signalling renewals volumes in 2017/18 were eight per cent favourable to target. A number of signalling renewals were commissioned in Period 1 in Motherwell and Yoker in Scotland, with further volume captured later in the year from the Scotland Area National Operating Strategy South scheme. Other key volumes included the Birmingham New Street Area Resignalling scheme and the North Wales Coast Phase 1 scheme in Wales.

The year-end outturn for underbridge delivery was 20 per cent above target, driven primarily by a prior year omission of waterproofing works on the Northern Hub coupled with additional interventions in a number of the other routes including Barry Island Viaduct in Wales.

Emergent works benefitted the majority of routes in respect of earthworks, with the full year performance 13 per cent ahead of target. The increase is broadly due to additional Soil Cuttings work delivered, and despite an evolution in the intervention types within the Embankments and Rock Cuttings assets, the overall volumes remain consistent with what was planned in both cases.

Delivery of OLE wire runs and conductor rail renewals was better than target for 2017/18. The resultant impact of enhancement works running

alongside the OLE renewals enabled Anglia to vastly outperform its delivery-risk adjusted baseline and this was further bolstered by strong performance in LNE where planned wire runs were inadvertently omitted from the budget.

### **Building longer term technical capability**

Extending the Research, Development & Technology (R, D & T) already exploited for asset management, our co-investment with British and European partners has delivered new technologies and products to support the sustainability of the Track asset and is working to build longer term capability and sustainability for all asset types through technology. These investments are creating jobs and strengthening rail's contribution to the economy, stimulating growth in the domestic market and supporting export potential by nurturing our world-leading reputation for technical leadership.

Our leadership role in the European Shift2Rail programme, currently our primary delivery vehicle for large scale R,D&T, delivered proofs of concept for system-engineered smart infrastructure and energy management through In2Rail, a collaboration with 54 partners across 14 countries. We have also progressed new capability such as Hybrid L3 European Train Control System (ETCS) train control to support the Digital Railway strategy for control of train movements and safe closer running of trains. These developments will drive up future performance and bring down the future costs of running the railway.

The number of challenge statements published on our website doubled in 2017/18 to cover 50 areas across assets, maintenance, safe operations and the environment. This is a crucial step to further open up Network Rail to supply chain innovation.

### **Information Management**

Information is one of our greatest assets and is linked to everything we deliver, from track maintenance to timetables, and it's a vital component to our success. Recognising the importance of information, we have established an Information Governance team to improve our suite of information management policies, guidance and tools, and professional competencies; this shall improve the way information is viewed and managed across the organisation.

We have also established a network of Information Risk Owners who are responsible for managing information risks and their associated mitigations. These senior members of staff are supported by Information Champions who have been tasked with promoting good information governance and disseminating guidance to colleagues, so that our

information is managed in accordance with regulatory and legislative requirements.

Good information governance helps us to make the right decisions, ensures resources are not wasted and increases trust, however, such benefits can only be achieved if we fully understand our information assets. We have made progress in developing an Information Asset Register to identify the information we hold, how it is used, its value and how it can be exploited. A test pilot for creating an Information Asset Register concluded at the end of 2017 and building on the outcomes of this we are planning to hold an information innovation event in the coming months, inviting industry experts to find a technological solution.

Unlike the traditional approach to the creation and maintenance of an Information Asset Register, we envision a product that will contain dynamic data that will not only provide clarity on our information assets but will also help positively inform our decision making and help us to comply with data protection legislation, including General Data Protection Regulation (GDPR).

Exploiting good quality data drives innovation in our industry as demonstrated through our sponsorship of Hacktrain's fourth RailTech conference and 48 hour Hackathon event during November 2017. One of the winners of the Hackathon developed a working prototype of a performance dashboard using data from our projects. This innovative product's aim is to enable the ORR to make better use of its manpower by targeting projects where the data highlights potential issues. Another winner's prototype was developed with our Information Security team to use block chain technology to alleviate cyber security concerns. We are actively supporting the winning teams to further develop their prototypes.

### **The Asset Management Excellence Model**

The AMEM measures an organisation's asset management capability by assessing its maturity in a range of core activities. A score of over 70 per cent is required to reach the 'excellent' category. Network Rail has a regulated target to reach 72 per cent by 2018. A higher percentage indicates a better performance. In August 2016 Asset Management Consulting Limited (AMCL) carried out an interim AMEM assessment to test whether Network Rail was on course to achieve the regulated output halfway into CP5.

AMCL carried out a follow up assessment to calculate the measured progress made to January 2018. This assessment confirmed an overall group average of 72 per cent. (The necessary level to confirm excellence even when variation allowances



are factored in). A score is provided for each of the six subject group areas of Asset Management shown in table 2. Any score above 70 per cent is recognised as 'excellent'. The six subject group areas and the scores achieved are:

Table 2:

Subject	Score
Asset Management Strategy & Planning	74.8%
Asset Management Decision Making	69.7%
Lifecycle Delivery	70.8%
Asset Information	74.0%
Organisational & People	69.5%
Risk and Review'	72.7%

We have made strong progress in every group and the range of absolute score noted for each group has tightened from previous exercises. One challenge surrounding devolution is the degree to which embedment at route level is being seen. The review has confirmed that strong progress is being made at route level in applying integrated strategic and route asset management planning.

### Asset Data Quality

Asset Data Quality is assessed using confidence grading for data reliability and a grading for accuracy and completeness. Data reliability represents the process and governance for producing data from 'A' (best governance) to 'D' (poorest governance). Ahead of CP5 our data quality scores varied markedly across the assets from B2 to D5. Today we are at A2 for the regulatory data specification for track, operational property, signalling, earthworks and structures. While large parts of electrification & plant and telecoms are also at A2, a number of attributes are not at present. Accuracy and completeness is reported using a number of data checks:

- Completeness check – is there a field in the master source system to store the relevant attribute data?
- Validity check 1 – is the data populated in the master source system and field?
- Validity check 2 – does the data pass system acceptable rules?
- Validity check 3 – does the data pass attribute specific business rules?

Our approach to managing the quality of our data is to treat data as an asset which is maintained and renewed according to network-wide assurance standards. This enhanced asset data quality management system is aligned with best practice, such as ISO8000. We have rolled these assurance

arrangements out to all our routes, where the accountabilities are being discharged through asset management teams within routes. An expert data community meets each period to share learning and support improvement. This includes an Asset Data Governance action plan. The above improvements are being undertaken as business as usual to enable Network Rail achieving A-grade governance. This enables organisation wide commitment to:

- understand gaps and risks that exist against the framework, and have a prioritised plan to address them
- make decisions based on known and agreed business risk profile
- act to manage unacceptable levels of business risk.

### Engineering

The first of the next generation Supervisory Control and Data Acquisition (SCADA) Traction Power Centralised Management System (TPCMS) systems went live at Romford during the year, providing secure and efficient electrification system management and control. Due to the obsolescence risks associated with the incumbent safety critical legacy systems, the installation at Romford provides the springboard for the national TPCMS roll-out which is now progressing throughout 2018-19 and beyond.

2017/18 also saw the transformation of Network Rail's standards, with the 400 most critical standards now updated and a new process launched in partnership with the wider rail industry to open Network Rail's engineering standards up for challenge to ensure they constantly represent good industry practice and improve safety, performance and efficiency.

The new single engineering competency framework for all Network Rail engineers was also launched, covering specific technical competency requirements as well as systems engineering and asset management. This enables areas of development and capability risk to be actively managed to reduce risk and non-conformance re-work as well as providing a transparent career path based on competence for all engineers. The competency framework is also supported by the Technical Fellowship scheme which recognises the very best technical experts throughout the company enabling their expertise to be shared through mentoring and expert peer review.

A number of our Research and Development programmes were also realised onto the live network, including Intelligent Infrastructure technologies, the use of unmanned aerial vehicles (drones) for structure assessment, hybrid level 3

ETCS (moving block) signalling trials, asphalt track and avoidance of bridge reconstruction technologies. Almost 50 'challenge statements' have now been published on the Network Rail website outlining for industry and universities what engineering problems we need technology research and development to solve, as well as the potential size of the prize for doing so.

### Station Stewardship Measure

The Station Stewardship Measure (SSM) represents the average condition of stations where Network Rail is the operator or landlord, in each of the station categories A to F in England & Wales, and across all station in Scotland. Scores represent the percentage of remaining life according to the following scale:

- >76% = 1
- 46-75% = 2
- 16-45% = 3
- 1-15% = 4
- 0% = 5

Lower SSM scores indicate better station condition. Performance against the current SSM measure remains positive. For all station categories, targets have been surpassed.

### Offering Rail Better Information Services

The Offering Rail Better Information Services (ORBIS) programme is a seven year transformation programme, changing the way asset information is collected, stored and utilised. The programme is designed to place quality data at the heart of our decision-making, to deliver better, safer and more efficient ways of working.

The Final Determination for CP5 identified a number of milestones within the ORBIS programme that are assessed as regulated outputs. For each regulated output, critical sub-milestones are agreed and tracked to build confidence in delivery to schedule. Regulated outputs are managed as part of the ORBIS Governance Framework, the status of each one is tracked and reported through the ORBIS Periodic Business Review and reported to ORBIS Programme Board on a periodic basis. To date, all the ORR regulated outputs have been completed, with the exception of 'Asset hierarchies established and Ellipse designated as master system for Civils' which was due in June 2016.

### Civils Strategic Asset Management Solution

The Civils Strategic Asset Management Solution (CSAMS) will provide strategic asset management capability for the civils community. It will create one trusted data source across Network Rail's civils infrastructure, replacing numerous legacy systems,

including the civils asset register and more than 20 other core systems, 90 data sources and one million documents. The result will be a consistent way of maintaining civils asset management, and the transition to new and better ways of working will give the civils business community the streamlined, up-to-date data needed to make better, more informed decisions.

Following delays in the upgrade of Network Rail's core asset management system, the CSAMS regulated output in June 2016 was missed. A single deployment plan for CSAMS was agreed, for November 2017, to deliver the regulated output. The evidence for completion was agreed with the ORR. This date was also missed and remedial plans provided have been assessed internally as undeliverable. Network Rail is working closely with the supplier to deliver the current contracted scope.

A briefing note has been issued to route managing directors and directors of route safety and asset management which outlines the CSAMS completion strategy. This will focus on implementation of interim initiatives to ensure we mitigate the risks associated with the current outstanding safety recommendations whilst we work with the supplier to ensure the full contracted scope under the fixed price agreement is delivered at a time still yet to be confirmed by the supplier.

### Geography and Infrastructure System

The Integrated Network Model (INM) is the replacement solution for the Geography and Infrastructure System (GEOGIS) master asset register for track and is a shift in capability for Network Rail. It replaces the legacy system with a modern web-interface and geospatial representation of the network. It combines the Network Data Model (NDM), plain line track information along with Ellipse S&C data into one consistent solution. This represents an entirely new and improved way of working for Network Rail to manage track information. INM went live in July 2017, and all GEOGIS data was frozen from August 2017 followed by the Business Go-Live and deployment in November 2017. Due to the complexities of the solution and the new ways of representing the track data, it was agreed with the routes to have an extended period after INM went live to have GEOGIS frozen and read only. This enabled the routes to have the opportunity to fully embed new ways of working, by being able to check any data discrepancies against the legacy system and to make certain all new periodic and annual processes work as requested and designed according to specification.

## Network Capability

For the first time our network capability information has been extracted from the Integrated INM which uses the Network Data Model (infrastructure derived from aerial survey) as its base, rather than GEOGIS which has historically been the source for capability data. Track sections in the network data model are more accurately measured than the legacy GEOGIS system and therefore there are small variances in the data indicating track mileage and layout. Although the majority of the variations are of less than ten yards, our routes have been working through the year to review any more significant differences and verify the data in INM.

As well as the introduction of a more accurate reporting system, we are working internally to review our processes and controls around the provision of information to external stakeholders. We have launched an improvement programme to introduce more effective controls in the Network Change process, which has an impact on the Network Capability information that is available to external stakeholders through the formal Network Change process and the sectional appendix. We will continue to work with the industry through the Network Capability Steering Group to assess processes, identify any issues and agree recommendations to resolve them.

## National Performance

### Passenger

Public Performance Measure (PPM) is the percentage of trains arriving on time at their final destination. 'On time' in this instance means within ten minutes of scheduled arrival time for long distance services, and five minutes for London and South East and regional services. PPM is measured for all passenger trains across the network, whatever the cause of delay or cancellation. A higher result represents better performance.

A train is counted as being Cancelled and Significantly Late (CaSL) if it is cancelled (at origin or on its journey), the originating or terminating station is changed, it fails to make a scheduled stop at a station, or it arrives at its terminating station 30 minutes or more after its scheduled arrival time. A lower result represents better performance. CaSL is not a regulated measure for Scottish train operators (including Scottish trains which operate on the English network).

Some of our route scorecards also include other measures of passenger train performance. These are part of a suite of measures being developed to provide more transparency of train performance data. These measures are published on [the Rail Delivery Group's website](#).

Year on year performance in England and Wales for both PPM and CaSL improved by 0.1 percentage point from 2016/17 to 2017/18. This is the first year that we have seen an improvement in PPM in England & Wales since 2011/12.

		2016/17 actual	2017/18 forecast	2017/18 actual
PPM (%)	England & Wales	87.4	90.0	87.6
	Scotland	90.3	92.0	89.5
CaSL (%)	England & Wales	4.0	3.0	3.9

The industry assigns a cause to each delay as it occurs, in order to understand trends and provide insight into what can be done to avoid similar delays in the future. PPM and CaSL are industry measures which are affected by three core elements; Network Rail infrastructure and operational issues, train operator rolling stock and crewing issues, and external impacts (including trespass, theft, terrorism and weather) which are managed by Network Rail on behalf of the industry. In 2017/18 just over half of the services to miss our PPM target did so due to issues categorised as Network Rail causes, including external incidents (56 per cent) and the remaining were categorised as operator causes. Overall train performance in 2017/18 has been below the level we set out to achieve. A number of factors influenced PPM during 2017/18; these included Network Rail asset reliability, operational issues (such as planning of the timetable and management of the train service on the day), train operator rolling stock and crewing issues, and third party impacts which are managed by Network Rail on behalf of the industry. Performance also reflects the challenge of delivering consistent performance on one of the busiest railways in Europe whilst maintaining and improving the aging infrastructure.

Network Rail forecasts the performance in each of the delay categories during the year, aiming to reduce the number of incidents which occur by monitoring the cause, the impact on train service and identifying improvement actions. The largest absolute variances to forecast for delay attributed to Network Rail were in network management and external incident categories, while asset reliability continued to improve and was better than forecast. Fleet delays (when the train is unable to operate due to mechanical issues or is unavailable for service), which are attributed to operators, were also a major contributor to overall performance with two thirds of operators missing their forecast.

Network management includes planning of the timetable and our daily operation of the network. It is an issue which is becoming more of a challenge as the network becomes increasingly busy, with the

worst impact seen in commuter areas in and around London and other major cities. In the last 12 months over 1.7 billion passenger journeys were made, doubling the amount taken twenty years ago. One third of all delays attributed to Network Rail are categorised as network management, which often comprises many smaller delays across a high volume of incidents. This was the category of delay that was the furthest adrift of forecast in five of our eight geographic routes. High volumes of such delay can make it difficult to investigate and determine the specific cause for every delay, reducing our ability to identify and target interventions on the most significant root causes of delay. While there has been a reduction in this un-investigated delay there is more we, and our industry partners, can do to improve this. We continue to review and refine the industry's delay attribution processes.

External delays have increased in 2017/18. The biggest impact was seen on the LNW and Wales routes, where around one in five delays were caused by external incidents. Trespass and suicide have increased over the year, but we are working with our frontline employees and industry colleagues to improve our prevention measures. Our award-winning 'Small Talk Saves Lives' campaign is central to this, and forms part of a larger industry-wide suicide prevention programme. Across several of our routes, fatality prevention patrols have been introduced and fencing enhancements are planned. We also took action to close stations in response to terrorist attacks at the Manchester Arena and London Bridge, which impacted train services for many passengers.

Autumn proved to be challenging across the network, partly as a result of the autumnal weather conditions starting earlier than recent years, and partly due to the impact of storms towards the end of the season. Severe weather events late in 2017/18 including Storm Emma resulted in a number of service cancellations. The industry worked together to provide train services for passengers for as long as possible, but as was the case for other transport providers on occasions we had to reduce or limit journey opportunities. Network Rail led 'Season Reviews' with passenger and freight operators which identified improvements required in our planning and operational decisions at times of severe weather disruption, and actions to ensure that the plan is clearly communicated to all parties. This is expected to improve management of the train service during bad weather and better enable us to keep passengers informed.

The reliability of our infrastructure was better than forecast during 2017/18, and particularly strong in

South East, London North Eastern & East Midlands, and Anglia. Asset reliability is vital to consistently delivering a punctual train service. A key focus is to reduce and prevent disruptive incidents wherever possible. Network Rail has introduced Remote Condition Monitoring (RCM) and Intelligent Infrastructure, which give our engineers early warning of when an asset is approaching an operating condition where it may fail. This gives us the opportunity to proactively replace or repair the asset prior to it impacting the train service.

Overall, delay has continued to rise because of reactionary (or knock-on) delay that we see from incidents, in part caused by the increase of train services and passenger numbers. Our efforts have been focused on improving response and recovery times. This has included the relocation of response teams to provide greater geographical coverage in the areas where they are most needed and improved incident management, working with industry colleagues through our new Incident Officer organisation. Making these changes across all of our geographical routes has allowed us to deliver a reduce Network Rail attributed delay minutes of 162,000 this year. This has helped to stabilise the recent trend of increasing reactionary delay.

Fleet is a key area in which we are supporting our industry partners to deliver improvements. The industry invests heavily in new and cascaded rolling stock to deliver the improvements that passengers demand. We work extensively with operators to prepare our network for such changes, collaborating on test journey runs, and considering how new train introduction will impact recovery during times of disruption.

Aligning performance goals and recognising the decisions that need to be made balancing performance with capacity, journey time and cost are key to ensuring the best outcomes for passengers. The development of balanced scorecards has helped focus the attention of industry colleagues on the priorities for passengers, and avoid the tensions which can arise from misaligned targets. The benefits of joint Network Rail and operator teams working to agreed, aligned objectives, can be seen in the results for Govia Thameslink Railway (GTR) and Southeastern, which have seen the largest improvement in PPM during the year. GTR delivered year-on-year performance improvement in all but the last four weekly period of 2017/18. A similar level of performance improvement has been delivered for Southeastern which has achieved a significant turnaround through a collaborative focus on addressing every minute of delay.



Newly introduced Route Supervisory Boards will help provide focus for operators and Network Rail working more closely together and meet customer expectations for service delivery. Where we have joint teams working closely together we have seen the largest year-on-year improvement in performance, such as those between Network Rail and Southeastern and GTR The ScotRail Alliance commissioned a report to identify joint actions that can be taken to recover and improve delivery and these will form the basis of a new strategic plan for 2018/19 and beyond. We can deliver such improvements in other areas of the network that also demand them, and our emerging plans are designed to achieve that outcome.

Some of our route scorecards also include other measures of passenger train performance. These are part of a suite of measures being developed to provide more transparency of train performance data. These measures are published [here](#).

### Freight

The Freight Delivery Metric (FDM) measures the percentage of commercial freight trains that arrive within 15 minutes of booked arrival time, or with less than 15 minutes delay caused by Network Rail or a non-commercial freight operator. We achieved 93.5 per cent, meeting our scorecard target and exceeding the regulatory output of 92.5 per cent.

The poor weather during Period 12, including Storm Emma, highlights that FDM is very susceptible to major delay events. During the poor weather over 350 cancellations and service variations were recorded, all of which are counted as FDM failures, compared to around 100 in a typical period. The poor weather affected all modes of transport including end-user customers. London Gateway, Felixstowe and Southampton all had to suspend ship-to-train transfer operations for some time.

The following week, a road vehicle collision with a train on a level crossing on the Felixstowe branch caused significant damage to signalling equipment requiring the suspension of passenger services and an 80 per cent reduction of planned freight services for four days. This single incident caused over 100 FDM cancellations and service variations. The result of these events was a FDM outturn significantly lower than recent years.

### Network Availability

The principal measures of the availability of the network to run trains are the Possession Disruption Indices for passenger (PDI-P) and freight (PDI-F). Following franchise changes in 2015, the Network Availability Reporting System (NARS) was unable to report PDI-P figures between April 2015 and February 2016. Throughout CP5 train service codes

have been divided amongst service groups and subsequent weightings been re-distributed, adversely affecting the figures produced. PDI-P ended 2017/18 at 1.53, significantly higher than expected when the original forecasts for CP5 were made. However, service group changes resulting from changes to franchises mean that this outturn is unreliable, not representative of our performance and not comparable with the regulatory targets that were set by the ORR before the start of the control period. We do not believe that PDI metrics are now a reliable indicator of network availability. Furthermore, PDI measures are not used by our business to inform possession planning decisions and we are further aware that PDI is not a measure that is valued by the industry.

PDI-F ended 2017/18 at 1.00, slightly lower than the end of 2016/17 when 1.05 was reported. A steady trend was seen throughout the year with a high of 1.05 and a low of 0.99.

Following discussions with the ORR, we will continue to report PDI-P until the end of CP5 for regulatory purposes, recognising that there are fundamental weaknesses in the measure. We consider that it is likely that the PDI-F calculation has similar issues to PDI-P.

### Early warning indicators for Network Availability

Given the unreliability of PDI-P we are monitoring and publicly reporting early warning indicators. We believe this will provide assurance to the industry in the absence of reliable PDI data that Network Rail is continuing to work within the spirit of the ORR's requirements around network availability as set out in the 2013 Final Determination.

- The level of access disputes escalated to the Access Disputes Committee (ADC) through the engineering access planning process, or after the Confirmed Period Possession Plan (CPPP). This assesses whether the access planning processes are working as they should.
- The number of late notice changes to possessions. This assesses the number of changes to the published timetable which impact passengers journeys plans.

Events during the year contributing to network availability indicators have included week 22 Informed Traveller being non-compliant for all possessions for Virgin Trains West Coast Sunday-Tuesday and Saturday for London Midland, a burst water main at Moses Gate and the extension of the Waterloo Blockade for the last day of the work from Platforms 1-6 to 1-10 which changed the entire possession. Work at Maidenhead, Gospel Oak to Woodgrange Park Junction, Charing Cross/Cannon

Street & New Cross/Lewisham, the Gospel Oak and Stansted area, blockades around the Ordsall Lane and most recently for the Great North Rail Project (Bolton Corridor) also affected the figures.

## Locally driven measures

### Passenger Satisfaction

The [National Rail Passenger Survey](#) (NRPS) collects passenger opinions of train services from a representative sample of journeys. Transport Focus commissions the survey twice each year in spring and autumn. Our route scorecards measure passenger satisfaction within the route.

### Reduction in Railway Work Complaints

Around five million people's homes either back on to or face the railway, while 22 million people live or work less than 500 metres away from the railway. We receive both positive and negative feedback from these communities and people that we come into contact with.

Each of our geographic route scorecards measures the reduction in railway work complaints compared to the previous year. As well as this, customers and routes have agreed on other measures of performance to be included in the scorecard. As these vary dependent on customer and route priorities, they cannot be individually categorised and are represented on the national scorecard as 'other'. Full details of performance for all locally driven measures are included in the route scorecards below.

## Customers and communities

Our national helpline is the central point for all contact from the public. We encourage all types of contact, positive or negative. Contact by telephone to our helpline, which is open 24 hours a day, has consistently been the most used method of contact in 2017/18. In recent years we have introduced more ways to contact us. The new interactive web portal and live chat service have proved very popular with our customers with 7,420 web contacts and 15,537 live chats in 2017/18.

Contact through Twitter has continued to increase since we launched our service in 2012 and it is now recognised as a customer service channel in its own right. When compared to 2016/17, we had 19,160 new followers at the end of 2017/18, and the number of mentions has increased by over six per cent.

In 2017/18, to improve our customers' experience we significantly changed our Interactive Voice Response (IVR) system. The newly-simplified IVR includes four options, three of which will then direct callers straight through to our contact centre

employees. The fourth option contains messaging about train times and ticketing that redirects the user to more appropriate sources of information within other areas of the industry.

Offering a personal, efficient customer service experience is essential to improving our service standards and our reputation. In 2017 this was recognised at the Top 50 Companies for Customer Service Awards where Network Rail was awarded best performer in the public sector.

Over half of the enquiries and complaints were handled by our helpline on the first contact to Network Rail during 2017/18. The majority of centrally closed contacts are requests for information and queries relating to one of our managed stations.

Of the 125,650 contacts received into our central team, 31 per cent were allocated to the appropriate route for action. Consistently, the highest volume of contact was related to our managed stations – Edinburgh Waverley station received the most contact, 14 per cent of total. This covered a variety of contacts, from train times to train assistance.

Aside from non-Network Rail issues and information requests the category that we are contacted about most is 'railway work'. The majority of railway work complaints are noise related notification and worker behaviour complaints.

Reducing railway work complaints is a scorecard target for all of our geographic routes in 2017/18. Performance in this area has been excellent with all eight geographic routes exceeding target. Over the last two years Network Rail has also reduced the amount of complaints that we receive about our work by nearly 4,000, a 41 per cent reduction.

Routes have embraced the challenge of reducing railway work complaints and the reduction has been achieved by introducing a code of conduct to set clear standards on how we expect our suppliers to work and behave when they are working for us. This has been delivered through a programme of service training. New notification processes have been introduced to simplify and ensure our lineside neighbours affected by work are communicated to before the work starts and thanked for their patience.

We are also committed to improve the time we take to respond to our customers when they make contact with us, with a target of resolving or responding to their enquiries within 20 working days. Six of our eight geographic routes exceeded this target in 2017/18, Wessex and LNW failed to meet this target.

## Sustainable Development

At Network Rail we have a sustainable approach to what we do and we are keen to always understand how our activities affect the environment locally as well as globally. At the same time, we drive social responsibility and actively seek to reduce community risks and maximise opportunities to create social value.

In 2018 we launched the Responsible Railway Plan, our vision of a 'Railway Fit for the Future' and worked to integrate sustainable development into CP6 Strategic Business Plan and operational business processes.

### Environmental impact

As one of the largest landowners in the UK, our potential impact on national biodiversity is significant. With over 20,000 miles of track, and trees growing along the railway, managing vegetation is hugely important to us. If not managed well, trees and fallen leaves can pose a serious risk to the safe running of the railway. We have reduced the number of incidents of large trees falling on the railway by 50 per cent over the last four years, but despite these efforts, last year, we still recorded over 400 incidents of trains colliding with fallen trees and branches and another 1,000 where fallen trees and branches caused delays to service. Such incidents can be serious and have the potential to cause injuries to passengers and employees or even derail a train.

Network Rail not only has a responsibility to run a safe and reliable railway, but also has a duty to look after the habitats on our land and enhance biodiversity. Every year during nesting season (March - August) we curtail our vegetation management work and only remove trees that are a safety risk. Before we do anything we have our ecologists carry out a study of the area.

During 2017 we developed and published a biodiversity calculator to allow projects to record their impact on biodiversity, and demonstrate their commitment to no net loss – and in some cases net gain. This calculator will be used much more widely going forward and work is taking place to improve other tools, such as geospatial mapping, to better plan for ecological risks and opportunities.

In February 2018 we began work to introduce free water fountains in our managed stations to reduce the impact of single-use plastics. We saw the first facility at London Charing Cross station in March, and this has already saved up to 5,000 plastic water bottles. Free water fountains have been rolled out to a further four stations since then. This initiative will pave the way for similar facilities at all of the Network Rail Managed Stations with plans to have

facilities accessible to all in place by September 2018. This supports wider commitments to improve facilities at stations but also will have a positive impact on the environment by reducing the burden of single use plastic waste and making the rail industry a more sustainable and green environment.

### Energy and carbon

In 2017/18 we have reduced non-traction carbon dioxide emissions by over six per cent compared to 2016/17 and by more than 16 per cent since the start of CP5 in 2014.

A programme of strategic energy and carbon management is being implemented across the business to actively reduce energy consumption, a major contributor to our carbon emissions.

As part of our carbon management approach we have worked with our energy supplier for the traction network to ensure that for all power we do not generate ourselves, the electricity we use is matched by an equivalent amount from nuclear power, which is a low carbon source of generation. This is in line with the criteria laid down by the World Resources Institute (WRI) for 'market based' calculations in its new guidance on reporting emissions and helps further demonstrate how we are committed to keeping up with global best practice in carbon management.

During 2018/19 we aim to improve our alignment with the 'Carbon Management in Infrastructure' standard. We will develop a maturity matrix, conduct a gap analysis and implement an action plan to seek improvements in the leadership, governance and management of life-cycle carbon across our infrastructure carbon value chain.

### Weather resilience and climate change

Many rail assets are vulnerable to weather. Controls are in place to mitigate the impacts from weather-related events, ranging from speed restrictions during high temperatures and high winds to investments in improving the condition of high risk assets. However, the nature of weather, the scale and age of the rail network mean that impacts are still experienced.

Climate change will affect our understanding of risk by shifting historic patterns of likelihood and severity, thereby amplifying the impact of weather on the railway and making it more challenging to become resilient. Climate change is projected to alter temperature and precipitation and associated weather events such as storms.

We have been working to implement the 2017 Weather Resilience and Climate Change Adaptation (WRCCA) Strategy with a particular

focus on integrating climate change requirements in to policies, standards and processes.

In 2017/18 we have reviewed asset policies and standards to ensure consideration of weather conditions over the life of asset for renewals and enhancements, and we have developed a cost:benefit analysis tool to support decision making and business case development for resilience projects.

### **Waste**

Network Rail is a major producer of waste and generates a wide range of waste types including construction, demolition, commercial and hazardous wastes. In 2017/18, Network Rail generated 2.14 million tonnes of waste, of which 36 per cent was reused, 58 per cent recycled, 5 per cent recovered (for energy generation) and 6 per cent sent to landfill. The landfill diversion rate of 94 per cent falls just short of our target of 95 per cent.

### **People**

This year we launched the 20by20 project to improve gender diversity in Network Rail. The aim is to increase the number of women throughout the business from the current 16.5 per cent to 20 per cent by the end of 2020. This will be done through reviewing our policies, processes and practices including improvements in recruitment, progression, retention and inclusive facilities for everyone. We will also focus on increasing our outreach to schools and colleges with a specific drive to achieve gender balance in the graduate and apprenticeship schemes.

### **Social performance**

Sustainability at Network Rail is more than just environment – it's about our social performance too. It's recognising that running Britain's railway is more than just transporting passengers from 'A to B'; it is a vehicle for connecting communities, creating jobs, regenerating areas of social deprivation, and driving socio-economic growth.

In 2017/18 our social performance strategy has focused on integrating social value in to design plans, identifying ways to engage communities and be a considerate constructor during railway works, and making sure we leave a positive legacy for future generations.

We have an obligation to the British taxpayer to invest public funds in areas that add value to society, as well as look internally to drive a culture change that recognises Network Rail as a responsible business and a great place to work. In 2017 we developed a gap analysis to assist business units in creating action plans for improving their social performance.

In addition to this work, Network Rail continues to drive a culture of volunteering and charitable giving. This year we have increased volunteer leave by 73 per cent and seen almost 10 per cent of employees use their volunteer leave to support charities and local community groups. We have raised over £123,000 for our corporate charity of choice, Barnardo's, and supported their Employment, Training and Skills (ETS) services with careers advice and pre-employment support. In addition, Network Rail employees have donated an average of £45,000 to charity per month and passengers at our stations have donated a further £1.1 million through bucket collections.

### **Effluence discharge reduction**

The discharge of effluent from passenger train toilets onto railway tracks has been an ongoing issue for many years. The scale of the problem has significantly reduced in recent years as more modern train fleets have been introduced which are fitted with retention tanks that are emptied in train depots. Nonetheless there are still a small number of train fleets which are not fitted with retention tanks, which continue to be used beyond their expected life. Network Rail has been working closely with the three franchising authorities (DfT, Transport Scotland and Welsh Assembly) and has secured commitments that by 1 January 2020, no franchised operator will run trains which discharge effluent on the network.

### **Route Comparison Scorecard**

Our approach to scorecards has been essential in creating closer alignment between track and train. Every route now sets targets and priorities that are agreed jointly with train operators, and performance incentives for all of our employees are aligned to the needs of our customers. Moving from targets set by the ORR to targets set by our customers, allows us to align our objectives with train and freight operating companies. With our customers, we have agreed that to be successful we must focus on six key performance areas: safety, train performance, asset management, finance, investment and locally driven customer measures, which are underpinned by the capabilities of our teams and individuals. Our performance across these areas is closely monitored by our Executive Committee, Board and external stakeholders.

The route comparison scorecard shows each geographic route's performance in relation to their own targets. The targets on each route scorecard are developed in conjunction with stakeholders and each route will have different targets and priorities. Where there are multiple measures for categories these are 'rolled up' to form just one measure for the comparison scorecard.



# Route Comparison Scorecard

Safety	South East	Wales	LNE&EM	Wessex	Scotland	Western	Anglia	LNW
Lost Time Injury Frequency Rate (LTIFR)	0.517	0.377	0.653	0.500	0.383	0.413	0.668	0.536
Close calls raised	10,199	8,595	22,002	6,223	13,228	10,734	10,405	21,277
Close calls % closed within 90 days	87%	90%	79%	89%	81%	90%	86%	76%
Train Accident Risk Reduction Measures	100.0%	79.3%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Top 10 Milestones to reduce level crossing risk	8	9	10	10	9	10	10	10
<b>Financial Performance</b>								
Financial Performance Measure – excluding enhancements	13.1	1.0	(23.0)	(44.6)	(5.7)	(40.6)	(40.6)	(74.3)
Financial Performance Measure – enhancements only	43.1	0.0	27.2	(6.4)	36.8	(14.7)	(38.7)	(78.6)
Cash Compliance – Income & Expenditure	26.2	2.7	13.2	0.0	(2.3)	0.0	(14.7)	(72.7)
Top Investment Milestones	100.0%	100.0%	96.1%	100.0%	83.3%	90.0%	100.0%	75.0%
<b>Asset Management</b>								
Reduction in Service Affecting Failures	-0.5%	4.6%	7.1%	5.4%	4.8%	-0.1%	1.8%	-1.3%
7 Key Volumes	100.0%	100.0%	100.0%	100.0%	100.0%	99.6%	98.5%	97.5%
<b>Customer Measures</b>								
Train Performance	55.0%	33.3%	21.4%	15.0%	13.9%	18.2%	18.9%	8.0%
Level 2 Customer Scorecard	N/A	N/A	37.5%	N/A	N/A	50.4%	N/A	53.5%
Locally Driven Measures	71.7%	81.3%	56.8%	63.2%	59.0%	59.9%	52.4%	80.0%
<b>Route Scorecard Performance</b>								
Route Scorecard Performance	70.7%	64.8%	56.9%	53.4%	52.1%	48.3%	47.2%	37.1%

# Scotland

Safety	Worse than Target	Target	Better than Target	2017/18 Actual
Lost Time Injury Frequency Rate (LTIFR)	0.420	0.400	0.380	0.383
Close calls raised	6,450	8,600	10,750	13,228
Close calls % closed within 90 days	80%	85%	90%	81%
Train accident risk reduction measures	60%	80%	100%	100%
Top 10 Milestones to reduce level crossing risk	6	8	10	9
<b>Financial Performance</b>				
Financial Performance Measure – excluding enhancements	£(25)m	£0	£25m	£(6)m
Financial Performance Measure – enhancements only	£(34)m	£0	£34m	£37m
Cash Compliance – Income & Expenditure	£(7)m	£0	£37m	£(2)m
Abellio ScotRail Earnings Before Interest and Tax	£0	£5m	£6.5m	£1m
<b>Investment</b>				
Top Investment Milestones	60%	80%	100%	83%
<b>Asset Management</b>				
Reduction in Service Affecting Failures	4.0%	5.0%	7.5%	5%
6 Key Volumes	90%	95%	100%	100%
<b>Train Performance</b>				
Abellio ScotRail PPM	91.0%	91.7%	92.0%	89.5%
Abellio ScotRail Right Time Departures	80.0%	82.5%	85.0%	84.6%
Abellio ScotRail Cancellations	1.6%	1.5%	1.4%	1.8%
Caledonian Sleeper Right Time Arrivals	72.0%	75.0%	78.0%	75.1%
Freight Delivery Metric (FDM)	94.6%	95.4%	96.3%	94.6%
Delay Per Incident (DPI) Reduction	5%	10%	15%	-20%
<b>Locally Driven Measures</b>				
Performance Management Conversations	80%	90%	100%	90%
Passenger Satisfaction	83%	84%	85%	88%
Service Quality Incentive Regime Costs	£1.5m	£1.0m	£0.9m	£4.1m
Annual Stakeholder Survey	40%	50%	60%	59%
Complaints per 100,000 Customer Journeys	32	28	26	30
Railway Work Complaints	777	758	739	646

## Safety

Lost Time Injury Frequency Rate decreased for the third consecutive year, beating our target of 0.400 by 0.18. Workforce safety improvements have largely been driven by a thorough accident investigation process and the shared learning that is cascaded through the teams within Scotland route.

One of the biggest causes of lost time injuries to our workforce is involvement in road traffic collisions. The route went live in 2017/18 with the installation of Vehicle Speed Warning Systems to the entire road fleet. This has led to a significant downturn in the number of speeding offences and 'at fault' accidents amongst our drivers.

Scotland route achieved full compliance with the assessment process for the detection of HAVS in our workforce who regularly use vibrating tools. This will help reduce the possibility of new cases occurring in the workforce or the worsening of any existing cases.

The Scotland route developed, installed and commissioned a brand new variant of level crossings which offers full road closure at our locally monitored level crossings. This is especially beneficial where there are high pedestrian numbers. The project that developed this crossing has been nominated for awards in two categories in the annual Scotland Transport Awards. We closed six level crossings, fitted miniature stop lights to three level crossings and fitted overlay miniature warning lights to a further six crossings to offer accurate information to the level crossing user on the whereabouts of approaching trains.

We have met all requirements of the train accident risk reduction measure on our scorecard. There was one passenger train derailment caused by a landslip from outside the railway boundary at Loch Eilt between Glenfinnan and Lochailort. This incident is subject to a formal investigation.

There has been a reduction in the number of suicides recorded in the route this year with 13 against 23 in 2016/17. Additionally there have been six public fatalities related to trespass incidents. The route continues to review its suicide prevention plans and potential access points for trespass.

There has been a slight increase in Fatalities and Weighted Injuries at Edinburgh Waverley station but this should be considered in relation to an increase in annual station footfall from 28.9 million to 29.7 million. Both Glasgow Central and Edinburgh Waverley stations have been praised for their safety, with Edinburgh Waverley station receiving Secure Station and Safer Parking reaccreditation as part of the DfT scheme.

Glasgow Central station has reduced overall accident rates by 43 per cent in 2017/18. This has been down to increased employee focus on spillages and working with station partners to improve proactive reporting and repair of infrastructure faults. The introduction of concourse bins to reduce litter and liquids left on the concourse provides more time for our facilities teams to deal with spillages in a timelier manner.

## Financial performance

The overall FPM for 2017/18 was better than target due to a strong performance in enhancements versus the baseline costs. Financial performance was negatively impacted by both a dip in overall train performance and the negative impact of Storm Emma and the Beast from the East. In the area of enhancements there were revised cost assumptions for both Shotts and Stirling, Dunblane and Alloa electrification projects which gave a positive FPM result.

## Investment

Our programme of enhancements and expansion of the Scottish railway network continues with progress made across a number of key projects. This work will allow us to operate electric trains in the future to deliver an improved train service including faster, greener trains running at greater capacity and frequency.

The Edinburgh Glasgow Improvement Programme completed the electrification works of the Edinburgh to Glasgow via Falkirk High line and was energised for electric trains in October 2017. Electrification of the route allowing electric trains to operate has helped to improve journey times with the main benefits in capacity and journey time as the new ScotRail electric fleet is introduced during the year.

The Edinburgh Waverley station improvement works will increase capacity and operational flexibility at the station. The completion of platform 12 in December 2017 accommodates the new eight-car Class 385 electric trains that will be introduced later in 2018. The IEP is introducing longer platforms to the east of the station accommodating greater capacity from the ECML. The newly constructed Edinburgh Gateway station received the 'Building Award' at the Saltire Scottish Civil Engineering Awards. Demolition and construction works are underway to redevelop Glasgow Queen Street station.

The Aberdeen-Inverness Improvement Project celebrated the opening of the new Forres station as part of the work to improve capacity between the two major cities in the north of Scotland. Other work carried out included platform extensions, upgrade to the level crossing and signalling work at Elgin

The electrification projects to support the introduction of new electric trains from Grangemouth Junction through Falkirk Grahamston and Stirling to Alloa and Dunblane continue with preparatory work being undertaken including altering bridges, piling and installing masts.

The Highland Mainline celebrated the completion of the Findhorn Viaduct refurbishment with £4.5 million invested to improve the structure and ensure it is fit for purpose for future generations.

The 'Access for All' programme has delivered improved accessibility at a number of stations across the route, with new lifts, stairs and footbridges installed to enhance the facilities for people with reduced mobility.

### **Asset management**

Scotland route made good progress in reducing service affecting failures, bettering the composite reliability index target. Improvements have been driven through focus on the reliability of assets most critical to train performance through our delivery unit led asset improvement plans. Successes include the installation of new LED light engines, OLE reliability improvement work, and further use of Intelligent Infrastructure to identify potential failures and intervene prior to incidents occurring.

Scotland exceeded target for the six key renewal volumes on the scorecard. Successful signalling commissions were delivered as part of Yoker, the reconrol of four signal boxes to Edinburgh and Motherwell North schemes. Although falling slightly short of the year's delivery target, the high output element of our track renewals programme was more successful than 2016/17, with many lessons learned successfully implemented.

### **Train performance**

The ScotRail Alliance remains committed to continually improving the product we deliver for passengers. Since autumn 2017 we have struggled to maintain the consistent performance that passengers expect. We recognised that things needed to be done differently to achieve desired performance levels. An independent industry expert, Nick Donovan, was brought in to review how we manage train performance within the Alliance.

All areas within the Alliance have been reviewed and 20 recommendations have been put forward and accepted by Network Rail and ScotRail. A working group, including a project manager and sponsoring director, has been assigned to work on each recommendation and provide support during implementation. The recommendations will benefit passengers and end users in the near future, targeting the congested areas around Strathclyde,

particularly around the train plan, infrastructure reliability and seasonal preparation. Despite asset and fleet reliability improving, our output to passengers and end users is declining. The recommendations within the report identified that the Alliance needs to continue functional planning which is driving these improvements, while addressing cross functional systematic issues. There is now a focus across all functions, managed through upgraded performance management processes, on the resilience of the train plan and our recovery plan when incidents do occur. The review has also suggested improvements to right time starts at key stations across the network are reviewed regularly and will take place at Milngavie and Whifflet. We are also increasing our autumn treatment programme, doubling the number of miles covered in 2017, adding an additional 50 traction gel applicators and increasing our leaf fall teams from 11 to 15. The remaining recommendations have a clear project plan and will enable us to build a high performing sustainable network.

### **Locally driven customer measures**

Passenger satisfaction was better than target at 88 per cent. Focus has been given to improving customer signage with the introduction of digital onward travel screens at Edinburgh Waverley station to further integrate onward transport options. Initiatives to identify and address cleanliness in the public areas within Glasgow Central and Edinburgh Waverley stations have made an improvement to station upkeep and cleanliness which has positively influenced passenger satisfaction. The initiatives have been adopted by other stations across the network, which have reported similar improvements.

The number of complaints received in relation to railway work has reduced in 2017/18. This is testament to our community relations team who have increased engagement to ensure lineside neighbours are informed about engineering work.

These year two surveys were undertaken to assess key stakeholder perceptions of the Alliance. Ipsos Mori surveyed Members of the Scottish Parliament (MSPs) and for the first time Transform Scotland polled key stakeholders from the business community, civic society, local and regional government and passenger / rail interest groups. Among MSPs there was a marked improvement in scores over the year including familiarity (62 to 71 per cent), favourability (30 to 48 per cent) and advocacy (20 to 35 per cent). Amongst key stakeholders familiarity was 75 per cent and favourability 70 per cent. The combined favourability score for Scotland was 59 per cent, in excess of target. These surveys informed the 2018 Alliance public affairs plan.



# Anglia

Safety	Worse than Target	Target	Better than Target	2017/18 Actual
Lost Time Injury Frequency Rate (LTIFR)	0.550	0.524	0.498	0.668
Close calls raised	5,475	7,300	9,125	10,405
Close calls % closed within 90 days	80%	85%	90%	86%
Train Accident Risk Reduction Measures	60%	80%	100%	100%
Top 10 Milestones to reduce level crossing risk	6	8	10	10
<b>Financial Performance</b>				
Financial Performance Measure – excluding enhancements	£(15)m	£0	£15m	£(41)m
Financial Performance Measure – enhancements only	£(15)m	£0	£15m	£(39)m
Cash Compliance – Income & Expenditure	£(3)m	£0	£17m	£(15)m
<b>Investment</b>				
Top Investment Milestones	60%	80%	100%	100%
<b>Asset Management</b>				
Reduction in Service Affecting Failures	0.0%	0.5%	1.0%	1.8%
7 Key Volumes	90%	95%	100%	99%
<b>Train Performance</b>				
c2c PPM	94.9%	96.1%	97.0%	95.3%
c2c CaSL	2.0%	1.3%	1.1%	2.3%
c2c Right Time Arrival	72.3%	75.6%	79.2%	76.7%
Greater Anglia PPM	88.8%	90.5%	91.5%	88.9%
Greater Anglia CaSL	2.7%	2.5%	2.2%	3.3%
Greater Anglia Right Time Arrival	64.8%	68.4%	69.8%	65.2%
London Overground PPM	94.9%	95.3%	95.8%	94.4%
London Overground CaSL	2.1%	1.8%	1.6%	3.0%
London Overground Right Time Arrival	76.4%	80.0%	84.0%	78.2%
TfL Rail PPM	93.5%	94.5%	94.8%	93.4%
TfL Rail CaSL	2.9%	2.2%	2.1%	3.1%
TfL Rail Right Time Arrival	82.0%	84.0%	88.0%	80.1%
Freight Delivery Metric (FDM)	91.2%	92.6%	94.0%	93.1%
<b>Locally Driven Measures</b>				
Delay Per Incident (DPI)	10%	20%	30%	8%
Formal Performance & Development Conversations	80%	90%	100%	95%
Passenger Satisfaction	83%	85%	87%	83%
Railway Work Complaints	885	880	770	370
Crossrail East Milestones	4	5	7	6
Number of Temporary Speed Restrictions (TSRs)	30	28	25	21

## Safety

While we have seen some positive changes in our safety culture, we have not made the progress we wanted to in reducing the number of our people who are hurt while working on the railway in Anglia.

We have exceeded our target in raising close calls, positively highlighting hazards. However, too many people are involved in accidents and we are focused on reducing the number of people injured while working on Anglia route. We have recruited a director of safety and transformation and refreshed our health and safety plan, comprising of eight points focused around safety leadership to bring an enhanced focus to this important matter.

Work has continued on the three Transport and Works Act Orders aiming to close more than 100 level crossings across the route. All three are going through the public inquiry process.

A number of user-worked level crossings are now safer following installation of new technology warning of approaching trains. We have closed one of our highest risk crossings after installing a new footbridge at Trinity Lane in Cheshunt.

### Train performance

The past year has been challenging regarding train performance. While overall performance for all four lead operators was worse than forecast, c2c, TfL Rail and London Overground are all running more than 9 out of 10 trains on time. Greater Anglia (GA) and c2c are both achieving better performance than last year. For the first time in four years we have stabilised performance, halting a three year decline and our operators are some of the highest performing across the country.

We have made a considered effort to address asset failures to allow us to remove temporary track speed restrictions, which are both disruptive to freight and passengers, and costly to the business.

We hit our target to reduce the number of delays caused by infrastructure failures such as track faults and have installed new uninterrupted power supply units which will prevent problems we had with signalling earlier this year reoccurring in the future.

Anglia route has been impacted by exceptional weather events that have had a negative impact on performance. In May 2017 we recorded some of the highest temperatures for the time of year and had to impose heat related speed restrictions to maintain a safe railway. In autumn, some of the highest ever wind speeds were recorded in Ipswich, bringing down a number of trees and damaging the OLE. The 'Beast from the East' winter storm affected most of the network shutting off Anglia's rural routes

for several days until we could clear the tracks of several feet of snow.

A number of train operators' fleet issues have also caused delays, and we are working with them to reduce these incidents.

C2C performance was worse than target with 95.5 per cent PPM against a forecast of 96.1 per cent. Despite this, the operator remains one of the best performing across the country.

We struggled to deliver forecast performance for GA with only 88.9 per cent PPM (against a forecast of 90.5 per cent) running on time. The impact of trespass, managing speed restrictions caused by rail defects, and power failures have particularly impacted GA.

Performance was also worse than forecast for TfL Rail (delivering 93.3 per cent PPM against a forecast of 94.5 per cent). TfL Rail was affected by delays following works for the Crossrail programme.

London Overground achieved 94.4 per cent PPM but missed the forecast of 95.3 per cent. The route had a number of TSRs, which hampered performance, but the causes of these have now been addressed allowing the TSRs to be removed.

Delays caused by interactions with other train services on the East London Line also had a significant impact and the introduction of a remedial plan is reducing delays on that line.

### Financial performance

Operations and maintenance costs were in line with planned budgets. However, failure to meet train performance forecasts has impacted on our financial performance owing to the penalties we were required to pay to train operators for missing performance benchmarks.

The unexpected delays and additional costly work on the Gospel Oak to Barking electrification project contributed £39 million to our shortfall in financial performance.

### Investment

The last year has seen a number of improvements for passengers and rail users across the route, including the opening of a brand new station at Cambridge North. The new station has created much needed connections to the nearby Science Park and is expected to boost the growth of the local economy as well as attracting new housing and businesses. Located next to the A14 and A10, and with parking for 450 vehicles and 1,000 cycles, it is helping alleviate congestion on the roads and platforms of Cambridge City station.



Hackney Wick station on the London Overground route has been transformed with a brand new subway running north to south beneath the existing railway line, boosting station facilities and opening new pedestrian and cycle links through this urban area.

We completed the electrification of the 14 mile Gospel Oak to Barking route, the final London route to be electrified, and passengers and neighbours along the route will soon be reaping the benefit of longer, greener and quieter trains.

We recognise that there has once again been significant weekend disruption to services on the Great Eastern Mainline and on the Southend Victoria branch line, but this has allowed us to progress two vital projects that will bring significant benefits to passengers. We have continued our £295 million programme of OLE renewals and have removed the need for heat-related speed restrictions between Chelmsford and Ilford, which has caused many problems in the past. Our work for Crossrail is also progressing well as we get closer to enabling Elizabeth line services to run through central London to the west.

The Lee Valley Rail Programme, where we are investing £170 million to create more capacity on the busy West Anglia mainline is on track. The first panels of the new third track between Lea Bridge and Angel Road have been installed, and the new Meridian Water station in Enfield is starting to take shape.

Work has continued in two key projects in the north of our region. The £68 million investment to replace

the old mechanical signalling equipment with modern technology between Norwich, Great Yarmouth and Lowestoft is a vital aspect of our railway upgrade plan. We are also developing the scheme to deliver improvements to the Felixstowe branch line which will enable more freight trains to run and improve the reliability of passenger services.

#### **Asset management**

We have reduced the number of infrastructure failures that have an impact on train services by 0.9 per cent, delivering the expected volumes of work on our signalling assets, earthworks and underbridges. We delivered 100 per cent of the targeted volume of plain line track renewals. There was a small shortfall in delivering the forecast renewals for switches and crossings. This was in part owing to access constraints and refurbishment activities being more complex than initially anticipated.

#### **Locally driven measures**

We reduced the number of railway work complaints by 58 per cent on the previous year and exceeded our response timescale target, replying in an average of 16 days. Better pre-notification, liaison with areas where we were carrying out our most disruptive works and a worker behaviour programme have all contributed to this success.

We exceeded our passenger satisfaction target with 87 per cent of passengers in the Anglia region stating they were satisfied with their journey. We will, of course, always strive for more.

# London North Eastern & East Midlands

Safety	Worse than Target	Target	Better than Target	2017/18 Actual
Lost Time Injury Frequency Rate (LTIFR)	0.606	0.577	0.549	0.653
Close calls raised	14,250	19,000	23,750	22,002
Close calls % closed within 90 days	80%	85%	90%	79%
Train Accident Risk Reduction Measures	60%	80%	100%	100%
Top 10 Milestones to reduce level crossing risk	6	8	10	10
<b>Financial Performance</b>				
Financial Performance Measure – excl. enhancements	£(38)m	£0	£38m	£(23)m
Financial Performance Measure – enhancements only	£(43)m	£0	£43m	£27m
Cash Compliance – Income & Expenditure	£(11)m	£0	£54m	£13m
<b>Investment</b>				
TransPennine Route Upgrade: Top Investment Milestones	60%	80%	100%	100%
East Coast: Top Investment Milestones	60%	80%	100%	89%
Midland Main Line: Top Investment Milestones	60%	80%	100%	100%
<b>Asset Management</b>				
Reduction in Service Affecting Failures	0.0%	2.0%	4.0%	7.1%
Track Plain Line (Track km)	119	126	132	195
Track S&C (Point Ends)	168	178	187	242
Signalling (SEUs)	16.81	17.75	18.68	35.73
Underbridges (m <sup>2</sup> )	10,820	11,421	12,022	14,869
Earthworks (5 chain)	2,641	2,787	2,934	3,029
OLE re-wire and mid-life refurb (wire runs)	0	0	0	21
Conductor rail (km)	0	0	0	0
<b>Customer Measures</b>				
East Midlands Trains - Roll up of scorecard	0%	50%	100%	34%
Grand Central - Roll up of scorecard	0%	50%	100%	44%
Hull Trains - Roll up of scorecard	0%	50%	100%	39%
Northern - Roll up of scorecard	0%	50%	100%	35%
Virgin Trains East Coast - Roll up of scorecard	0%	50%	100%	48%
TransPennine Express - Roll up of scorecard	0%	50%	100%	27%
CrossCountry Right Time at Newcastle (Southbound departures)	85.0%	90.0%	95.0%	77.3%
CrossCountry Right Time at Leeds (Northbound departures)	68.4%	72.0%	75.0%	69.8%
CrossCountry Right Time at Doncaster (Northbound departures)	52.4%	57.0%	60.0%	51.0%
Nexus Metro Delay Minutes	18,178	17,178	16,178	12,654
Govia Thameslink Railway Great Northern Right Time	46.6%	48.8%	50.0%	55.5%
Govia Thameslink Railway Delay Minutes	283,964	279,292	266,734	185,709
Freight Delivery Metric	93.9%	95.3%	95.7%	95.2%
Performance Management Conversations	80%	90%	100%	100%
Railway Work Complaints	1,136	1,082	1,028	701



## Safety

Over the last financial year we have continued to exceed our forecast for raising close calls. We did not meet our forecast for closing close calls within 90 days and to address this we have introduced a process to create plans to close each close call and they are discussed within the senior management team weekly. This is having a positive effect and going forward we will be having a close call closure week every quarter where the senior management team will visit depots with the intent of supporting the responsible managers in closing close calls.

The beginning of 2017/18 saw a large increase in employees sustaining personal injuries resulting in time lost from work. This had a negative effect on LTIFR which led to us adjusting our forecast for the year and taking some focused actions to reverse the increasing trend. From Period 7 we have seen a 40 per cent reduction in lost time injuries resulting from work activities resulting in us achieving our re-forecasted LTIFR figure for 2017/18. This improvement has resulted from a combination of producing safety plans and focusing on addressing three key areas. These include the environment in which we expect our people to work, personal accountability, and leadership at all levels. The latter includes case managing each person who sustains any injury to make sure they are given an appropriate care package.

We are also embarking on initiatives to systematically eliminate manual handling duties as far as is reasonably practicable and to provide bespoke training for required manual handling activities. We are also working on improving access points. The actions are designed to reduce injuries resulting from manual handling and slips, trips, and falls which are our largest causes of accidents.

## Financial performance

Overall the route has delivered better than forecast FPM (inclusive of operations, maintenance, renewals and enhancements expenditure). This has included the delivery of renewals and enhancements expenditure totalling £940 million, compared to prior financial year of £788 million.

## Investment

The MML programme saw its first commissioning of the £130 million Kettering to Corby capacity project which was completed on time and to budget in February 2018. The programme continues to progress with stage works completed for Derby remodelling and the first electrification masts erected in the Kettering area. In partnership with Derbyshire County Council a new station at Ilkeston was opened for passengers in April 2017 and we have contracted with London Borough of Barnet to

complete the development of a new station at Brent Cross in support of their housing and growth plans.

Also, over the August bank holiday, works took place to prepare for the remodelling of Derby station. A 470 yard track renewal took place at Osmaston Road to the west of the station ahead of the full remodel in summer 2018. This will improve the asset reliability and drainage and provide a smoother ride over the section of renewed track.

The ECML programme successfully passed critical stage gates for four major DfT projects which now have the necessary investment approval to move on to the next phase of work. Three projects successfully completed in August 2017 to support the introduction of the new IEP trains onto the EMCL (National Grid connections, platform extensions and Power Supply Upgrade Phase One). There has also been some successful third party funded project delivery in the year including the rail connection to Rossington Inland Port, a large inland intermodal freight hub that has the potential to support 5,000 jobs.

A significant milestone was reached on TransPennine Route Upgrade with the submission of our proposals and options to the DfT in December 2017. The submission provided four different scenarios that could be implemented on the route, giving choices to the funder on a range of outcomes, schedule and cost. The submission is currently being reviewed by the DfT with a decision on next steps expected later in 2018.

## Asset management

Failure of OLE resulted in some of the most disruptive incidents to train services on the route. In response, resilience work has continued on ECML and we have been working with Virgin Trains East Coast to obtain a better understanding of the pantograph to wire interface. This has included using data from the pantograph cameras and an instrumented pantograph to understand forces. The learning from this work will better inform asset interventions, asset maintenance and management of the fleet.

The deployment of the tubular stretcher bars in accordance with the Lambrigg recommendations has brought with it improvements to safety and performance on our switches and crossings. Increased deployment of LED signal heads and the upgrade of the Signal Light Engines has significantly reduced asset failures on the signalling asset and a structured focus on TSR prevention delivered a substantial reduction in delay caused by track incidents. These programmes have been supported by increased use of predict and prevent technologies where the route has developed a

Control Centre dashboard system and tools to enable better calibration benchmarking across assets. Overall this resulted in a 7.1 per cent reduction in Service Affecting Failures within the year. The resilience of the network during adverse weather remains the most significant risk to asset performance and was apparent during the weather conditions experienced in the last quarter of the year.

Our asset management strategy continues to focus investment in the reliability and safety of our assets to improve train performance. In particular we have been preparing the infrastructure for the introduction of increased Thameslink services from early next year. This has included significant improvements to fencing and control of vegetation to reduce trespass and fatalities. Within maintenance we have focused on reducing the workbank backlog which is now at the lowest level it has ever been on the route.

Delivery of the key renewals volumes reported by our scorecard was better than forecast in 2017/18 for all areas. The work delivered this year has included the re-control of Huddersfield and Healey Mills on the Transpennine route to York route Operating Centre and renewal of the switches and crossings at the west of Newcastle station which we expect to deliver improved performance into 2018/19.

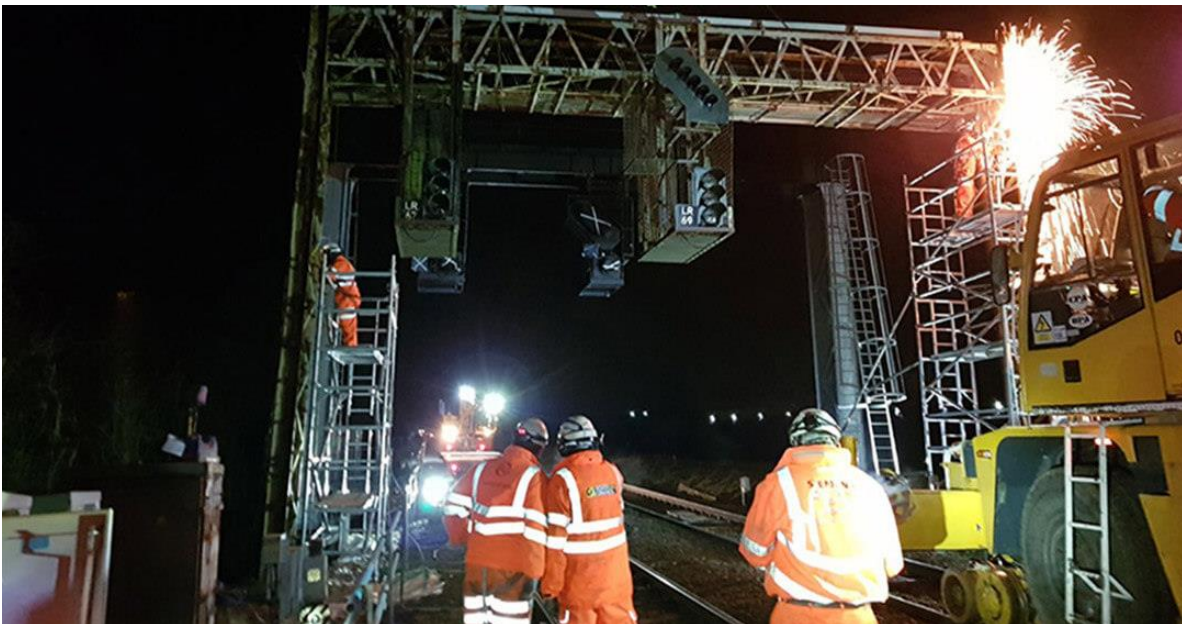
### Train performance

The impact of suicides on train performance has been significant for Northern, TransPennine Express (TPE), Grand Central, Hull Trains and Virgin Trains East Coast (VTEC). Suicide

prevention patrols have been implemented at the south end of the EMCL and a programme of lineside fencing enhancements is underway. This follows the very successful introduction of security patrols co-ordinated by a dedicated Network Rail funded British Transport Police inspector which has seen a 45 per cent reduction in delays caused by suicides for GTR.

OLE failures on the ECML have had a significant impact on Grand Central, Hull Trains and VTEC. Network Rail continues to invest heavily in OLE reliability with a programme of campaign changes to OLE assets and portalisation of headspan arrangements. Overall improving asset reliability for both Thameslink and Great Northern GTR services has had a positive impact throughout the year.

There have also been a number of external incidents that have impacted performance throughout the year. Performance for East Midlands Trains was impacted by the closure of Nottingham station in Period 11 due to a fire which was later found to be the result of arson. Performance for Northern and TPE was impacted by external events at Manchester stations. The earlier than usual start of autumnal weather conditions compared to recent years also affected performance, particularly for East Midlands Trains, from Period 8. Snow in Period 12 also affected performance across the route. We have plans in place that will allow us to start the Rail Head Treatment Train programme earlier in 2018 to address issues caused by autumnal weather.



# London North Western

Safety	Worse than Target	Target	Better than Target	2017/18 Actual
Lost Time Injury Frequency Rate (LTIFR)	0.586	0.558	0.530	0.536
Close calls raised	13,650	18,200	22,750	21,277
Close calls % closed within 90 days	80.0%	85.0%	90.0%	75.5%
Passenger Train Accident Risk Reduction Measures	60%	80%	100%	100%
Top 10 Milestones to reduce level crossing risk	6	8	10	10
<b>Financial Performance</b>				
Financial Performance Measure – excl. enhancements	£(35)m	£0	£35m	£(74)m
Financial Performance Measure – enhancements only	£(66)m	£0	£66m	£(79)m
Cash Compliance – Income & Expenditure	£(13)m	£0	£66m	£(73)m
<b>Investment</b>				
Top Investment Milestones	60%	80%	100%	75%
<b>Asset Management</b>				
Reduction in Service Affecting Failures	0.5%	1.0%	1.5%	-1.3%
7 Key Volumes	90%	95%	100%	97%
<b>Train Performance</b>				
Chiltern PPM	93.5%	94.0%	94.2%	92.6%
Chiltern CaSL	1.5%	1.4%	1.3%	1.8%
West Midlands Trains PPM	89.2%	89.5%	89.7%	87.5%
West Midlands Trains CaSL	2.7%	2.5%	2.3%	3.7%
Virgin Trains West Coast PPM	86.9%	87.4%	87.8%	84.2%
Virgin Trains West Coast CaSL	3.8%	3.5%	3.4%	6.3%
TransPennine Express PPM	89.0%	90.0%	90.3%	86.3%
TransPennine Express CaSL	4.7%	4.3%	4.2%	6.0%
Merseyrail PPM	95.4%	95.9%	96.2%	94.9%
Merseyrail CaSL	2.0%	1.9%	1.8%	2.0%
Northern on Time (West & Central)	66.0%	68.0%	70.0%	54.3%
Caledonian Sleeper (Right Time Arrivals)	72.0%	75.0%	78.0%	75.1%
Freight Delivery Metric (FDM)	93.1%	94.7%	95.2%	94.1%
<b>Locally Driven Measures</b>				
Performance Management Conversations Bands 1-4	80%	90%	100%	100%
Railway Work Complaints	1,357	1,285	1,214	1,179
National Rail Passenger Survey results at Network Rail Managed Stations	84%	85%	87%	88%
Virgin Trains West Coast Level 2 Scorecard	0%	50%	100%	55%
TransPennine Express Level 2 Scorecard	0%	50%	100%	50%
West Midlands Trains Level 2 Scorecard	0%	50%	100%	17%
Chiltern Level 2 Scorecard	0%	50%	100%	54%
Merseyrail Level 2 Scorecard	0%	50%	100%	100%
Northern Level 2 Scorecard	0%	50%	100%	45%
CrossCountry Right Time Arrivals at Birmingham New Street	35.0%	40.0%	45.0%	30.7%

The LNW route had a challenging 2017/18. The overall route scorecard outturn was 38 per cent.

Key challenges in 2017/18 included heavy snowfall and delays to major renewal upgrade schemes. A tragic rise in suicides in the south of the route and responding to the aftermath of the Manchester Arena terrorist attack also had a significant impact.

Operational expenditure, safety, customer satisfaction at our main railway stations and reducing public complaints about railway work were areas in which we beat our targets.

### Safety

Workforce safety performance on LNW in 2017/18 was favourable to target on most measures. For LTIFR we achieved 0.536 against a target of 0.558. We have delivered a 35 per cent improvement in LTIFR over the last two years.

We exceeded our close calls raised target of 18,200 with a total of 21,277 throughout the year. The route only closed 76 per cent of these reports within 90 days, missing our target. Improving this measure will be a priority during 2018/19.

We also we hit 100 per cent of our passenger train accident risk reduction measures. This is important in reassuring customers that we are keeping them safe as they travel on the railway.

We hit all of our level crossing risk reduction milestones, including installing low-level lighting at every footpath crossing on LNW. This illuminates the way and reduces risks of slips and falls. It also further clarifies the correct walking routes for pedestrians. Managing level crossing safety remains a priority in 2018/19.

Our 'Take 5 for Safety' principle remains at the heart of our workplace culture. This means everyone taking five seconds to think through what they're doing to ensure it is safe.

### Financial performance

The LNW route business remained within budget on operational expenditure in 2017/18 after a concerted effort to improve cost efficiency. The LNW renewals programme also came in under budget. This is further positive evidence of a business in control of its costs.

However, financial performance was affected by train punctuality being below where it needed to be. This resulted from a combination of factors including a stark rise in suicides on the southern end of the WCML. Asset failures and heavy snowfall also adversely impacted train performance.

Major railway upgrade schemes including the Ordsall Chord project in Manchester and the

Blackpool line electrification were delivered to budget.

Two schemes, Preston-Manchester and Bromsgrove electrification, were delayed and additional costs were incurred. Manchester-Preston was delayed due to poor ground conditions and ancient mine workings. The collapse of Carillion, our principal contractor, slowed the programme further. Amey has now taken over the programme and has committed to complete it for December 2018. At the time of writing this report, Bromsgrove electrification is almost complete and ready to hand over to train operators for driver training.



### Punctuality

Train punctuality in 2017/18 fell short of the record levels achieved on LNW in 2016/17. A combination of factors caused this. They included the 'Beast from the East' snow storm, the closure of Manchester Victoria station in the aftermath of the Manchester Arena terrorist attack, industrial action by train crews and high incidence of suicides. Each of these are personal tragedies that leave families and loved ones in terrible grief. These awful incidents also impact operational performance. This in turn impacts financial performance. Fatalities between Rugby and London Euston had a significant adverse impact. Thirty platform patrollers have been deployed at stations in this area. Their purpose is to intervene to prevent these tragedies.

### Asset management

Our asset renewals programme was a real success. We were within one per cent of the £350 million budget set for our extensive portfolio. We delivered all our planned renewal work in every area save two. The 'Beast from the East' storm led to two weekends of plain-line track replacement being lost. Meanwhile preparatory work for the replacement of North Wembley junction was postponed due to train operators' concerns over passenger numbers. This work has been rescheduled for August 2018.

While our asset performance was strong, we narrowly missed our reliability index measure.



Telecoms and signalling outperformed target. We reduced asset failures affecting train performance. The impact of the unprecedented cold weather was one of the factors leading to us narrowly missing our target.

**Investment**

The Great North Rail Project hit major milestones as it continued to transform train travel for customers both now and in the future. Its achievements included the unveiling of the iconic Ordsall Chord viaduct connecting Manchester’s main stations for the first time. Ordsall will ease rail congestion across the city giving rise to more services in future and improved journey times as far afield as Newcastle.

Liverpool Lime Street station underwent stage one of its transformation including the creation of two new platforms.

The Blackpool-Preston line was closed for five months for its electrification upgrade. The project was completed in advance of the May 2018 timetable change, which now sees new electric trains running along this line.

Unexpected poor ground conditions hampered progress on the Manchester-Bolton-Preston line electrification. This led to it being delayed from May 2018 to December 2018.

Work continued to electrify the Walsall-Rugeley Trent Valley line. The Bromsgrove electrification project will complete two months after its intended May deadline. Meanwhile work is underway on HS2 enabling activity. Public consultations continued to take place for the East West Rail Phase 2, Bicester-Bedford scheme.

**Customer-driven measures**

Passenger satisfaction at our managed stations (Birmingham New Street, London Euston, Liverpool Lime Street and Manchester Piccadilly) was favourable to target in 2017/18.

Volumes of railway work complaints were 1,179 versus an annual target of 1,285. This resulted from staying on top of pre-work notification letters to lineside residents and the continual emphasis on the need for frontline employees and contractors to behave courteously.





# South East

Safety	Worse than Target	Target	Better than Target	2017/18 Actual
Lost Time Injury Frequency Rate (LTIFR)	0.477	0.454	0.432	0.517
Close calls raised	4,875	6,500	8,125	10,199
Close calls % closed within 90 days	80%	85%	90%	87%
Train Accident Risk Reduction Measures	60%	80%	100%	100%
Top 10 Milestones to reduce level crossing risk	6	8	10	8
<b>Financial Performance</b>				
Financial Performance Measure – excl. enhancements	£(27)m	£0	£27m	£13m
Financial Performance Measure – enhancements only	£(50)m	£0	£50m	£43m
Cash Compliance – Income & Expenditure	£(6)m	£0	£29m	£26m
<b>Investment</b>				
Top Investment Milestones	60%	80%	100%	100%
<b>Asset Management</b>				
Reduction in Service Affecting Failures	3.0%	4.0%	6.0%	-0.5%
7 Key Volumes	90%	95%	100%	100%
<b>Train Performance</b>				
Govia Thameslink Railway Right Time (Final destination only)	52.0%	54.0%	56.0%	53.7%
Southeastern Right Time (Final destination only)	59.0%	61.0%	63.0%	63.8%
Network Rail contribution to Govia Thameslink Railway CaSL	3.2%	2.9%	2.6%	2.8%
Network Rail contribution to Southeastern CaSL	2.4%	2.2%	2.0%	2.0%
Delay Minutes affecting Govia Thameslink Railway	1.59m	1.46m	1.33m	1.59m
Delay Minutes affecting Southeastern	0.73m	0.66m	0.61m	0.76m
Freight Delivery Metric (FDM)	85.7%	89.0%	90.1%	90.0%
<b>Locally Driven Measures</b>				
People Measure – two formal performance and development conversations per year for bands 1-8 staff	80%	90%	100%	100%
NPRS Overall Score (Govia Thameslink Railway)	76.5%	78.0%	79.5%	75.0%
NRPS Overall Score (Southeastern)	83.5%	85.0%	86.5%	80.5%
Railway Work Complaints	810	760	710	500
Number of Unplanned Temporary Speed Restrictions	33	30	27	28
Percentage Completion of Maintenance Plan	60%	70%	80%	65%
Incidents of Possession Overruns	5.0%	3.0%	1.0%	3.1%
Govia Thameslink Railway / Network Rail Top Team satisfaction score	3.56	3.78	4.00	4.03
Southeastern / Network Rail Top Team Satisfaction score	3.84	4.00	4.16	4.29

## Safety

We continue to embed a positive safety culture, with high levels of health and safety awareness among our people and a strong focus on preventing accidents. This is most clearly evidenced by the huge improvement in the number of close calls raised (10,199 – a more than 50 per cent increase on 2016/17) and we also exceeded our target for close calls closed within 90 days.

While our Lost Time Injury Frequency Rate (LTIFR) has deteriorated slightly this year from 0.505 to 0.517 (lower is better), it improved considerably in the second half of the year following the appointment of a safety transformation director and ended the year below the national route average.

We now have stronger, more inclusive governance arrangements in place to drive cultural change, with a series of mature improvement plans delivering real benefits for our people. Our safety workshops are now an established part of what it means to work on South East route, with high levels of attendance and engagement from the route leadership team to the front line. We have also continued our tidy railway campaigns to reduce the risk of slips, trips and falls and improve our railway environment, while improvements to railway access points and pilots to trial new lifting gear are also underway.

We have improved employee wellbeing with a high take-up of mental health first aid training and we will be rolling this out further in the year ahead. We have also successfully piloted a new self-referral physiotherapy system which has seen the number of our people using physio service to help manage and prevent muscular-skeletal injuries increase by two-thirds.

Level crossing safety has also improved and we met our target to deliver 80 per cent of the top ten level crossing risk reduction milestones. This has resulted in a FWI measure which will, on its current trajectory, achieve the CP5 target of a 25 per cent reduction from the baseline.

## Financial performance

Financial performance in 2017/18 was positive overall, driven largely by improved operating performance resulting in a reduction in compensation payments to operators. The improvement in train performance was in part due to additional investment in operating expenditure to help address some of the key performance issues affecting the route.

Asset renewal delivery for the seven key volumes has been in line with our plan for the second year running; however expenditure in 2017/18 has been

lower than budgeted. This in part reflects efficiencies delivered in the year, but also reflects deferrals driven most notably by contractor performance and aligning works with access availability.

## Investment

The infrastructure upgrades successfully completed this year, primarily through the Thameslink Programme, have set the foundation for significant improvements for passengers. The iconic new London Bridge station is now fully open to passengers and we have completed all track and signalling work in the surrounding area to enable the first phase of service improvements in May 2018, underpinned by the UK's first deployment of Automatic Train Operation and ETCS digital signalling.

An additional platform at Redhill on the Brighton Main Line, commissioned in January, will support the new timetable and allow an enhanced service on the North Downs line between Reading and Redhill in future, offering better connections to Gatwick Airport.

We have delivered major pieces of work on the route as part of a £300 million asset resilience programme, including a junction renewal at Earlswood near Redhill, drainage improvements through Sevenoaks Tunnel and vegetation and trespass management along the busiest parts of our route – all designed to reduce delays and provide a better service for passengers.

Signalling work at Ashford International means the new Eurostar rolling stock can continue serving the station, which is of huge economic importance to the whole of Kent. We have also made good progress on power supply upgrades in Kent and Sussex to support longer and more frequent services in 2018 and beyond.

The opening of a number of footbridges over the railway means we have been able to close some of our high-risk level crossings – examples of which include Stone Crossing near Dartford and the last remaining footpath crossing over the four-track Brighton Main Line at Salfords.

## Asset management

Asset reliability remains at historically high levels, with our CRI ending the year at 24.9 per cent, maintaining the gains achieved in previous years.

However, increasing congestion on the route means that any incident can cause disproportionately high knock-on impacts for passengers. This is why we are focusing heavily on further reducing the time it takes to respond to and fix faults, alongside

investment in Intelligent Infrastructure such as remote condition monitoring.

For the second year running we have successfully delivered our plan for the seven key renewals volumes, with over 100 kilometres of plain-line track renewed or refurbished in the year, over 130 switches and crossings renewed or refurbished and works on over 11 underbridges including the repair of Shoreham Viaduct.

### Performance

Train performance has improved this year, despite the South East route being the busiest and most congested in the country with almost a third of all passenger journeys nationwide. This was driven largely by ever-greater collaboration with our train operators – an example of which is our new joint performance teams with GTR and Southeastern, who are setting the standard for joint working across the industry.

The successful completion of our work around London Bridge as part of the Thameslink programme means passengers are now beginning to feel the benefits after several years of disruption and we have successfully reduced the number of speed restrictions on our network.

Despite these improvements, performance in the South East remains among the lowest on the network and the year has not been without its challenges including adverse weather, a spike in trespass and suicides and major incidents such as the London Bridge terror attacks.

Our principal performance measure on South East route is 'Right Time' (i.e. arrival at destination within 59 seconds of published time) rather than the more standard PPM. For Southeastern, we delivered Right Time MAA of 63.8 per cent against a target of 61.0 per cent, significantly up on the 2016/17 figure of 58.6 per cent.

A number of factors contributed to this improvement, including the best ever autumn period thanks to a renewed focus on our seasonal strategy, a substantial reduction in the number of speed restrictions and improved asset performance in the critical first few miles approaching our London termini.

For GTR, we delivered Right Time MAA of 53.7 per cent in 2017/18, narrowly missing the target of 54.0 per cent but still improving on the previous year's result of 52.1 per cent. Using the standard PPM measure, performance increased significantly year-on-year from 74.3 per cent in 2016/17 to 81.3 per cent. It is clear that the significantly reduced impact of industrial action

affecting Southern services has played a big part in this recovery, as has the delivery of our Thameslink programme works which has relieved some of the operational challenges on an already congested network.

Congestion on the South East network means that the amount of delay caused per incident has the potential to be high. Our focus on the response to incidents to reduce the reactionary delay caused has meant that over the course of the year our DPI MAA has fallen from 28.1 to 23.2. We will continue the focus on reducing DPI with our rapid response teams at key locations aiming to drive down the time it takes to resolve incidents and pre-agreed operational plans to improve recovery timescales.

The overall level of delay on the route declined in 2017/18, with substantial improvement in delays caused by speed restrictions, leaf fall, asset, fleet, and traincrew. However, track assets, traincrew, fleet, leaf fall, trespass and fatality, and extreme weather (notably the snow in March which affected much of the network) continued to represent substantial contributions to delay minutes over the course of the year.

### Locally driven measures

We achieved a monumental reduction in railway works complaints, which almost halved from 957 in 2016/17 to 500 in 2017/18. This is the result of a campaign to highlight and address worker behaviour and simpler, automated processes for issuing works notifications to our neighbours.

We undertake 'Pulsecheck' surveys throughout the year with our customers. Scores received from both Southeastern and GTR were above target for the year. We also have a share of responsibility for the scores our train operators receive in the Transport Focus National Rail Passenger Survey – and while the scores they received were slightly below target, both have improved year-on-year.

### Other

The impending South Eastern re-franchise has been an opportunity for South East route to lead the way working with the DfT to develop a new alliance model.

All bidders were clearly supportive of our vision of a strong alliance between Network Rail and the new operator that will meet the government's aspiration to move track and train close together and deliver significant benefits for passengers and the economy.

# Wales

Safety	Worse than Target	Target	Better than Target	2017/18 Actual
Lost Time Injury Frequency Rate (LTIFR)	0.377	0.359	0.341	0.377
Close calls raised	5,475	7,300	9,125	8,595
Close calls % closed within 90 days	80%	85%	90%	90%
Top 10 Milestones to reduce level crossing risk	6	8	10	9
Severe Safety Incidents	50%	30%	0%	0%
% Reduction in Overall Precursor Events	5%	10%	15%	25%
<b>Financial Performance</b>				
Financial Performance Measure – excluding enhancements	£(13)m	£0	£13m	£1m
Financial Performance Measure – enhancements only	£(16)m	£0	£16m	£0
Cash Compliance – Income & Expenditure	£(4)m	£0	£22m	£3m
<b>Investment</b>				
Top Investment Milestones	60%	80%	100%	100%
Top Investment Milestones (3 <sup>rd</sup> Party)	50%	75%	100%	100%
<b>Asset Management</b>				
Reduction in Service Affecting Failures	-2.5%	0.0%	2.5%	4.6%
7 Key Volumes	90%	95%	100%	100%
Top 10 adverse camber sites risk based plans agreed	80%	90%	100%	100%
<b>Train Performance</b>				
Arriva Trains Wales PPM	92.8%	93.5%	93.6%	92.2%
Arriva Trains Wales CaSL	2.6%	2.3%	2.3%	3.0%
Arriva Trains Wales T-18 and T-12 Delivery	95.0%	98.0%	100.0%	100.0%
Great Western Railway Right Time Departures leaving Wales route at Severn Tunnel Junction	52.0%	56.0%	60.0%	43.7%
Delay Per Incident (DPI)	21.3	19.4	17.5	22.9
Temporary Speed Restrictions	49	44	40	36
Seasonal Preparations (Milestones vs Target)	80%	90%	100%	100.0%
Autumn Attributed Delay Minutes	13,852	12,721	12,554	15,069
Freight Delivery Metric (FDM)	93.7%	94.7%	95.7%	94.9%
<b>Locally Driven Customer Measures</b>				
Joint Assembly Member Favourability	-2%	0%	2%	3%
NR/Arriva Trains Wales joint media use of 'working with...'	58	65	72	164
Passenger Satisfaction (NRPS)	80%	82%	85%	81%
Railway Work Complaints	433	429	390	295
Joint Strategic Events with Employees	9	12	15	20
Joint Employee Recognition	1	3	5	5
Culture of Continuous Improvement	80%	90%	100%	100%
Performance Management Conversations	80%	90%	100%	100%

## Safety

Our workforce LTIFR has improved by 33 per cent as a result of a reduction in employee lost time accidents. LTIFR for Wales and Borders route at the end of 2017/18 was 0.377. This is slightly worse than the target (0.359) but builds on the 0.559 achieved in 2016/17.

We have focused on close calls throughout the year to improve the safety and wellbeing of our workforce and helping to keep our passengers and the public safe. Close calls are now a key element of the Wales and Borders' safety culture and our employees are more risk aware and feel able to proactively report safety issues. In all, 8,595 close calls were made against a target of 7,300. We are leading nationally, with a close call closure rate of 90 per cent within 90 days, exceeding the scorecard of 85 per cent. We are developing our Home Safe Plan for 2018/19 to reduce injuries to the workforce.

We continue to work hard to reduce risk at level crossings as part of our level crossing risk reduction programme. We closed six level crossings in the year and commissioned 13 supplementary audio warning devices on level crossings across the route. Our teams also delivered rail safety messages to over 33,000 young people across the route.

Working with our industry partners and organisations including Samaritans we are seeking to address suicides on the railway through joint campaigns and employees training. 38 people attended Samaritans' Managing Suicidal Contacts course and the 'Back on Track' support course for employees who have witnessed a traumatic incident.

## Financial performance

The Wales and Borders route has exceeded targets for all key financial metrics over the year, with efficiencies delivered in both operating expenditure and renewals. These include a £1 million saving on the Barry Island viaduct refurbishment work, achieved through working with a local supplier.

By creating a locally devolved operating budget, our people have been empowered to work more efficiently. For example, devolving responsibility for energy and utilities to the route has enabled us to make efficiency savings of £846,000 this year alone.

## Investment

People living on the Wales and Borders route rely on rail for creating jobs, building sustainable communities and economic growth. The route spends more than £330 million with the supply chain on renewing and enhancing the railway

across Wales and Borders. We employ 1,600 people across the route and 4,400 contractors indirectly.

We continued the £50 million North Wales Railway Upgrade Project which has seen the installation of a state of the art signalling system between Shotton and Colwyn Bay. The River Artro viaduct in Gwynedd was upgraded and the over 100 year old footbridge at Llanfairpwll station, a popular tourist destination, underwent a £395,000 upgrade. Onibury level crossing situated on the busy A49 between Leominster and Shrewsbury was renewed and the track upgraded ahead of time.



The 2017/18 top investment milestones comprised four infrastructure enhancements funded by third parties, principally The Welsh Government.

Successful completion of these milestones was achieved and required the commissioning of the line speed improvements as part of the North South Wales Enhancement Project, the installation of new accessible facilities at Treherbert, completion of the new toilet block at Machynlleth to facilitate the 'Access for All' scheme and the new highways and overbridges at Talerddig on the Cambrian lines. These milestones have resulted in measurable safety and passenger benefits across the network.

We have seen the emergence and completion of a variety of enhancement projects across Wales and Borders. The year began with the commissioning of the North South Wales Enhancement Project and



was followed by the completion of the outline designs for Ebbw Vale Frequency Enhancement and the completion of the multiple-party funded level crossing closure programme at Talerddig.

Schemes that have progressed through the course of the year include the Rightacres development around Cardiff Central, Cardiff Parkway new station proposals, the Maintenance Depot Improvement Fund and the Level Crossing Risk Reduction programme. New schemes have emerged as a result of successful funding awards for a new station at Bow Street and an Access for All scheme at Cadoxton which will make the station fully accessible.

### Asset Management

The reliability of our assets has improved over the last year and is now at historically high levels. The number of service affecting failures in Wales and Borders reduced by five per cent compared to last year, building on the significant 14.2 per cent improvement of the previous year.

Improvement initiatives in the route included a strong focus on on-time maintenance. We have reduced the work backlog to less than two per cent of the work bank; during the year we became the first route to achieve this target.

Renewals delivery has also been successful, with all key volumes meeting target. We have exceeded our planned track renewals target. Major projects such as the North Wales Coast resignalling have contributed to our successes in this area.



### Performance

The PPM of our lead operator Arriva Trains Wales (ATW) was 92.2 per cent at the end of 2017/18,

slightly below target of 93.5 per cent. This is a 0.3 percentage point improvement on last year's figure. The Cardiff area signalling renewal scheme contributed to significant performance improvements and unlocked infrastructure capacity; a one per cent improvement in the South Wales Valleys PPM (operated by ATW) was achieved with performance levels of 95.5 per cent across the year. Our lead train operator, ATW achieved an average of 82.8 per cent of trains arriving at their terminating station early or within 59 seconds of schedule.

Three key categories have contributed to the variance at the year-end: fleet reliability and availability, the impact of severe weather and external incidents such as cable theft and trespass.

We are devising strategies to lessen the impact of severe weather and reduce the instances of cable theft and trespass.

In preparation for autumn, we worked with ATW on a range of activities including deploying specialist railhead treatment trains, combating slippery rail and enhanced vegetation management in areas we targeted with train drivers.

### Locally driven measures

We received 295 railway work complaints during 2017/18 this is significantly better than our target of receiving fewer than 400. Notably there was a 51 per cent reduction in the number of worker behaviour complaints. This is a direct result of face to face briefings with over 500 colleagues and contractors across the route around showing respect to those who live beside the railway. Our National Passenger Survey Score for the year was 81 per cent.

We supported transport arrangements during a number of high profile events, including the Champions League final which saw our collaborative approach praised by Ken Skates, the Welsh Government's Cabinet Secretary for Economy and Infrastructure. Mr Skates also commended the rail industry during the extreme weather in March, thanking the teams who worked tirelessly in exceptionally challenging weather conditions.

Our workplace diversity and inclusion champions programme continued, with 11 new champions appointed in the last quarter of 2017/18, bringing our total to 33. The 'Women in Leadership' programme with ChwaraeTeg (Fair Play) has seen 12 women participating in the programme this year. More women are working in the railway in Wales than ever before and half of the Wales and Borders leadership team are women.

# Wessex

Safety	Worse than Target	Target	Better than Target	2017/18 Actual
Lost Time Injury Frequency Rate (LTIFR)	0.433	0.412	0.392	0.500
Close calls raised	3,525	4,700	5,875	6,223
Close calls % closed within 90 days	80%	85%	90%	89%
Train Accident Risk Reduction Measures	60%	80%	100%	100%
Top 10 Milestones to reduce level crossing risk	6	8	10	10
<b>Financial Performance</b>				
Financial Performance Measure – excluding enhancements	£(13)m	£0	£13m	£(45)m
Financial Performance Measure – enhancements only	£(18)m	£0	£18m	£(6)m
Cash Compliance – Income & Expenditure	£(4)m	£0	£20m	£0
<b>Investment</b>				
Top Investment Milestones	80%	90%	100%	100%
<b>Asset Management</b>				
Reduction in Service Affecting Failures	0.0%	3.5%	7.0%	5.4%
7 Key Volumes	90%	95%	100%	100%
<b>Train Performance</b>				
South Western Railway PPM	87.6%	89.3%	90.7%	84.4%
South Western Railway CaSL	4.0%	3.5%	3.0%	4.4%
Great Western Railway – Amalgamated PPM on North Downs and Portsmouth Cardiff Route	82.0%	84.0%	86.0%	75.7%
CrossCountry Right Time Arrivals (Reading)	35.0%	40.0%	45.0%	28.3%
Freight Delivery Metric (FDM)	91.8%	93.1%	94.4%	95.6%
<b>Level 2 Scorecards</b>				
The total number of TOC-on-TOC delay minutes incurred by GTR	85,325	77,561	71,348	111,578
Safety Maturity	3.33	3.50	3.62	3.56
Passenger Satisfaction (London Waterloo)	85%	86%	87%	81%
Railway Work Complaints	493	468	443	242
Customer Satisfaction Survey (SWR Results)	55.5%	56.2%	56.9%	56.5%
<b>People Management</b>				
Performance Management	75%	80%	85%	90%

## Safety

We made a 29 per cent improvement from last year in the number of lost time injuries per 100,000 hours of work which is a considerable improvement on the previous year, with a 0.500 LTIFR against a target of 0.455. Our safety improvement plans have delivered real benefits and are forecast to continue for the rest of the spending period (CP5).

At the centre of this change are our safety workshops for frontline employees. These were well attended, with almost 1,000 employees registering each time, they received positive feedback and importantly allowed us to talk directly with those working in the highest-risk environments.

The number of close calls raised, and those closed within 90 days, exceeded our target. We set up a team to focus on close calls, engaging with colleagues to raise them, and where possible close them. By reducing unsafe situations and behaviours in a timely manner, we have made where we work safer.

We have made great strides in reducing risk at level crossings, including the completion of the outline design on two new safe pedestrian footbridges at Farnborough North and White Hart Lane, as well as achieving all of our milestones related to level crossing risk reduction. This includes closing Shortwood Common and Enham pedestrian level crossings. We also delivered all of our train accident risk reduction measures.

## Financial performance

The route delivered within its cash target for the year. Whilst we made some trade-offs to remain within our funding envelope we have delivered the seven key renewals volumes, delivered planned enhancements and invested in areas like improving level crossing safety.

In terms of FPM, the route had adverse FPM (inclusive of income, opex and capex) overall.

This was driven by Schedule 8 payments associated with train performance falling short of target. It should be noted however, that renewals have delivered a positive FPM of £2 million as a result of additional efficiencies being delivered on our capital portfolio.

## Investment

Passenger numbers on our route continue to grow - almost a quarter of a billion journeys are already taken every year in Wessex, and those numbers are forecast to rise. In addition, the route also serves London Waterloo, Britain's busiest station, with annual passenger numbers of almost

100 million and Clapham Junction Europe's busiest interchange station.

Network Rail and South Western Railway (SWR) are working to boost capacity at London Waterloo station with completion of an £800 million investment. This will provide five additional platforms at the former London Waterloo International Terminal; longer platforms for longer trains between London Waterloo and Reading; new trains between London Waterloo and Windsor; and longer trains on London suburban services. The most complex areas of this huge project were completed in August 2017, allowing SWR to start running 10-car services to and from London Waterloo. Overall, this work will increase peak-time capacity by 30 per cent when work is completed in December 2018.

Throughout the year, we have carried out a range of successful renewals across our network to provide passengers with more reliable journeys. This includes an £8 million investment over Christmas for vital track renewal work in Southampton, increasing reliability and reducing noise pollution for local residents; and more than £7.5 million to replace life-expired Victorian railway bridges in both Portsmouth and Wandsworth in south west London, helping lift speed restrictions and delivering long-term reliability of the infrastructure.

We continue to work with partners on plans for a new station at Reading Green Park, the successful planning application for the re-development of Guildford station, and the potential redevelopment of Clapham Junction. Guildford and Clapham both became Network Rail managed stations on 1 April 2018 to facilitate this future work.

## Asset management & train performance

We exceeded target and reduced the service affecting infrastructure failures by nearly six per cent when compared with last year, against a target of three per cent, and this represents a 27 per cent improvement over the control period to date.

Working in alliance with SWR, we have: introduced new teams to deal with incidents on the network 24 hours a day, 365 days a year from our state of the art Rail Operating Centre in Basingstoke, increased the number of infrastructure inspections in the London Waterloo area to fix problems before they turn into delays, and rolled out new technology to avoid teams going onto the track to disconnect the power, which is safer for our employees and lessens disruption for passengers.

In terms of asset management, we have halved the number of serious rail breaks and defects over CP5, improved poor track geometry by 50 per cent and

this is now better than it has ever been on the route. The Wessex composite reliability indicator is the highest nationally.

However, it has been a challenging year for train performance, with PPM falling below target. However, we have begun to see the benefit of our agreed joint performance improvement plans with SWR, which started its franchise in August 2017.

#### Locally driven customer measures

We made good progress on reducing the number of railway work complaints this year, delivering a 52 per cent reduction on the previous year with a figure of 292, against a target of 493. This figure was achieved through targeted communications, keeping our neighbours informed of planned works as well as upskilling our teams, highlighting the effect their actions have on our neighbours and our reputation.

Our passenger satisfaction levels at London Waterloo station have reduced considerably this year and are below target, though it should be noted that the impact on train performance from the significant upgrade work at the station in August, and the subsequent post-commissioning issues, had a major impact on this figure.

#### Our people

The introduction of the Wessex Star Awards scheme is part of our commitment to create a rewarding environment for employees. The awards celebrated the hard work of 53 individuals or teams over the year.

This year we relaunched the diversity and inclusion champions network on the route, increasing their numbers to more than 60 and developed route specific training for this group. The Wessex Inspire event series was also launched, inviting inspirational speakers to share their experiences with colleagues on gender diversity. Thanks to our efforts the number of females on our route has risen 2.5 per cent in the last 18 months to 11.5 per cent, underlining our commitment to the '20 per cent by 2020' vision.

We also have a route action plan which has introduced reverse mentoring with the executive team. This programme is seeing all members of the senior executive team mentored by colleagues from across the organisation to give them a more rounded view of the business, and a more personal insight of some of the day-to-day issues faced by colleagues.





# Western

Safety	Worse than Target	Target	Better than Target	2017/18 Actual
Lost Time Injury Frequency Rate (LTIFR)	0.525	0.500	0.475	0.413
Close calls raised	5,700	7,600	9,500	10,734
Close calls % closed within 90 days	80%	85%	90%	90%
Train Accident Risk Reduction Measures	60%	80%	100%	100%
Top 10 Milestones to reduce level crossing risk	6	8	10	10
<b>Financial Performance</b>				
Financial Performance Measure – excluding enhancements	£(23)m	£0	£23m	£(41)m
Financial Performance Measure – enhancements only	£(83)m	£0	£83m	£(15)m
Cash Compliance – Income & Expenditure	£(12)m	£0	£61m	£0
<b>Investment</b>				
Top Investment Milestones	80%	90%	100%	90%
<b>Asset Management</b>				
Reduction in Service Affecting Failures	3%	4%	4%	0%
Composite Reliability Index	4%	5%	5%	4%
7 Key Volumes	90%	95%	100%	100%
<b>Train Performance</b>				
Great Western Railway PPM	89.5%	90.0%	90.3%	85.5%
Great Western Railway CaSL	2.9%	2.8%	2.5%	4.6%
Heathrow Express PPM	89.6%	90.1%	90.6%	90.7%
Heathrow Express Right Time Arrival	69.3%	70.0%	70.7%	64.4%
CrossCountry Right Time Departures @ Bristol Parkway	52.5%	55.0%	57.5%	46.2%
Freight Delivery Metric (FDM)	92.4%	94.1%	95.0%	94.2%
<b>Locally Driven Measures</b>				
Bands 1-8 have 3 customer focussed meetings	80%	90%	100%	100%
Level 2 Great Western Railway Scorecard	0%	50%	100%	55%
Level 2 Heathrow Express Scorecard	0%	50%	100%	38%
Managed Stations Passenger Satisfaction (NRPS)	85%	87%	89%	88%
NRPS Western Route	83%	85%	87%	81%
Railway Work Complaints	1,385	1,285	1,185	801



## Safety

Western route had a good year in safety, delivering our scorecard commitments in full. We improved workforce safety in 2017/18 by 32 per cent, significantly exceeding our LTIFR target. We successfully introduced vehicle speed warning systems in our fleet, and this has led to a reduction in road traffic accidents. We have also seen an overall reduction in all injury types, and continued strong safety leadership across the route.

Passenger and public safety, exceeded our annual target. Delivering 100 per cent of our planned milestones and infrastructure improvement volume commitments.

We reduced measured risk for level crossings and exceeded our annual scorecard target in this area, successfully delivering ten planned improvement milestones against a target of eight.

Our employees commitment to close call reporting has been excellent and we collectively exceeded our annual target for the number of close calls raised by just under 40 per cent. We also exceeded our scorecard commitments to review, close and feedback on at least 85 per cent of close calls within 90 days of them being raised, reaching 90 per cent by year-end.

On non-scorecard safety measures, we continue to maintain and improve and we have delivered a large number of safety improvement programmes. Notable amongst these were the 'go-live' of the new standard for the planning and delivery of safe work; significant improvements in track worker welfare and the launch of our Route Safety Improvement Fund, which awarded funding to ten bids to improve safety in our operations, planning and maintenance departments.

## Financial Performance

Our FPM has been negatively impacted this year, largely by increased compensation being paid to train operating companies, as a result of asset performance during the summer and autumn and the storms and snow towards the end of the year. Our track renewals programme has also been impacted as we balance the huge demands for access to the route while minimising the impact to passengers.

Delivery against our financial plans in operations, maintenance, renewals and other income has been on plan, with a number of additional efficiencies delivered, notably in the reactive maintenance of lineside buildings and the 'predict and prevent' programme of proactive maintenance.

Strong management and control of our route-wide expenditure has resulted in an overall neutral cash position, despite the financial challenges we faced.

£2.17 million of efficiencies have already been realised through local projects with another £15 million planned to be realised by the end of CP6.

## Investment

Western route continued the delivery of the largest and most significant upgrade to the Great Western Mainline in its 175-year history during 2017/18. The Greater West Programme involves modernisation of the route's infrastructure to improve reliability and enable a cascade of rolling stock across the entire route. The programme is also modernising and electrifying some lines to enable new, more spacious trains to operate on high-speed routes.

The year has seen the delivery of several key electrification milestones, which have facilitated an extensive cascade of rolling stock across the route, providing passenger benefits throughout the region.

In May 2017, new OLE system, upgraded traction power and major re-modelling of the existing Maidenhead layout, (including the installation of six new sidings) allowed the introduction of eight-carriage Class 387 Electrostar electric multiple unit (EMU) trains between London Paddington and Maidenhead.

This meant that, in July 2017, Class 16x diesel multiple unit trains, which had previously operated the routes taken over by the Class 387s, began a cascade to other parts of the route, increasing capacity. These trains initially began operating on the Severn Beach Line, and later in the autumn, services to Weston-super-Mare and Taunton were introduced.

In October 2017 many years of work on the Great Western Electrification Programme reached a major milestone when extensive gauge clearance, platform lengthening and above all electrification meant that a new fleet of Hitachi Class 800 Intercity Express Trains began operating. The 10-car trains are now running on routes from London Paddington to Swansea, Bristol Temple Meads and elsewhere.

Further electrification work at Christmas 2017 meant that at the start of January 2018 the Class 387s were able to extend their range beyond Maidenhead and run the 53 miles from London Paddington to Didcot Parkway. IETs joined them in running under electrical power for this section.

December also saw the completion of a new IET turnback siding at Henwick, Worcester. This new facility will allow a timetable change from May 2018,

allowing London Paddington IET services to serve Worcester's city centre station at Foregate Street.

Throughout the year, our route enhancements team managed the Western level crossing Risk Reduction programme, successfully closing eight level crossings. The team also delivered passenger benefits through the National Station Improvement Fund with enhancements being seen at Didcot Parkway, Swindon, Exmouth and St Erth stations.

December also saw platform 4 at Bristol Parkway enter into operation, providing much-needed capacity ahead of the December 2018 enhanced high frequency timetable from Bristol to London. A further new platform at Bristol Parkway (platform 1) was commissioned and made available for operational use, providing significant performance benefits for operators on the route and national CrossCountry services.

In April 2018 we completed the second stage of Bristol Area Signalling Enhancements in the single largest-ever programme of its type undertaken by Network Rail. The new system is controlled from Didcot and adds resilience and reliability to our network as well as enabling future electrification. We have a further two stages to deliver of this complex signalling renewal.

Alongside the Greater West Programme, the route has continued to deliver the western surface elements of the Crossrail Programme required for the introduction of the new Elizabeth line. The final piece of track to connect the Great Western Mainline to the new Crossrail tunnels under central London was laid along with a massive and very complex data signalling upgrade in the area immediately to the west of London Paddington. This was crucial to enable Elizabeth line trains to start operating passenger services on Western route in May 2018 and in preparation for services to commence through the tunnels from December 2018.

### **Asset Management**

Despite a strong recovery in the second half of the year, our target for the reduction of service-affecting failures was missed. We exceeded our target for CRI, demonstrating an improved reliability in our critical asset base.

While the overall reliability of assets on Western route is improving, performance on the inner Thames Valley into London Paddington remains challenging, despite eight out of nine of our key asset performance indicators on the Didcot to London Paddington section seeing a reduction in delay. Minor problems in this area tend to cause significant delays due to the high service volume.

Issues with the reliability of our assets in 2017/18 have been primarily driven by two key issues: track circuits and points. We have plans that are delivering improved reliability across asset portfolios for both of these areas.

We exceeded our seven key renewals volumes targets in 2018/19. Drainage and vegetation clearance volumes remain at historic high levels across the route.

### **Performance**

During 2017/18, we appointed a new Head of Operations Delivery along with a new Senior Incident Officer. The Incident Officer team provides round-the-clock cover to reduce DPI.

This year saw improved results in Network Rail's contribution to delay minutes on the busy Thames Valley corridor, with delay minute reduction of 12 per cent, while at the same time seeing the largest time timetable change ever on Western route. With electrification completed between London Paddington to Didcot and the introduction of electric commuter and high speed trains. This was a difficult year for Great Western Railway performance, with Network Rail Western delay increasing by 4 per cent. Delay to Heathrow Express (HEX) improved by 17 per cent with the Route Scorecard measure for PPM being achieved.

HEX primary measure is Right Time performance, and this has not improved in line with the targets established on the 2017/18 Customer Scorecard; both Network Rail and HEX have improved their delay minutes by over 10 per cent. Additionally, the industry-wide measure of PPM has also shown an improvement for HEX.

In addition to the successful re-signalling of Bristol Temple Meads and signalling control moving to the Didcot Control Centre, the year has also seen preparatory work for the conversion to four tracks on the line between Bristol Temple Meads and Bristol Parkway, which will increase capacity in the area and improve performance. Preparations are also underway for re-signalling east Cornwall in April 2018 and Oxford in July.

The average delivery of the maintenance plan has been at 94 per cent of planned work across the year. Improved planning by the maintenance team has also reduced the amount of work which needed to be rescheduled (due to unforeseen circumstances such as adverse weather or plant failure) by 40 per cent across the route, the unplanned TSR risk was well-managed, and for much of the year has been 50 per cent below target. In terms of modernising work practices, 1,180 miles of basic visual inspections have been converted to automated 'Plain Line Pattern

Recognition' train-borne inspection, and a further 200 miles were added ready for 2018/19.

This was a good year for freight performance delivery. The FDM target of 94.1 per cent was slightly exceeded at a year-end figure of 94.2 per cent, despite disruption to normal operations arising from improvement work. At the same time the delays caused by freight operators to passenger operators reduced by 2.4 per cent. Over 10 million tonnes of stone, steel and petroleum were carried through the route from west to east, whilst tens of thousands of containers and cars crossed the route on the north / south axis in and out of Southampton.

**Locally-driven customer measures**

We have used the opportunity this year to emphasise the need for good-quality, frequent conversations between managers and their team members to include a focus on customer related objectives.

The Western Route Supervisory Board, chaired independently by Dick Fearn, was the first of the new Route Supervisory Boards to be created, and

held its inaugural meeting in April 2017. Its aim is to ensure the rail industry works together to deliver for customers and end-users and over the year the board has been extended to include attendance from the managing directors of CrossCountry and MTR Crossrail who are operating the Elizabeth line.

The National Rail Passenger Survey reported that passenger satisfaction for Network Rail managed stations in Western route was 87.6 per cent over the year, exceeding our scorecard target of 87 per cent.

We have continued to make great progress in reducing railway worker complaints over the year and met our targets once again. We will continue to improve in this area by engaging further with our workforce on the importance of their behaviour when near lineside residents and communities. We will also continue to make sure pre-notification is given in plain English ahead of work so that our lineside neighbours understand what is happening and know what to expect.



# Freight and National Passenger Operators

Safety	Worse than Target	Target	Better than Target	2017/18 Actual
Lost Time Injury Frequency Rate (LTIFR)	0.25	0.15	0.05	0.00
Close calls raised	131	175	219	276
Close calls % closed within 90 days	80%	90%	100%	100%
Derailments	16	13	10	10
Signals Passed at Danger (SPADs)	52	44	36	59
Safety Hour Attendance	57%	67%	77%	80%
Operator staff lost time injuries on Network Rail infrastructure	22	16	10	3
<b>Financial Performance</b>				
Freight Track Access Income	£46m	£52m	£56m	£56m
Operating Expenditure - Variance to Budget	10%	0%	-10%	-4%
<b>Investment</b>				
CP5 SFN Schemes - GRIP 3 completion vs baseline	80%	90%	100%	95%
CP5 SFN Schemes - GRIP 6 completion vs baseline	80%	90%	100%	100%
<b>Train Performance</b>				
Freight Delivery Metric – National	92.5%	94.0%	94.5%	93.5%
Right Time Departures – Freight	78.0%	80.0%	82.0%	79.0%
FOC-on-TOC delay (Delay Minutes/100 train km)	1.24	1.18	1.15	1.27
Network Rail Cancellations – Freight	0.41%	0.35%	0.30%	0.73%
CrossCountry – PPM	89.2%	90.0%	90.8%	87.7%
CrossCountry – CaSL	4.1%	4.0%	3.9%	4.9%
Caledonian Sleeper – Right Time Arrivals	72.0%	75.0%	78.0%	75.1%
<b>Customer Measures</b>				
DBC – Roll up of customer scorecard	0%	50%	100%	39%
Freightliner – Roll up of customer scorecard	0%	50%	100%	41%
GBRf – Network Rail on GBRf cancellations	0.41%	0.35%	0.30%	0.42%
DRS – Delivery of Cumbrian Coast Schemes Against Milestones	80%	90%	100%	90%
Colas – Roll up of customer scorecard	0%	50%	100%	65%
Freight Service Plan Reviews – Delivery Against Milestones	70%	80%	90%	93%
CrossCountry – Average Lateness at Destination	3.16	3.12	3.08	3.58
CrossCountry – Access Planning Milestones Met	70%	75%	80%	78%
Caledonian Sleeper – Roll up of customer scorecard	0%	50%	100%	70%
<b>People Measures</b>				
Performance Management Conversations	80%	90%	100%	98%

FNPO manages relationships with and delivery for nationally focused customers whose interests extend across our geographical routes' boundaries. As well as freight operating companies (FOCs), customers include CrossCountry, Caledonian Sleeper, charter operators and aspirant open access passenger operators.

FNPO is different to the other routes: we do not directly manage assets or control train operations, but delivers these by working closely with and through the geographic routes, the SO and other parts of Network Rail. We are accountable for the delivery of performance and other outputs for our customers and provides them with a principal point of contact.

FNPO customers operate around 1000 freight trains a day. This removes 7.6 million lorry journeys annually from the UK's roads. The rail freight sector produces £1.7 billion economic benefits each year for Britain. Our full-year scorecard achievement is 61.46 per cent, which was above target.

### **Safety**

We finished the year on target for all our scorecard safety measures except for Signals Passed at Danger (SPADs).

A key focus over the past 12 months has been working with colleagues across the industry to reduce the number of freight operators' employees injured on our infrastructure. This is also a key workstream for the cross-industry National Freight Safety Group and delivery is supported through our programme of joint safety tours with our customers.

We continue to exceed targets on close calls raised. Our teams' attendance at a weekly safety hour continues to be above target. We have covered a wide variety of topics during the year, including mental health and understanding safety culture of our partner organisations.

### **Train performance**

For the majority of the year our results were on target. In line with other routes, the 'Beast from the East' in March had a significant impact on the delivery of our targets. This means that we finished the year at 93.5 per cent FDM against a 94 per cent scorecard target.

CrossCountry performance was down from the last financial year at 87.7 per cent against a target of 90.1 per cent PPM.

We have worked closely with Caledonian Sleeper to exceed the target of 75 per cent right time performance. FNPO supports Caledonian Sleeper

through added monitoring and support of the Caledonian Sleeper service by Freight Service Delivery Managers. We have developed and put in place a joint performance strategy to achieve future targets.

### **Finance**

We finished the year in an adverse position for overall FPM, mainly as a result of high levels of compensation being paid, as well as reduced traffic levels. This was despite recording a positive FPM up to and including Period 11.

Overall freight track access income was in line with our forecast for the year, with construction traffic continuing to show encouraging growth, and a small increase in coal traffic late in the summer.

### **Customer focussed**

FNPO has grown to support the needs of our customers. During the past year we have increased the number of route freight managers and developed our links to the central functions such as the SO. We have also taken on the role of client for the fitment of digital signalling technology onto freight trains.

We have been working with Freight Operating Companies, ports and terminals such as the Port of Immingham, Drax power station and Port of Felixstowe to build on the work undertaken to improve right time departures. We also held two charter conferences, developed a charters' strategy and we are working with the charter sector on a plan to eliminate effluent released onto the track.

We are supporting the introduction of Caledonian Sleeper's new rolling stock, and also are working with the SO to support the refranchising of the CrossCountry franchise.

### **Investment and business development**

Progress of Strategic Freight Network schemes remains broadly good (against the GRIP 3 and GRIP 6 milestones). Work has started on the Felixstowe Capacity Upgrade scheme which will see an additional ten trains per day in each direction, going to and from the port. We are working with the SO and routes to review the delivery programme for 2018/19.

We have seen schemes at Chelmsford, Small Heath, Hope Street Manchester, Bristol East and Southall be delivered to provide support for construction sector supply chains. The investment in our estate provides long term security for the rail freight sector in traffic generation. We continue to work with the industry on provide stable and sustainable track access charges.



# System Operator

Safety & Sustainability	Worse than Target	Target	Better than Target	2016/17 Actual
Work Related Absence	37.05	31.98	27.04	18.00
Workforce Safety	80%	85%	90%	78%
Health & Wellbeing Plan Milestones	80%	90%	100%	100%
Volunteer Days Undertaken	312	319	335	190
<b>Train Performance</b>				
Impact on Train Performance – Delay Minutes	330,422	314,688	298,954	304,969
Impact on Train Performance – Incidents	22,844	21,756	20,668	20,556
<b>Finance</b>				
Financial Performance Measure (FPM)	24.28	23.80	23.32	21.54
<b>People</b>				
Your Voice Action Planning	80%	100%	120%	100%
<b>Milestone Delivery</b>				
<b>Rail Development Programme</b>				
Route Study Programme	60%	80%	100%	100%
High Speed Rail	60%	80%	100%	83%
Crewe	60%	80%	100%	60%
Northern Powerhouse Rail	60%	80%	100%	100%
Midlands Connect	60%	80%	100%	100%
Scottish Enhancement Development	60%	80%	100%	67%
Wales & Western Enhancement Programme	60%	80%	100%	96%
TfL / Crossrail 2	60%	80%	100%	40%
Brighton Main Line	60%	80%	100%	89%
<b>Functional Improvement Programmes</b>				
Capacity Planning Programme Milestones	60%	80%	100%	100%
SO Strategic Business Plan	60%	80%	100%	100%
End to End Planning	60%	80%	100%	100%
Functional Continuous Improvement Plan	60%	80%	100%	100%
CP6 Enhancements Plan Submissions	60%	80%	100%	100%
<b>Composite Measures</b>				
West Coast Partnership	60%	80%	100%	100%
East Midlands	60%	80%	100%	88%
Wales and Borders	60%	80%	100%	100%
South East	60%	80%	100%	100%
<b>Delivery to Customers</b>				
T-12	93%	95%	100%	73%
New Working Timetable Development	60%	76%	100%	95%
Timetable Production Milestones	60%	80%	100%	100%
Customer Advocacy – Routes	60%	80%	100%	100%
Customer Advocacy – Operators	60%	80%	100%	84%
Customer Advocacy – Funders	60%	80%	100%	80%

The SO is a distinct but connected part of Network Rail. The SO provides a whole-system, long term view informed by detailed knowledge gained from planning and timetabling the network, and from the industry-wide interfaces it has with every customer, route and infrastructure manager.

During the past year the SO has been re-organised to make it 'fit for the future'. We have organised ourselves so that we align better to engage with our key external stakeholders and internally with Network Rail routes, and have strengthened our capability in policy development, programme delivery and change management. We continue to strengthen our teams engaged in analysis, franchising and capacity planning.

We are working with our route business colleagues and external customers and stakeholders to embed our new organisation and operating model. A key activity across the function to support this has been to recruit into this new organisational structure.

The greatest challenge for the SO this year has been the challenges in developing the May and December 2018 timetables and the impact of delays to projects on our Informed Traveller commitments. We have now put in place a cross-industry recovery plan to address these issues.

#### **Workforce safety**

A key workforce safety measure relates to close calls attributed to the function being closed within 90 days. At the end of the year we finished below our target although in a stronger position than the previous year. Work was undertaken particularly in capacity planning to improve our performance in this area.

#### **Impact on train performance**

The year 2017/18 has seen the lowest number of timetable related performance incidents since the start of CP4.

Delay incidents and minutes ended the year favourable to target (6.48 per cent and 4.26 per cent respectively) despite an increasing trend in the volume of timetabling requests increasing year on year.

#### **Finance**

SO has maintained control of its costs, ending the year 1.9 per cent favourable against our expected outturn, and remaining within our CP5 financial targets.

#### **Strategic planning**

The route study programme sets out the approach by which we will work with the industry and stakeholders to deliver strategic studies that outline

capacity and enhancement options for the network over a long term horizon. Delivery of the programme has progressed to plan throughout the year. The West Midlands and Chilterns Route Study was published as planned in July 2017.

Collaboration with partners is reflected in the adoption by Midlands Connect of the Midlands Rail Hub, which forms a key element of their strategy. The ECML Route Study draft for consultation was published mid-year.

Responding to feedback from our customers and stakeholders, this year has seen the start of the roll out of a more continuous process of strategic planning. This puts the needs of passengers and freight users at the centre of our plans and better allows us to better tailor our work to the needs and timescales of all our partners.

We also developed and consulted the Kent Route Study, which sets out the strategic vision for the future of this vital part of the rail network over the next 30 years, based on customer, passenger and freight needs. We were delighted to receive consultation responses from MPs, local authorities, transport user groups and members of the public. The next stage is to work with funders on the choices identified to develop the network. Since the publication of the draft study, funding has been approved for the development of enhancements at Ashford International station. The Freight Network Study was published in April 2017 and established in June 2017.

#### **Rail development programmes**

Network Rail continues to work collaboratively with DfT and other partners to develop options for a Crewe Hub to realise the full benefits of HS2 services and facilitate the wider economic transformation of the area through third party investment.

As a partner of Transport for the North (TfN), we are working collaboratively to develop the Northern Powerhouse Rail Proposition. Our work was delivered on programme and has supported TfN's decision on a preferred network outlined in their Strategic Transport Plan as well as the government's decision to fund the passive provision of touchpoints on the HS2 network. The value of our ongoing work with TfN has been recognised by their decision to co-opt Network Rail as a member of the TfN Board and our work continues to inform the Strategic Outline Business case production during 2018/19.

Throughout the year SO has continued to work with HS2 and DfT to support and feed in to the design development for HS2 Phases 2A and 2B. This includes supporting the relevant legislative

processes, and considering how the HS2 network and services can be integrated with the wider rail network, during and after delivery of infrastructure works.

We have also worked collaboratively with stakeholders including DfT, London Borough of Camden, HS2 and Transport for London to develop feasible strategic concepts for the enhancement of Network Rail's existing London Euston station. This is represented in the successful achievement of key milestones for the development of a Strategic Outline Business Case and GRIP 2 feasibility study, and funded authority for GRIP 3 development in 2018/19. Enhancing London Euston is essential to meeting future passenger demand, as well as fundamental to the success of a comprehensive masterplan for the London Euston campus. As such SO has supported Property, HS2 and DfT in the development of the plan and the procurement and appointment of a master development partner (MDP), and begun to work with the MDP to develop and integrate proposals.

We have begun to develop our crucial role as SO in the integration of HS2, acting as client for infrastructure works and rolling stock compatibility studies required to inform train procurement, leading work on the future concept train plan, and working collaboratively with HS2, DfT and Network Rail route colleagues to develop a baseline 'System Migration Path' for delivering the system capability needed to realise the benefits of HS2.

Our teams have led project development work for a number of projects with milestones being achieved for Ely Area Capacity, Cambridge South, Woking Area Capacity Enhancement Strategic Output Business Case completed February 2018, Clapham Junction short term mitigations application with DfT for grant funding submitted in March 2018. The Brighton Main Line Programme – East Croydon Redevelopment- mobilised the design contract with our engineering consultants in March 2018, ahead of commencing consultation for planning powers. Some of these projects have included significant third party contributions.

Our partnership with Transport for London and DfT on Crossrail 2 has continued during the year, with the project progressing through the development phase, including providing support to the independent affordability review.

We have also undertaken the first (pilot) strategic fit assessment on the Windsor Link Railway, and provided strategic advice to Network Rail regarding the scheme. This exercise has assisted us in the development of processes to support further strategic fit analyses, for example relating to

Southern Access to Heathrow, in support of the analysis of market led proposals.

For freight, the Felixstowe Capacity scheme was developed through to GRIP 5 by our team before being handed over to route sponsorship for delivery. Meanwhile, a scheme to increase freight paths out of Liverpool has been developed to GRIP 3.

We have worked closely with Transport Scotland to support the development of the Scottish High Level Output Specification and its alignment with our planning for SO and across the business. This reflects the specific requirements for the whole-industry client role in Scotland and to address concerns around the wider industry capability.

Reflecting this, we have worked to develop a pipeline of potential investment in Scotland in CP6 and beyond, aligned with Ministers' Capital Investment Strategy published in March 2018. A Strategic Business Case for improving capability in Edinburgh (Edinburgh Suburban Enhancement Programme) was delivered in December 2017, and an agreed programme of further business cases is planned for 2018/19. In parallel, we have continued to support the delivery of CP5 enhancements and ring-fenced funds, as well as supporting opportunities to deliver additional output using headroom funds available to Scottish Ministers.

### **Franchising milestones**

The franchise competition programme is an important opportunity to bring track and train closer together to benefit passengers and the economy.

In 2017/18 we have strengthened our relationship with DfT's Passenger Services Directorate to support the development of franchise propositions through the embedding of a member of the Network Rail team in each of the department's competition teams.

This has proved successful in improving communication and informing the department on Network Rail's ability to deliver outputs that are being considered for the franchises.

During the year we have provided advice to inform the invitation to tender phases for the West Coast Partnership, East Midlands and Cross Country and this work continues into 2018/19, as well as ongoing work on the options for Great Western.

### **Timetabling**

The May 2018 timetable represented the biggest timetable changes in recent history. Approximately 46 per cent of all train schedules required alteration to accommodate the level of change requested.

Subsequently the cumulative effect of a number of factors necessitated a complete re-write of

substantial elements of the May 2018 timetable post-offer. Informed Traveller compliance has consequently suffered, leading to the creation of a national industry recovery plan. Separately, the ORR has recently announced that it will be conducting an inquiry into the disruption which will seek to:

- identify factors that contributed to the failure to produce and introduce a satisfactory operational timetable;
- reach conclusions about managing risks created by major network changes; and
- make recommendations to the industry and government before any future major network changes.

The Inquiry will be split into three phases – evidence-gathering, analysis and the development of recommendations. An interim report will be published in September.

### Cross functional improvement programmes

The primary focus of the SO improvement programmes is readiness for CP6. Having launched the new organisational design in May 2017, key work streams are focussed on reviewing our end to

end process model to make sure we can deliver with greater confidence the intended outcomes from our long term planning through to timetable production, the preparation of our business plans for CP6 and key programmes to enhance our people capability in our core activities.

### Customer advocacy

The first SO Customer Advocacy pulse survey was issued to SO customers during March 2018. The purpose of the survey was to benchmark the level of awareness by our customers of the SO, to understand their views regarding the quality of our products and services, and build a picture of the quality of the relationships our customers have with us.

The response rate for routes, operators and funders was 100 per cent, 84 per cent and 80 per cent respectively against a target of 80 per cent. The analysis of the data will inform the Customer Advocacy scorecard measures for 2018/19 in preparation for the CP6 scorecard. The pulse survey will be repeated each year to align with business and/or external industry activity.



# Glossary

Acronym	Meaning	Acronym	Meaning
ADC	Access Disputes Committee	LED	Light-Emitting Diode
AMCL	Asset Management Consulting Limited	LNE & EM	London North Eastern & East Midlands
AMEM	Asset Management Excellence Model	LNW	London North Western
ATW	Arriva Trains Wales	LTIFR	Lost Time Injury Frequency Rate
CaSL	Cancellations and Significant Lateness	MDP	Master Development Partner
CP5	Control Period 5	MML	Midland Main Line
CP6	Control Period 6	NARS	Network Availability Reporting System
CPPP	Confirmed Period Possession Plan	NDM	Network Data Model
CRI	Composite Reliability Index	NRPS	National Rail Passenger Survey
CSAMS	Civils Strategic Asset Management Solution	OH	Occupational Health
DBC	DB Cargo	OLE	Overhead Line Equipment
DfT	Department for Transport	ORBIS	Offering Rail Better Information Services
DPI	Delay Per Incident	ORR	Office of Rail and Road
DRS	Direct Rail Services	P3M3	Portfolio, Programme and Project Management Maturity Model
ECML	East Coast Main Line	PDI-F	Possession Disruption Index - Freight
EDP	Enhancements Delivery Plan	PDI-P	Possession Disruption Index - Passenger
EGIP	Edinburgh Glasgow Improvement Programme	PDSW	Planning and Delivering Safe Work
EIP	Enhancement Improvement Programme	PLPR	Plain Line Pattern Recognition
EIS	Entry into Service	PPM	Public Performance Measure
EMU	Electrical Multiple Unit	PPS	Possession Planning System
ETCS	European Train Control System	RCM	Remote Condition Monitoring
ETS	Employment, Training and Skills	RDMS	Rail Defect Management System
FDM	Freight Delivery Metric	RM3	Risk Management Maturity Model
FNPO	Freight and National Passenger Operators	S&C	Switches and Crossings
FOC	Freight Operating Company	SBP	Strategic Business Plan
FPM	Financial Performance Measure	SCADA	Supervisory Control and Data Acquisition
FWI	Fatalities and Weighted Injuries	SEU	Signalling Equivalent Units
GA	Greater Anglia	SFN	Strategic Freight Network
GBRf	GB Railfreight	SO	System Operator
GDPR	General Data Protection Regulation	SoFA	Statement of Funds Available
GEOGIS	Geography and Infrastructure System	SPAD	Signal Passed at Danger
GRIP	Governance for Railway Investment Projects	SSM	Station Stewardship Measure
GTR	Govia Thameslink Railway	SWR	South Western Railway
HAVS	Hand Arm Vibration Syndrome	TfN	Transport for the North
HEx	Heathrow Express	TOC	Train Operating Company
HLOS	High Level Output Specification	TPCMS	Traction Power Centralised Management System
HS2	High Speed 2	TPE	TransPennine Express
IEP	Intercity Express Programme	TSR	Temporary Speed Restriction
IET	Intercity Express Train	VTEC	Virgin Trains East Coast
INM	Integrated Network Model	WRI	World Resources Institute
IP	Infrastructure Projects	WCML	West Coast Main Line
IVR	Interactive Voice Response	WRCCA	Weather Resilience and Climate Change Adaptation



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