NetworkRail

Network Rail Infrastructure Limited
Annual Return 2019

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

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 or:
Post	Network Rail, Freedom of Information
	1st Floor Willen, Area C
	The Quadrant:MK
	Elder Gate
	Milton Keynes
	MK9 1EN

If you have any questions about the Annual Return please email: annualreturn@networkrail.co.uk

Annual Return 2019

The Annual Return is the formal means by which we report on our progress in delivering the Control Period 5 (CP5) outputs that were established by the Office of Rail and Road (ORR) in its Final Determination. The Annual Return follows the format agreed with the ORR and is prepared in accordance with our Network Licence.

The Annual Return 2019 reports on our performance between 1 April 2018 to 31 March 2019. It reports on our key activities through the year and includes commentary on our national, route and System Operator (SO) scorecards which set out performance and delivery targets for the year.

To support this document, we have published Annual Return data tables, which present an ongoing record of our stewardship of the rail network.

More detail on our financial performance can be found in our Annual Report and Accounts and our Regulatory Financial Statements.

Introduction

We describe our overall performance below in the context of our national scorecard, which provides a balanced picture of how we have performed across all the scorecard areas including safety, financial performance, investment, asset management, train performance and locally driven measures. A guide to our scorecards can be found on page 4.

Sadly, there were two contractor fatalities during 2018/19, one at Bearsden station (Scotland) and the other at Stoat's Nest Junction (Surrey). On 3 July 2019, before the publication of this report, two track workers died after being struck by a train near Port Talbot in the Wales & Western region. The circumstances of this incident are currently being investigated. We extend our sympathies to the relatives and friends of those who died.

This year there has been varied performance across the network. Train performance has been in decline for the last seven years, and the implementation of the new timetable in May 2018 further undermined public trust in our ability to deliver a reliable service. The May 2018 timetable changes did not result in good outcomes for many passengers and other rail users. By consequence, the causes of this disruption and Network Rail's management of the timetable process, were subject to both an independent review led by Stephen Glaister (then Chair of the ORR) and a Transport Select Committee inquiry. The Transport Select Committee published its recommendations on 4 December 2018 and the Glaister Inquiry published its recommendations on 7 December 2018. Network Rail has worked closely with the ORR's investigation into why the implementation of timetable changes resulted in the

scale of disruption to large numbers of passengers that it did. Network Rail has responded to the investigation's recommendations.

Network Rail has failed to deliver its performance targets during CP5. This resulted in Network Rail receiving a provisional order from the ORR in November 2018. Our response was submitted to the ORR in February 2019. It described our assessment of the underlying causes of the deterioration in performance and set out our plan to address this, including a broad range of activities to drive continuous and sustainable improvements in performance, in close collaboration with train operators and other stakeholders. In April 2019, the ORR published its decision, indicating that the obligations of the provisional order had been satisfied and that there was no breach of our Network Licence. This is subject to delivery of the activity set out in our report, and we will provide the ORR with quarterly progress reports.

We delivered an ambitious programme of renewals and investment in new infrastructure, which provided passengers with new and improved services that are less crowded and more frequent. Fiscal discipline has vastly improved, with the company remaining within our funding envelope. In February 2019 Network Rail successfully completed the sale of its commercial estate business – a portfolio of 5,200 properties in England & Wales. The sale generated £1.46 billion that will help fund the railway upgrade plan, which is improving and growing the rail network for the benefit of taxpayers, passengers and the wider UK economy.

We need to improve the service we provide to the people it matters to, and we are refocusing on passengers. We have already brought in some small changes that are starting to make a difference to passenger experience across the network, including increased seating at stations, free toilets at our managed stations and installation of water fountains. There is still a long way to go in developing a mindset where we constantly put passengers first, but we are pleased that across the industry there is an understanding that things need to change and that now is the time to act.

Putting Passengers First

Between September 2018 and January 2019 Network Rail undertook an extensive listening exercise in order to gain a better understanding of what is working and what is not. We spoke to hundreds of colleagues internally and more than 200 partners across 100 different organisations externally, and the hours we spent doing this have been invaluable.

Through this exercise we heard that there are many things that Network Rail does very well. Our safety

record, in particular, was credited as a real achievement. But it was also clear that train performance and the service that we deliver for passengers and freight users has not been good enough and we are often seen as difficult to work with.

We have listened carefully to this feedback and at the end of January, the Network Rail Board approved a set of proposals to change the business to one that is unequivocally on the side of passengers and freight users and set up to drive better performance by putting the needs of railway users at the centre of all our thinking and decision-making.

We are going to change how we engage with each other and our stakeholders so that we are more focused on our customers and putting passengers first. We will also be changing how we are organised, devolving further to 13 routes, supported by five Network Rail regions (to which we will devolve capital delivery), two service units and smaller teams in the centre.

By devolving operating capability to a more local level and creating more opportunities to align ourselves closely with train operators and stakeholders, we can drive better train performance and deliver a better service for passengers and freight users. We will use this improved alignment to explore a range of different delivery mechanisms for the routes, including partnerships, concessions and alliances. By establishing Network Rail regions, we will also create organisations that are large enough to absorb further devolution and increase route capabilities locally as well as improve relationships with our stakeholders.

These are all decisions in principle and the full details are in development. The proposals are now subject to consultation and safety validation and we expect the whole programme to be complete by the end of 2020.

Delivery Plan

On 28 March 2019, Network Rail published its Delivery Plan for the five years from 2019 to 2024 (CP6). Our Delivery Plan represents the continued development of our plans for CP6 and is the final stage in the periodic review process that started nearly three years ago. The process concluded when we accepted the ORR's Final Determination, which set out what we

should deliver for the funding available, earlier this year. Our Delivery Plan sets out how we will spend the funding provided to us to deliver a more reliable service for passengers.

Our plan for CP6 focuses on four key responsibilities: to run a safe, reliable, efficient and growing railway and includes targets relating to each. The Delivery Plan has been built from the bottom up by our routes in consultation with local stakeholders and rail users and is supported by individual route strategic plans which set out how each route will use their individual funding settlement to deliver the best service for rail users in their area.

Preparing for CP6

Over the past year, we have been monitoring our preparations for the first year of CP6. We acknowledge that we need to increase confidence in our delivery. Our readiness reporting is designed to provide assurances that we are in a strong position to deliver against our commitments for CP6. Effective planning will help us minimise disruption to passengers and train running by ensuring we provide an early view of disruptive access requirements, maintain and renew our assets effectively to minimise delays caused by asset failures, and deliver our outputs efficiently to provide value for money to fare payers and tax payers.

We use a suite of leading indicators that measure the key enablers we need in place for delivery of our renewals, maintenance and efficiency commitments. These indicators are reviewed at local and national meetings including route quarterly business reviews and regular executive level meetings. Further detail on our CP6 preparedness can be found on page 20.

Routes have made good progress in their readiness activity over the year with high levels of access, maintenance resource and renewal delivery contracts in place. Workbank planning made most of its improvement in the latter part of the year and we will continue monitoring progress in this area to ensure we build on this improvement. Development and tracking of efficiency plans has continued to improve over the last year and will remain a key area of focus in CP6 to ensure we deliver against our commitments.

Company Matters

Andrew Haines joined Network Rail as Chief Executive on 14 August 2018 following a period of handover with our previous Chief Executive, Mark Carne.

In July 2018, we welcomed a new non-executive director to our Board. David Noyes is experienced in leading corporate transformations with a focus on improving customer service whilst driving cost efficiency, and skilled in managing devolved businesses in a safety-critical industry. Michael O'Higgins, non-executive director, retired from the Board on 31 August 2018.
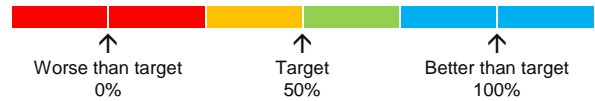
Scorecards

Our scorecards set out performance targets for the year and are a key mechanism by which Network Rail monitors overall business performance.

Our national scorecard provides a clear view of performance throughout the company and is linked to performance related pay for all Network Rail employees. This is underpinned by our route and System Operator (SO) scorecards including the key priorities of those areas.

Scorecard targets are expressed as ranges from 'worse than target' to 'target' to 'better than target'. Performance for each measure is expressed as a percentage achievement between zero (worse than target) and 100 (better than target) and colour coded. Achieving 'target' is stated as 50 per cent.

| Worse than target | Target | Better than target |
| 0% | 50% | 100% |

Each route and the SO engages with their stakeholders to understand their priorities and determine the measures to be included on scorecards for the coming year. Some measures are consistently included on all scorecards and the national scorecard includes the national performance for those measures.

Measures set locally in alignment with train and freight operators account for 40 per cent of route scorecards which is key as track and train work ever-closer together. As train performance measures and locally driven measures are not necessarily consistent across routes and the SO, the national scorecard presents a roll up of all routes' performance against their own targets, as in the example below.

Some routes choose to have individual customer scorecards that sit under the route scorecard. The same calculation methodology applies for customer scorecard lines on route scorecards.

Wales Train Performance	Route scorecard weighting ✖	Target range achievement ＝	Weighted Achievement
TfW PPM	7.0%	10%	0.700%
TfW CASL	3.0%	0%	0.000%
TfW On-time to 3	0.0%	81%	0.000%
GWR Wales PPM	1.0%	0%	0.000%
GWR services departing Severn Tunnel on-time	1.0%	100%	1.000%
CRM-P	5.0%	100%	5.000%
FDM-R	2.0%	100%	2.000%
CrossCountry - On Time Departures from Cardiff	1.0%	52%	0.520%
Wales Train Performance achievement			**9.22%**

National Train Performance	National scorecard weighting ✖	Route achievement ＝	Weighted Achievement
Anglia	7.57%	6.00%	4.54%
LNE	6.86%	4.50%	3.08%
LNW	6.28%	5.75%	3.61%
Scotland	5.09%	2.46%	1.25%
South East	12.33%	9.95%	12.28%
Wales	2.11%	9.22%	1.95%
Wessex	4.06%	9.77%	3.97%
Western	3.94%	8.95%	3.53%
FNPO	1.75%	6.41%	1.12%
National Train Performance outturn			**35.33%**

National Scorecard

Safety	Worse than Target	Target	Better than Target	2018/19 Actual
Lost Time Injury Frequency Rate (LTIFR)	0.344	0.328	0.312	0.310
Close calls raised	153,750	205,000	256,250	277,526
Close calls per cent closed within 90 days	80	85	90	88.9
Train accident risk reduction measures	60	80	100	88.5
Top 10 milestones to reduce level crossing risk	6	8	10	8
Financial Performance				
Financial Performance Measure – gross renewals	£(160)m	£0	£160m	£15m
Financial Performance Measure – gross profit and loss	£(75)m	£0	£75m	£(48)m
Financial Performance Measure – gross enhancements only	£(155)m	£0	£155m	£(180)m
Cash Compliance – income and expenditure	£(50)m/ £200m	£(25)m/ £100m	£0	£0
Investment				
All Delivery Plan enhancement milestones (per cent)	80.0%	90.0%	100.0%	91.5%
Asset Management				
Composite Reliability Index (CRI)	18.0%	19.0%	20.0%	19.9%
7 Key Renewal Volumes	90.0%	95.0%	100.0%	124%
Train Performance				
Train Performance	0.0%	50.0%	100.0%	35.3%
Locally Driven Measures				
Locally driven customer measures	0.0%	50.0%	100.0%	68.5%
Route performance				
Anglia	0.0%	50.0%	100.0%	58.16%
LNE & EM	0.0%	50.0%	100.0%	55.53%
LNW	0.0%	50.0%	100.0%	54.41%
Scotland	0.0%	50.0%	100.0%	60.52%
South East	0.0%	50.0%	100.0%	55.65%
Wales	0.0%	50.0%	100.0%	70.36%
Wessex	0.0%	50.0%	100.0%	49.39%
Western	0.0%	50.0%	100.0%	55.11%
FNPO	0.0%	50.0%	100.0%	53.33%

Worse than target
0 per cent

Target
50 per cent

Better than target
100 per cent

Scorecard Definitions

Lost Time Injury Frequency Rate (LTIFR)

Lost Time Injury Frequency Injury Rate (LTIFR) is the number of days lost to injury per 100,000 hours works. Days lost includes fatalities, RIDDOR Specified Injuries or any work-related injury which renders the injured person temporarily unable to perform their full range of duties on any day after the accident occurred. A lower figure represents a better performance.

Close calls

A close call is any occurrence that has the potential to cause injury or damage. This measures the number of close calls reported by the Network Rail workforce between 1 January 2018 and 31 December 2018 (based on event date). It does not include close calls bulk uploaded by Infrastructure Projects suppliers as this can sometimes include close calls that are already closed.

Close calls closed within 90 days

The percentage of close calls raised since 1 January 2018 that have been addressed and closed within 90 days. This does not include contractor close calls closed by bulk upload.

Passenger train accident risk reduction measures

A measure of our achievement of the key milestones and metrics to reduce train accident risk. This is reported at route level as well as national, providing greater visibility and accountability in delivering a safer railway.

Top 10 milestones to reduce level crossing risk

A measure of our achievement of the top 10 milestones to reduce level crossing risk.

Financial Performance Measure – gross renewals

A measure of how much renewals projects are costing compared to our budget.

Financial Performance Measure – gross profit and loss

A measure of how we are performing against our income and operating expenditure budget.

Financial Performance Measure – gross enhancements only

A measure of how much enhancements are costing compared to baselines.

Cash Compliance

A measure of how well we have utilised the available DfT borrowing in the final year of CP5.

All Delivery Plan Enhancement Milestones

A measure of our achievement of all enhancement projects as a percentage of Governance for Railway Investment Projects (GRIP) 3 and 6.

Composite Reliability Index

A measure of the short-term condition and performance of our assets including track, signalling, points, electrification, telecoms, buildings, structures and earthworks. The index shows the total percentage improvement in asset reliability compared to the end of the previous control period.

Seven key volumes

A measure of delivery against budget of the seven key renewals volumes (plain line track, switches and crossings, signalling equivalent units, underbridges, total earthworks, wire runs, and conductor rail).

Train performance

Train performance measures are set by each route in alignment with their stakeholders' priorities. The measures for each route are set out in their respective scorecards in this document and are rolled up to provide the single figure on the national scorecard showing how each route has performed against its own train performance targets overall. Freight Delivery Metric (FDM-R) is a mandatory measure for each route.

Locally Driven Customer Measures

Locally driven measures (such as customer satisfaction, reduction in works complaints and performance management) are set in alignment with each route and their stakeholders' priorities. The locally driven measures for each route are set out in their respective scorecards in this document, and are rolled up to provide the single figure on the national scorecard showing how each route has performed against its own locally driven targets.

Route Performance

Up to 40 per cent of route performance targets are now set locally, linked to individual customer scorecards and rolling-up into the national scorecard. All train performance measures are devolved and, set in alignment with train operators' priorities. The national scorecard shows the weighted performance of each route against their targets set in consultation with stakeholders. The measures and targets set by each route, that are rolled up to provide this overall performance result, are set out in their respective scorecards in this document.

Safety

The year saw overall improvements in safety performance on the railway network in England, Scotland and Wales. However, sadly, two contractor fatalities were recorded during the year. One occurred at Bearsden station (Scotland) and the other at Stoat's Nest Junction (Surrey). Other major safety events included a member of staff sustaining third degree burns at Godinton substation (Kent) and two other members of staff who sustained serious injuries in a rail vehicle collision at Cholmondeston (Cheshire). We extend our sympathies to those directly involved, and the relatives and friends of those who died or were injured.

We have seen some positive improvements in the workforce safety environment including an improvement of 12 per cent in the Lost Time Injury Frequency Rate from the previous year. We also saw 89 per cent of close calls, safety events that have potential to cause injury or damage, dealt with in a timely manner, an increase of seven percentage points compared to last year.

This year saw an increase in the number of high risk incidents involving workforce safety, and an increase in the number of near-misses with staff and trains. The causes ranged from signaller error in line blockages with no additional protection, to ineffective or ad hoc systems of work being used by site staff. Training and briefing materials aimed at reducing near misses were delivered throughout the business in March 2019. In addition, we have initiated the Near Miss Reduction Programme which sets out to focus on three key areas; planning, competence and communication, as these were identified as causal factors in the majority of near misses.

The safety of passengers is of upmost importance to us, and the work to improve passenger safety and reduce train accident risk continued, exceeding our targets for the year. The level of train accident risk, monitored through the industry precursor indicator model, is 20 per cent better than the original CP5 target. Continued progress has been made in implementing risk reduction workstreams, with 92 per cent of milestones completed compared to a target of 80 per cent.

During the year the ORR issued five 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. We have complied with three and are on track to comply with the remaining two. Details can be found on the ORR's website.

On 13 December 2018 Network Rail was sentenced at Maidstone Crown Court for breach of Regulation 3(1)(a) of the Management of Health & Safety at Work Regulations 1999 in relation to risk assessment after a road vehicle injured a signaller at East Farleigh level crossing in May 2017. A fine of £200,000 was imposed

and Network Rail was also ordered to pay prosecution costs which had been agreed at £86,389.21.

Trespass Improvement Programme

A new approach to tackle trespass has been implemented and is being embedded across the industry, including in Network Rail, train and freight operators, the British Transport Police, the Rail Safety and Standards Board and other partners. The collaborative working has enabled us to better use data to build trends and target activity. The first ever Trespass Conference took place on 30 April 2019 and was well attended by the industry.

The Trespass Improvement Programme ran a successful public awareness campaign, You vs Train, which had 364 items of coverage in national, regional and consumer titles including the BBC, ITV and Sky News. It also had a 6.3 million combined reach from celebrity twitter accounts. Coverage included a programme on Tom Hubbard, whose experience was the focus of the campaign, which showed how his life and family had been impacted by his injuries.

An innovative programme of online educational engagement has been delivered to over 950,000 students across the country and is now concentrating on hot spot areas. We now have, for the first time, national partners in sport and the community, the English Football League and Street Games respectively. They will both concentrate their efforts across over 40 hot spot areas with Street Games helping us to communicate with the hardest to reach young people. There is also a dedicated industry website hosted by the RSSB which allows industry partners access to tools and information on how to tackle trespass.

Small Talk Saves Lives

Network Rail continued to work with Samaritans, British Transport Police and train operating companies, to continue the '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. Phase 3 of the campaign was launched at Kings Cross on 7 November 2018. 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. At 252, the number of suicides on our infrastructure remained at similar levels to the previous year but we recorded 2,270 suicide interventions, an increase of 33 per cent on last year.

Level crossing risk reduction

Two accidental level crossing deaths were reported in the year, fewer than in any previous year. At the beginning of the control period, a £99 million ring-fenced

fund was identified to maximise risk reduction at level crossings through closures and improvements. Routes each committed to achieve their share of the targeted risk reduction. With this and other risk reduction work, we have achieved nine per cent gross level crossing risk reduction since the start of the control period. As well as installing safer technology, 53 level crossings were closed in the year, bringing the total to 372 closures in the control period. Another 29 level crossings have been downgraded in risk status in the control period, with a further 63 temporarily closed through Traffic Regulation Orders. Eight of the top ten level crossing risk reduction milestones were delivered in the year.

Home Safe Plan

The Home Safe Plan consolidates many projects into a workable plan to deliver the greatest health and safety impact. The year saw unprecedented success with over 96 per cent of 131 Home Safe Plan milestones completed. Current 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
- Integrated Management System
- Suicide Prevention Programme.

Occupational health

Following the implementation of a new IT system by Network Rail Occupational Health and wellbeing (OH&W) service provider, 2018/19 saw a continued successful delivery of occupational health services. The end of year compliance figure to the hand arm vibration syndrome (HAVS) health surveillance programme was 92.5% collectively across the organisation, further broken down by a 92% compliance rate in Tier 2 and 94% in Tier 3. This was a positive end of year figure and evidenced sustained year on year compliance as a result of collaboration with our colleagues in route business and functions and our occupational health providers. We remain committed to robust assurance of our compliance to ensure this is enhanced during our 2019/20 programme. As part of our Mental Health project, we have successfully developed a Network Rail bespoke Line Managers training which will be rolled out

to a specified cohort in 2019/20, implementation and embedding of this training will continue throughout CP6.

Our focus for 2019/20 will be commencement of delivery against the OH&W strategy and key areas of focus of which there are 5 areas:

- Procured services
- Data management
- Mental Wellbeing
- Legislative Compliance
- Audit and Assurance.

One of our immediate workstreams will include a refinement of OH&W services as Network Rail requires a highly flexible Occupational Health service that supports increased workforce productivity, reduces absence, supports health improvement and responds to local needs. To this end we are working on a new model of Occupational Health delivery to ensure that not only competency, health surveillance and attendance are reviewed at our bespoke onsite clinics, but opportunity is given for an overall wellbeing check and employees are provided with additional support where deemed necessary. The new OH&W delivery model is currently on trial in the South East route; if successful, the model will be rolled out in a controlled approach throughout CP6.

Train Performance

Passenger Train Performance

The Public Performance Measure (PPM) is the percentage of trains arriving on time at their final destination. 'On time' means within ten minutes of scheduled arrival time for Long Distance services, and five minutes for London & South East and Regional services. A higher result represents better performance.

A train is counted as being Cancelled and Significantly Late (CaSL) if it is cancelled (at origin or en route), 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).

At year-end, PPM MAA (Moving Annual Average) for England & Wales was 86.1 per cent against a forecast of 90.0 per cent; Scotland PPM MAA was 87.4 per cent compared to our forecast of 90.5 per cent; and CaSL MAA for England & Wales was 4.4 per cent against our forecast of 3.3 per cent. The commentary below provides a national overview of the train performance challenges.

Train performance for the year was dominated by issues with delivering the operational plan against the timetable, following the significant changes made for the

May 2018 timetable. As a result of changes to infrastructure and new trains and services, the scale of the May 2018 timetable change was unprecedented. The change required the rescheduling around four times more serviced than a normal timetable change. In February 2018, we announced that due to the complexity of changes, and a significant delay to Network Rail's major electrification work between Manchester and Preston, there would be a temporary reduction to informed traveller timescales (usually, the timetable is made available to the public 12 weeks before the date of travel). We immediately established an Informed Traveller Recovery Plan and an industry Programme Management Office to coordinate delivery of the plan. However, when the timetable changed in May, passengers in some parts of the country experienced unacceptable levels of disruption.

From a performance perspective the impact was clear; National PPM was 88.9 per cent in April 2018, and MAA at 87.6 per cent. By June 2018, PPM was 85.8 per cent and the MAA had dropped to 87.0 per cent.

Four operators have met Scorecard PPM targets for the year with one operator (TfL Rail) also meeting their target for CaSL. While noticeable net improvements have been seen over the year, for some operators this has been overshadowed by the challenges faced and the overall levels of performance and reliability experienced by passengers and remains below the level we aspire to achieve.

Mitigating the immediate impact and recovering performance through operational changes, timetable updates and increased assurance of the December 2018 timetable change have all helped to stabilise and drive improvement, particularly for the operators most directly affected (GTR, Northern and TransPennine Express). The Informed Traveller Recovery Plan was delivered in line with the original planned end date of late April 2019, and we have now recovered to offering the weekly amended timetable to operators 14 weeks prior to travel, having operator responses by 13 weeks prior to travel, and uploading and publishing the timetable 12 week prior to travel. The exception to this is GTR, and an individual recovery plan is in place for this.

At the end of 2018/19, overall performance remains below the levels we saw before the May timetable change and further work is still required to maintain momentum on the recent improvements.

The year was also notable for a sustained heatwave over the summer. Heat related speed restrictions caused issues with operating the railway to the timetable, affecting resilience, while the drying out of embankments and cuttings increased the longer-term impact on performance. The drop in performance on hot days was broadly comparable with previous years but the sustained period of hot days meant the overall impact was substantially higher. The stage gate reviews

for summer preparation have been reviewed on the basis of lessons learned from this year and remedial action on the longer-term infrastructure degradation caused by the hot weather is included within route delivery plans.

Not all of the performance challenges faced over the year can be attributed to the heat or the timetable changes. The delay category of 'External Delays' was 25.6 per cent worse than forecast fuelled by a rising impact of trespass and suicide on the railway. The award-winning suicide prevention programme in conjunction with the Samaritans is evolving to address this continued challenge and the trespass improvement programme has implemented a national awareness campaign; updated key materials for tackling the issues and appointed a dedicated SME to support the industry.

Track, Network Management, Fleet and Traincrew were the other delay categories impacting heavily on underperformance over the year. The heat and the timetable issues have exacerbated the impact of these categories, though the introduction of new fleet will also have impacted on fleet and traincrew. One of the biggest risks identified for CP6 is the vast amount of new fleet introduction and cascade which is planned. As an industry we are working on plans to mitigate any risks. For Network Management the subcategories of infrastructure, and signalling and control were the most prominent and our plans for CP6 detail the activities to tackle this.

Underlying performance heading into the autumn period was still depressed from the timetable change and summer heat. Consequently, performance during autumn was poor, however the dip in performance was a slight improvement on previous years and reflects the enhancements made to autumn preparation which we are seeking to improve further in 2019/20.

The Donovan Review and Holden Review highlighted performance challenges for specific operators (ScotRail and SWR respectively). Both identified short term opportunities to improve alongside deep-rooted structural issues, plans to address these are being progressed and are delivering in line with agreed plans.

Freight Train Performance

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 94 per cent, meeting our scorecard target and exceeding the regulatory output of 92.5 per cent. This represents a 0.6 per cent improvement on last year.

The first seven periods of the year were challenging with a mix of storms, heat related delay and an increase in timetable related delay resulting in the year to date

figure being roughly 1 per cent below where we would expect it. However, as a result of good asset performance, lower than average disruption through autumn and a mild winter period performance has recovered well. Freight operators have also performed well – with delay minutes on TOC per 100km meeting target.

Network Availability

The concept behind the Network Availability metrics is that a lower number represents a lower level of negative impact on passengers and end freight businesses as a result of disruptive possessions. This includes the number of passengers or freight trains being impacted, the impact of extended journey times and the times of day that the disruptive possession is planned for. Issues identified in in 2016/17 have proven that the system producing the output numbers is erroneous under specific circumstances, and therefore the absolute numbers produced through CP5 are unreliable.

Possession Disruption Index – Passenger (PDI-P) measures the economic value of the impact of possessions on excess journey time as experienced by passengers. The measure aims to reduce the disruption experienced by the customer and is expressed as an index (PDI values divided by the PDI at the end of 2007 - 2008).

Possession Disruption Index – Freight (PDI-F) provides a measure for the 'availability' of track for freight use, weighted by the level of freight traffic operated over each section of track. The measure aims to ensure that freight services experience no increase from 2007/8 levels of disruptions resulting from engineering works. The measure is expressed as an index normalised by the MAA for 2007 - 2008.

The PDI-P ended 2018/19 at 1.15, against a target of 0.58 and PDI-F ended the year at 0.97 against a target of 0.73.

As previously reported two inherent flaws were identified with the Network Availability and Reporting System that captures and reports the PDI-P and PDI-F metrics meaning that the PDI-P out-turn has become unreliable during CP5, not representative of our performance and not comparable with the regulatory targets set the start of the control period. We consider that it is likely that the PDI-F calculation has similar issues to PDI-P. We have continued to report PDI data until the end of CP5 for regulatory purposes.

In its report 24 January 2019, the ORR concluded that PDI has been a problematic measure that had not offered the clarity and insight that other regulated outputs have provided and that the ORR would take no further action on the failure to meet the regulated targets for CP5 given the shortcomings in the measure and reporting systems.

To provide assurance 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 we have undertaken additional reporting measures which monitor the level of access disputes raised against Confirmed Period Possession Plan (CPPP) and Engineering Access Statement (EAS) and additional information relating to the notification discount factor.

CPPP & EAS Disputes

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. This is a leading indicator.

The number of CPPP disputes opened during 2018/19 were 111, increasing by 27 when compared to those opened in 2017/18. EAS disputes opened in 2018/19 were 40 an increase of 1 when compared to 2017/18.

The increase in the number of disputes raised during the year may indicate that following introduction of the Access Framework the process is being followed and communication with operators draws out the issues. It also allows us to identify where customers are less satisfied with our proposed access plans and use the Dispute process to formally challenge our plans.

Notification discount factor-% Possessions notified post TW-22

Part 1) The Timetable Possession Notification Discount Factor measures the percentage of disruptive passenger possessions notified in each of the three possession notification bands. The discount factor related to the amount of schedule 4 compensation that Network Rail pays to operators for planned disruption to services, and serves as an incentive to plan possessions as far in advance as possible. This helps passengers plan their journeys better as fewer changes are made to the published timetable.

Part 2) Possession Notification Discount Factor measures the number of payments and compensation spend of disruptive passenger possessions. This provides an incentive to plan possessions as far in advance as possible. This helps passengers plan their journeys better as fewer changes are made to the published timetable.

The moving annual average (MAA) for late change notification payments made less than twelve weeks in advance ended 2018/19 at 10.46 per cent an adverse increase when compared to the 2017/18 exit figure of 8.30 per cent.

The MAA for spend ended the year at £34.93m increasing when compared to the end of 2017/18 of £29.08m. The non-compliance with Informed Traveller timescales meant that, according to the contractual framework, all compensation was paid at minimum

discount factor These payments have been excluded from these figures to ensure they represent a true reflection of when the access was planned. However, due to the reduced informed traveller timescales and the associated improvement plan, operators have not been as averse to late change as they might have been..

Factors during the year impacting late change notification payments included the North West Electrification Phase 4 (Bolton) and follow up works and late changes for the Great Western Electrification Programme, West Electrification Programme, Stirling-Dunblane-Alloa (SDA) Electrification and an emergency timetable due to an enforced exclusion zone at Ayr station because the privately-owned former Station Hotel had been deemed unsafe.

Late change to possessions

Measures the number of new, cancelled, curtailed or extended disruptive possessions that were agreed between Confirmed Period Possession Plan (CPPP) and the Weekly Operating Notice (WON) as approved by the Engineering Access Planning unit (EAP).

Following the cessation of bi-weekly late change panel in 2017/18 there was a noticeable increase in the number of late changes after CPPP. To refocus attention on late change engagement between Capacity Planning, Routes and Operators has been re-introduced since the beginning of 2018/19 with a late change control process and associated tele-conferences. The total number of late changes for 2018/19 was 1701 compared to 2464 in 2017/18, representing a 31% reduction, with the year-end level of late change, reported as the Moving Annual Average (MAA), being at the lowest level for 22 periods.

Control Period 6 will see the continued focus on reducing late change requests with an emphasis to encourage a culture of continuous improvement into the causes of late change.

Financial Performance

Our corporate scorecard assesses financial stewardship across four measures; cash compliance, financial performance for renewals, profit and loss (P&L) financial performance and financial performance for enhancements.

Our biggest financial challenge this year was to use the loan from the government optimally, delivering improvements for passengers as effectively as possible. As shown by our cash compliance metric we landed on the target, with improved business forecasting and tight fiscal management making a real difference.

Financial performance for renewals this year was the best result in the control period, owing to better planning of works and increased volume delivery, spreading fixed costs across a larger number of units to generate unit cost savings.

P&L financial performance was not as good as planned, due to continued issues with train performance. Heat in the summer months affected asset resilience whilst the introduction of the new train timetable resulted in additional services for passengers, but increased congestion and disruption.

Financial performance for enhancements was impacted by increases in programme costs across some of our most ambitious projects as contractor costs escalated and programme complexity intensified.

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

Investment

Network Rail has completed a significant five-year 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 some key lines.

The first Northern electric passenger trains went through Bolton on 11 February 2019, following the completion of the North West Electrification Programme Phase 4 Manchester to Preston Electrification. This upgrade is part of the multi-billion pound North of England Programme to transform rail travel through track and train improvements. Project delays contributed to the disruptive introduction of the May 2018 timetable, with passengers facing overcrowding and journey cancellations. The completion of this project should now give Northern and TransPennine Express passengers faster and more comfortable journeys as a new fleet of electric trains replace old 'Pacer' trains.

Western route has successfully delivered electrification upgrades between Wootton Bassett Junction, near Swindon, and Bristol Parkway Station. These upgrades will enable passengers to experience the benefits of Great Western Railway's (GWR) new fleet of electric, Intercity Express Trains (IETs). This is set to improve the passenger experience by making journeys smoother, quieter and faster. In addition to providing tangible benefits for passengers, such as more seats and better legroom, these new trains can reach faster speeds giving a greater opportunity for services to recover following performance incidents. The upgrades also allow reduced journey times and more frequent direct services from Bristol Temple Meads station and Bristol Parkway station to London Paddington.

In Scotland, the Stirling-Dunblane-Alloa electrification project, which electrified the lines from Polmont Junction and Greenhill Lower Junction through to Stirling, Alloa and Dunblane was completed in December 2018 to programme. This facilitated the introduction of new Class 385 Electric Multiple Units (EMUs) and the withdrawal of existing Diesel Multiple Unit (DMU) rolling stock. In addition, the Grangemouth Freight Branch was

electrified in March 2019 to allow electric freight locomotives to service the freight facilities served by the branch line. The project to electrify the Shotts line was successfully completed in March 2019, thus allowing EMUs to be introduced on this route from May 2019.

In December, Waterloo International, the former Eurostar terminal at Waterloo station, was re-opened for suburban high density ten-car trains, as part of the £800 million project to increase capacity on the South Western Railway network. This will provide greater capacity and resilience for Waterloo station and immediate passenger benefits, with three new platforms now in use for regular services to Reading, Windsor and south-west London. This follows on from work to extend platforms at Waterloo, and nine other stations along the route, making room for longer trains, with more than 15,000 extra seats provided for passengers over the last year. By December 2020, there will be a total of 52,000 extra peak time seats into and out of Waterloo. Beneath the new platforms, work is underway to open new retail and leisure facilities. This is due to complete in 2021.

As part of the Aberdeen-Inverness Improvement Project Phase 1, We successfully completed a 14-week upgrade between Aberdeen and Dyce to introduce a second line of track. Signalling systems have also been upgraded and eleven bridges either replaced or refurbished. Phase 1 completion is part of project plans to increase services, cut journey times, and to provide more seats for customers leading to improved job and leisure opportunities.

Autumn marked the completion of a major transformation project at Liverpool Lime Street station. Two new platforms were introduced at the station while existing platforms were extended and remodelled to accommodate longer trains with more seats for passengers. Signalling upgrades have also been completed to allow more trains to run in and out of the station, more reliably. It also means services can be recovered quicker during times of disruption.

In October, as part of the Midland Main Line programme, Derby remodelling was completed following months of engineering works that required a series of disruptive closures which impacted passengers. It was the biggest rail investment in Derby station for decades and it removed a key bottleneck on the network. Track was renewed and the layout to the south of the station completely remodelled to enable services to run in and out of the station more reliably. One new platform was installed, and existing platforms have been realigned and lengthened to create vital space for passengers. Extensive upgrades to signalling equipment have also been completed. As a result, signalling control has now been moved to the East Midlands Control Centre in Derby. This means more reliable journeys for passengers, accelerated rail traffic management and reduced delays.

On 25 October 2018, following project delays, the first tram-train in the UK entered service between Sheffield and Rotherham Parkgate, thanks to a partnership between Network Rail, Stagecoach Supertram, South Yorkshire Passenger Transport Executive and the Department for Transport. The launch marks the culmination of a complex pilot project to develop standards, infrastructure and ways of working which allows the vehicles to run on both Sheffield's tramlines and the national rail network. New tram-train services are a key milestone that will give commuters cleaner, more frequent and more reliable journeys across Sheffield and Rotherham. As a result, these services will bring new choices for travellers in this area, supporting jobs and the local economy.

In October 2018, driven by TransPennine Route Upgrade programme scope, infrastructure improvements were completed to provide parallel moves at Bradford Interchange to and from Leeds and Halifax. Track and associated signalling were installed on the approach to Bradford Interchange station and old signalling technology from lineside signal boxes at Mill Lane area were 'recontrolled' to the state-of-the-art Rail Operating Centre in York. This upgrade provides greater services flexibility between Leeds and Halifax and allows more reliable journeys for passengers and improved journey times.

We also completed electrification from Reading to Newbury, on the Great Western Main Line, that enables greener and more reliable journeys for passengers, improves connections across southern England and South Wales, and stimulates economic growth in the South West and beyond. New electric, and bi-mode Intercity Express Trains are now able to run to Newbury providing 4,500 extra seats every day between Newbury and London Paddington from early 2019, as part of wider timetable improvements. Newbury passengers are also able to benefit from new Electrostar commuter trains which provide up to 20 per cent more seats than the trains they replace.

Regulated milestones due in 2018/19

In this Annual Return we have used the March 2018 Enhancements Delivery Plan (EDP) as the baseline against which we are reporting our delivery of regulated outputs. The EDP sets out the outputs, scope and key milestones for projects. An update to the EDP is published quarterly to keep stakeholders informed of our regulated obligations.

Network Rail's initial obligation for each project is to develop it to GRIP 3 (Governance of Railway Investment Project stage 3). This stage examines the different engineering options available for delivering the project and selects a single option to be developed.

Once GRIP 3 is completed and funding is committed, the GRIP 6 / Entry into Service (EIS) milestone is then

set to be the regulated obligation for that project. This stage focusses on the physical work associated with delivering a project and ends with completion/commissioning of works.

The table below sets out our performance in achieving our Regulated Outputs in 2018/19 against the March 2018 EDP. Each milestone is assigned a status with the following definitions:

- **Complete** – a milestone that was completed on time.
- **Revised** – a milestone that was not completed on time and is deemed to be for reasons outside of Network Rails' control, as per the regulatory change control process.
- **Missed** – a milestone that was not completed on time and deemed to be within our control.

Table 1

	GRIP 3 No.	GRIP 6/EIS No.	Total No.
Complete	7	35	42
Revised	3	13	16
Missed	0	6	6
Total	11	59	70

Project Management Capability

During June 2017, Network Rail carried out an assessment of its project management capability using the Portfolio Programme and Project Management Maturity Model® (P3M3). This has been independently assessed and benchmarked by Aspire Europe 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. In 2018 Investment Projects assessed their signalling business and Network Rail is now the global benchmark for project management. Our programme integrated assurance is now a case study for best in class worldwide. Aspire Europe has carried out 400 assessments in 100 different project and programme management companies worldwide.

Asset Management

Asset Reliability

In 2018/19 the CRI, which measures the cumulative improvement in asset reliability (weighted to reflect the impact on passengers and freight users) during the current Control Period, continued to improve reaching 20.0 per cent, which was better than our 19.0 per cent target. This improvement was driven by a combination of actions including:

- Route teams focusing on improving the reliability of the most critical lines of routes and assets

- our "intelligent infrastructure" remote condition monitoring programme which is increasingly integrated with reliability-centred maintenance regimes
- improvements to track management information and decision support tools
- targeted improvements in component design
- the introduction and training in 'Design for Reliability' techniques.

This improvement has been achieved in spite of the most severe summer weather (in terms of the combination of high temperatures and lack of rainfall) for at least 10 years, which had a significantly adverse impact on our track and signalling system reliability during the summer, causing disruption to passengers and freight users. For track assets, this arose due to a sharp rise in speed restrictions and bumps reported, partly due to a necessary reduction in some maintenance activities (to minimise the risk of track buckles). As a result, geometry fault repairs were delayed, while some "at risk" sections were not able to be managed by normal additional maintenance, including tamping. This was exacerbated where shrinkage of clay sub-soil resulted in new geometry defects. Following extensive Route interventions to address faults, combined with more normal weather conditions, the number of incidents dropped significantly from Period 8 onwards.

Our underlying improvement in the management of summer weather risks was evident during the year, nevertheless. The review of summer performance highlighted that our management of assets in summer has improved since 2016, relative to weather conditions, with specific improvements implemented in track risk controls and signalling component reliability. Over a longer timescale, our improvements in track weather management have led to a dramatic reduction in buckled rails (by around 75%) compared to similar hot years (2003 and 2006).

Nevertheless, we have reviewed the lessons learned from the management of hot weather in 2018/19 and are actively progressing a number of initiatives including track management for hot weather and a review of location case design options to mitigate the impact of high temperatures and rapid changes in temperature on signalling components. These are being supported and tracked through the recently introduced Asset Management Framework Committee, which draws together a strategic review of asset management.

While the total number of service affecting failures did not reduce in 2018/19 due to the hot and dry weather, the overall reliability impact (as measured by CRI) did improve due to better reliability on both higher criticality lines of route and asset types (including electrification and points failures), which have the greatest impact on passengers and freight users. In addition, CRI benefitted

from ongoing improvements in the reliability measures for station buildings, structures and earthworks, which although not directly affecting train service performance, are important parts of the overall asset reliability framework.

The most significant improvements at asset level were for signal failures (11 per cent better) and points failures (10 per cent better). Signal reliability had worsened several years ago due to high failure rates of LED signal components introduced to replace conventional lamp bulbs. Following a detailed product and supplier quality review and extended product trials, a significantly enhanced version (Mk3 LED Light Engine) has continued to be rolled out during the year after 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 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 our supplier quality assurance.

Points failures have improved by an average of four per cent per annum over the last two years, albeit with a slight increase in 2017/18 followed by the significant drop in 2018/19. This volatility reflects the impact of the harsh winter weather in 2017/18 triggering failures including with points heating. The underlying improvement in reliability reflects the benefit of improved installation and set-up of points, continued rollout of tubular stretcher bars, component reliability enhancements to point equipment and remote condition monitoring. During the year, the roll-out of monitoring was completed for a further type of points and track circuits.

Underlying engineering-led improvements are continuing with the development and trials of improved designs and equipment provides greater resilience in normal operation and when subject to temperature variations.

In addition to extending the scope of monitoring equipment, improvements have continued in the process to diagnose faults, responding to remote alarms and improved maintenance interventions, to ensure we deliver the maximum benefits from the capital invested. Trials of enhanced points and track circuit monitoring, aiming to derive more benefit from existing remote condition monitoring, have been conducted on four routes, with final reviews in March 2019. These have demonstrated very positive results, with the process and algorithms to be implemented as part of the CP6 Intelligent Infrastructure programme. They showed that we can detect degradation earlier than currently possible, using automated analysis and Bayesian

statistical approaches to diagnose potential failure modes, and flag a need for interventions which can prevent asset failures. This represents a significant change in capability, providing Control Centre technicians access to automated diagnostic assessments enabling them to quickly assess fault 'alerts', and provide additional information to teams responding on the ground, helping to reduce rectification times and minimise disruption to end users.

The Intelligent Infrastructure programme also utilises train-borne monitoring of track and overhead lines. For the future this includes the assessment of using in-service trains to supplement the dedicated fleet of monitoring trains. The latter already use 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. Further enhancements to the measuring systems and aligning several datasets from track monitoring equipment as part of the Intelligent Infrastructure programme are underway and expected to be rolled out from 2019.

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

- Failure of signalling power supply on 4 July 2018 to one workstation of the Three Bridges Route Operations Centre (South East Route), controlling signalling for the Streatham area. Due to the complexity of failure, 1,085 trains were cancelled (or part-cancelled) and 15,490 minutes delay to trains was incurred. The failure was caused by poor quality control during manufacture and in installation. The impact was exacerbated by failures of the back-up power supplies due to a number of factors including an unrelated fault on another switch panel, while rectification was delayed by the complexity of the failure symptoms. A range of recommendations (including improvements to quality control in manufacturing, installation checks, and systems design confirmations) arising from this incident are being progressed.
- Overhead line defect in Kings Cross Delivery Unit (LNE & EM Route) on 1 May 2018, requiring a section insulator to be replaced, and a short length of contact wire installed, after the wires had sagged and wrapped around the pantograph of the train. Performance impact included 251 trains cancelled

and 6,372 minutes delay to trains. Root-cause was wear within the insulator, poor set-up, and a failure of maintenance inspections to identify this, and the lessons learned from the incident have been addressed.

- Overhead line dewirement at Lichfield North Junction in Stafford DU (LNW Route) on 31 January 2019. Performance impact was 38 trains were cancelled and 11,687 minutes delay to trains were incurred. The root cause was identified as the failure of an overhead line component (strut tube) through water ingress. A maintenance solution for this failure mode is in place on the Route, with drainage holes being added where found to be absent.

In addition, the number and impact of Temporary Speed Restrictions (TSRs) continues to be a concern, as it can cause short delays to a large number of trains, perturbing the network particularly in highly congested areas. The effect of the prolonged hot weather caused track quality to deteriorate resulting in an increase in track TSRs to an eleven-year high, significantly impacting passengers and freight users. As a result, the average weekly number of speed restrictions in place for at least seven days increased by 18 per cent compared with 2017/18, although the number of speed restrictions in place by year-end dropped back significantly from the summer peak. LNE & EM, LNW, Western and Scotland routes beat their year-end target with the lowest number of TSRs on LNE & EM since CP4. Wessex, Anglia and South East routes were still recovering at year-end from the longer-term effects of the summer. The Routes have plans in place to reduce the risk of similar increases in future with proactive plans including: tree removal on embankments, tamping poor sites in advance of summer and early intervention repairs to deteriorating sites detected using the newly enhanced decision support tool.

Notable developments this year have been the improvements in the Track Decision Support Tool and the value being gained from it (accessible by all Delivery Units and Routes) and delivery of the Abtus Max trolley to help detect and remove Cyclic Top faults, which account for around 40 per cent of all track speed restrictions. In addition, a key area of focus has been on identifying more accurately the impact of TSRs on train performance (and hence passenger and freight users) and providing visibility of this to improve prioritisation of their removal. A cross-functional workstream has continued to enhance and embed the use of the impact estimation tool, with a follow-up project now underway to exploit the opportunities from improved tools based on detailed train performance data to more accurately quantify the scale of timeloss for each TSR.

Following on from the Asset Management Excellence Model (AMEM) review of asset management, which is explained further on page 15, a Reliability Management process review with Routes and STE functions has commenced to identify gaps, opportunities to be exploited and priorities for future development. It will also support good practice sharing including reliability studies and is already playing an important role in helping to improve and standardise the use of analysis tools across the network.

Renewals

Our National Scorecard measures our delivery of the seven key renewals rolumes, against forecast. These comprise : track plain line, track switches and crossings, signalling, underbridges, earthworks, overhead line equipment and conductor rail. At the end of 2018/19, delivery for all seven of the renewal volumes was above target.

Robust delivery saw plain line volumes achieve an output that was 30 per cent higher than planned, with strong performance in all three interventions types. All routes outperformed their 'deliverability risk adjusted' baseline.

S&C renewal volumes were 27 per cent ahead of target, as all routes delivered over and above the budgeted volumes. 80 per cent of the outperformance was from LNE-& EM, LNW and Southeast routes, where refurbishment works have been delivered.

Signalling renewals volumes were three per cent favourable to target. Budgeted schemes have been delivered except for Lewes to Newhaven (Sussex) and Feltham (Wessex), where commissioning was deferred to CP6. The anticipated risk to delivery that was budgeted in LNE & EM and Scotland routes did not materialise which contributed to the outperformance.

Underbridge delivery was eight per cent above target, driven primarily by a prior year omission of works at Punch Bowl Viaduct (LNW) along with additional interventions at several sites in LNE & EM and Western. LNE & EM and LNW routes have underperformed against target as work has been deferred for delivery in CP6.

Most routes benefitted from emergent works, in respect of earthworks, with the full year performance 22 per cent ahead of target. The increase is broadly due to emergent rock cuttings and soil cuttings works delivered within most routes. The exception being in LNW where volume increases are due to scope changes, which have been offset by work deferred to CP6 and a correction to over reported volumes in the previous year.

Planned OLE wire runs in Anglia, LNE & EM and Scotland were delivered. Anticipated risk to delivery in Anglia did not materialise and emergent works were also delivered in LNE & EM. This contributed to the volume outperformance of 17 per cent in OLE wire runs. Conductor rail renewals volumes planned in Sussex and Wessex have been delivered on target.

Developing technology to improve service quality and affordability

Through research and development (R&D) we make long term investments to better enhance, manage, operate and maintain the future railway. CP5 is the first control period where we established a central fund for strategic R&D that is geared to progress new applications of technology that are likely to provide benefits in subsequent control periods. This has not only enabled us to deliver key milestones and successes with ambitious R&D projects but also to build partnerships, establish collaborative funding arrangements and accelerate our learning on how we make R&D effective. These elements have combined to ensure we have the capability to not only deliver the £357 million R&D portfolio planned for CP6 but to manage the portfolio such that the outputs are well conceived to be deployed.

Our learning in CP5, including the testing of quality, assurance, management and control arrangements for R&D has paved the way for a single good practice approach to manage R&D. The result of this is that CP6 is the first Control Period where we have established a single integrated portfolio for R&D across the Network Rail achieve scale, pace, efficiency and effectiveness.

Highlights from R&D projects completed in 2018/19 include piloting enhanced points condition monitoring (ePCM), enhancements to Plain Line Pattern Recognition (PLPR) and completing the proof of concept and specification for Degraded Mode Working System (DMWS). ePCM equips us to detect anomalies in the functioning of points much earlier leading to less reactive interventions being required. Although PLPR is deployed on substantial parts of our network, deep learning using Artificial Intelligence has been evolved during 2018/19 which will start to be applied to realise cost savings and reduce safety risk through enhanced quality and consistency of track condition data in CP6. DMWS will help keep passengers and freight moving, enabling train operators to restore services after signalling system failure by reducing the loss of train paths without compromising safety. The progress in 2018/19 provides a platform to develop to an anticipated first deployment around the middle of CP6.

The European Shift2Rail programme, in which Network Rail is a founding partner and co-ordinates the infrastructure programme, is now well established and will continue through much of CP6. 2018/19 saw completion of the In2Rail (www.In2Rail.eu) and Roll2Rail (www.Roll2Rail.eu) sub-programmes. Outputs from In2Rail include an intelligent power supply demonstrator and mapping energy flows as building blocks to improve energy efficiency; plus redesign to improve the performance and reliability of switches and crossings. Outputs from Roll2Rail include building a common approach to calculate train energy consumption; and designs to reduce vehicle weight,

noise and vibration to reduce the impact of trains on the track and the environment around the railway. The outputs feed into further stages of development and demonstration in the CP6 R&D portfolio.

Our success in 2018/19 is not just about the progress we have achieved with R&D projects but is also about the way we have achieved that progress, being recognised as an industry leader and a dependable partner. We secured a major bi-lateral partnership with the Dutch infrastructure manager ProRail to collaboratively fund and deliver R&D for shared challenges. This builds on and complements our role in the Shift2Rail programme where we work with many partners and benefit from a larger scale and broad programme of R&D investments.

Asset Management Excellence Model (AMEM)

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 had a regulated target to reach 72 per cent by January 2018. A higher percentage indicates a better performance. Between late 2017 and early 2018 Asset Management Consulting Limited undertook an AMEM assessment to calculate the measured progress made to January 2018. This assessment confirmed an overall group average of 72 per cent. Scores for each of the six subject group areas of Asset Management are shown in table 1.

Table 2

Subject Group	2013/14 Actual	2017/18 Actual
Asset Management Strategy & Planning	65.4%	74.8%
Asset Management Decision Making	62.8%	69.7%
Lifecycle Delivery	67.5%	70.8%
Asset Information	70.4%	74.0%
Organisational & People	66.1%	69.5%
Risk and Review'	63.9%	72.7%
Total	66.0%	72.0%

The AMEM results confirm that over CP5 Network Rail has made strong progress in every group and the range of absolute scores noted for each group has tightened from previous exercises.

One challenge surrounding devolution is the degree of embedment at route level. The review has confirmed that strong progress is being made at route level in applying integrated strategic and route asset management planning. This is now being extended by Routes own Asset Management Improvement activities that are using the International Standard for Asset Management (ISO 550001) to allow benchmarking and further improvements to be identified.

Asset Data Quality

Asset Data Quality is assessed using confidence grading for (i) data reliability (an alpha grade) and (ii) accuracy and completeness. (a numeric grade)

Data reliability (alpha) represents the process and governance for producing data from 'A' (best governance) to 'D' (poorest governance). Ahead of CP5 our data reliability scores varied markedly across the assets from B to D. Today we are at 'A' for each asset having implemented a new Asset Data Governance and Management System across all Routes and central functions.

The numeric element of the Asset Data Quality asseseement represents accuracy and completeness. Ahead of CP5 we scored between 2 and 5 depending upon per cent accuracy.

Grade 1: >99 per cent
Grade 2: 95 per cent to 99 per cent
Grade 3: 90 per cent to 95 per cent
Grade 4: 80 per cent to 90 per cent
Grade 5: 60 per cent to 80 per cent.

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?

In order to prioritise improvement we identified a critical subset of our data. We established and agreed a specification of this data with the ORR. By April 2017 track, operational property, signalling, earthworks and structures had all achieved the target grade of 2 (95 per cent to 99 per cent).

While large parts of electrification & plant and telecoms are also at A2, at 2017, we have had to continue to improve these datasets to realise A2 by March 2019.

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. 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 to sustain 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 including the next phase of asset information specification and measurement against the A2 criteria.
- make decisions based on known and agreed business risk profile
- act to manage unacceptable levels of business risk.

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.

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. The CSAMS completion strategy. focuses 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 is delivered as early as possible. The ORR is kept informed of progress through quarterly technical liaison meetings.

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 provides a 'logical view' of the rail network, showing the relationship between individual assets, key identifying information and detailed asset information. INM allows users to visualise new sections of the network and provides additional information and insight to support teams responsible for capacity management planning. This milestone has now been completed and evidence has been sent to the ORR.

Intelligent Infrastructure

The CP6 Intelligent Infrastructure Programme has been created to improve asset management across Network Rail, delivering for passengers and freights users by improving asset reliability and driving capital and operational efficiency

This will be achieved through product and maintenance regime design and capturing, analysing and exploiting asset data to make better planning decisions about investment in our assets to improve overall availability. Ultimately, the goal is to improve the availability of our infrastructure by diagnosing, predicting and understanding the consequence of an asset failing so we can intervene before it impacts passenger and freight users. The programme will incorporate the lessons learned, capabilities, skills and experience delivered through the ORBIS and Maintenance Effectiveness Programmes and key team members have already transitioned to support the programme.

During 2018/19 the programme had two areas of focus; programme management through to the Tranche 1 Design stage and early start project activity to accelerate benefit delivery in CP6. The 2018/19 scope was successfully delivered. The programme management activity defined 27 route endorsed prioritised projects across all disciplines. These projects have now been focused into an initial eight workstreams, with Foundations, Track, Signalling, and Renewals being launched at the start of CP6. The early start projects have focussed on initiating aerial survey activity, with approximately one third of the network data being refreshed, outline design activity for the replacement to the Operational Property Asset Management System and several enabling activities that will accelerate delivery of the initial workstreams.

The benefits of the programme were initially identified as reducing operational maintenance activity and service affecting failures, with a resultant performance benefit.

Following internal reviews it has been established that there is an opportunity to build on this to support both additional internal benefits and the wider industry: this activity will be completed in Q1 CP6. The first opportunity identified is the potential for improving wheel management through improved monitoring and additional provision of wheel lathes at key depots. The expected benefit of this is improved whole life cost for both wheel and rail, fewer alarms and resulting performance impacts due to high forces from out of round wheels and fewer empty stock movements.

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 exceeded.

Network Capability

In June 2018, Network Rail and the ORR commissioned the Independent Reporter, Arup, to review Network Rail's performance for Network Capability. The CP5 regulated output required that Network Capability must be maintained at 1 April 2014 levels unless changed in accordance with the Industry Network Change process.

Arup reviewed Network Rail's data management and reporting processes and, at locations where changes to capability were identified, assessed whether Network Rail had followed the Network Change process.

Arup found Network Rail's reporting processes to be reasonably sound and well documented with appropriate error checks as well as there being clear evidence of the reporting procedures and associated governance. However, Arup highlighted a concern that the baseline data for the start of CP5 was not agreed with stakeholders.

Arup also noted in its report that we had carried out testing on the transition from GEOGIS to INM (the reporting system for Network Capability). Track sections in INM are more accurately measured than the legacy GEOGIS system and therefore there are small variances in the track mileage and layout data. Arup noted that errors were being progressively corrected but not all of the Network Capability data changes introduced by the system change had been eradicated. This was known

within Network Rail and our routes are continuing to work to review differences and verify the data in INM.

Arup's final report notes that Network Rail was able to provide evidence for nearly 90 per cent of all changes to the network over the course of CP5 (up to the point that the review was carried out). While Arup recognised general compliance with the process, it did highlight some issues with Network Rail's internal processes. These related to the availability and form of data, manual data correction and the line of sight between Network Change documentation and data presentation in systems.

Arup also made recommendations for the management and monitoring of Network Capability in CP6. We are working to appropriately action and embed these recommendations through the industry Network Capability Steering Group. The recommendations included:

- to agree a CP6 Network Capability baseline with relevant stakeholders
- to monitor Network Capability through a dashboard agreed by the industry Network Capability Steering Group, including a measure of stakeholder satisfaction
- to develop a single system wide view of the network linking capability, performance and capcity
- to develop a long term vision for Network Capability that provides a touchstone against which to test change.

Locally Driven Measures

Customers and routes have agreed on other measures of performance to be included in scorecards. As these vary dependent on customer and route priorities, they cannot be individually categorised and are represented on the national scorecard as a single line. Full details of performance for all locally driven measures are included in the route scorecards below.

Customers and Communities

We are Britain's biggest neighbour. 22 million people live or work less than 500 metres away from the railway, and five million neighbours live next door to the tracks, with property backing or facing onto the railway.

We receive feedback from these communities (and beyond) and we track what people are telling us. Each of our routes has their own scorecard which measures, amongst other things, the number of railway work complaints received year on year.

Providing great customer service

Our national helpline is the central point for all contact from the public. We encourage all contact, positive or negative and people can contact us on the phone, via Twitter, on our website, live chat or in writing. In total, we receive around 345,000 contacts every year.

Contact by telephone to our helpline, which is open 24 hours a day, has consistently been the most used method of contact in 2018/19, with 134,477 calls, an increase of 10 per cent from 2017/18.

After telephone, live chat is our most popular medium, with contact rising each year. In 2018/19, we received 18,881 chats, up from 15,537 the previous year, an increase of 22 per cent.

Most of our social media contact comes through the @networkrail corporate Twitter account, which has continued to increase for the sixth successive year. In 2018/19 the number of followers has increased by 12,088 to 175,102. In the same period the number of mentions has increased by over 23 per cent to 129,117.

In September 2018, we appointed a new contact centre, Civica, and we have recently retained our position as Number 1 contact centre in the public sector, as judged by the "Top 50 Companies for Customer Service Awards". We came ninth overall, which is our highest ever placing achieved in these awards.

What are people telling us?

Over half (58.2 per cent) of contact from the public was handled initially by our helpline during 2018/19. Most of these were routine requests, such as information relating to one of our managed stations. Of the 139,092 contacts received into our central team, 30 per cent were allocated to the appropriate route for further investigation and action. Consistently, the highest volume of contact was related to our managed stations – with Manchester Piccadilly receiving the most (13 per cent of the total). This varied from enquiries about train times and train assistance to queries about lost property, car parks and other station facilities.

Reduction in Railway Work Complaints

Aside from issues not directly related to Network Rail and routine information we are contacted most about 'railway work'. Most railway work complaints are noise and worker behaviour related. Since 2015/16, we have had a focus on reducing these complaints, and have successfully brought down the overall volume of Railway Work Complaints by 40 per cent over the last three years.

Reducing the number of railway work complaints remains a focus for all routes, and performance against these self-set targets has been positive this year remaining on par with 2017/18, with around 4,700 complaints received in 2018/19.

We have committed to reduce the time we take to respond to our customers when they make contact with us, with a target of resolution or response within 20 working days. This is not a new target, however some routes have included this on their scorecards for the coming year which has not been the case previously, suggesting that there will be a stronger focus on

achieving a more consistent service. Currently four out of our eight routes are meeting the 20 working day target for a response.

Sustainable Development

At Network Rail we continue to drive sustainability principles through our policies, processes and operational decisions. We are always keen to understand how our activities affect the environment locally as well as globally and, at the same time, we drive social responsibility and actively seek opportunities to care for our communities and create social value.

In 2018 we focused our efforts on the Responsible Railway Plan which contains a portfolio of projects aimed to maximise environmental and social performance gains versus cost and we delivered all high-level milestones of this plan on time. As part of this plan we published the new Environment and Social Minimum Requirements standard and improved a variety of environmental and social elements including ecological data mapping, energy consumption at our managed stations, waste management and new social value measurement. The plan continues into CP6 and benefits are at all times identified and measured to ensure sustainable impact of the projects.

Environmental Impact

At the beginning of 2018 our essential activities to manage the vegetation on our 52,000 hectare railway estate attracted extensive local and national media attention. This led to an internal evaluation of our vegetation management and also a request from the Rail Minister for all non-safety critical tree felling to stop and for there to be a review of our vegetation management practices across England and Wales.

The Vegetation Management Review was chaired by John Varley OBE TD who together with representatives from RSSB spent four months travelling the network interviewing lineside neighbours and railway workers as well as holding workshops with environmental and Government stakeholders. In November, the Rail Minister was presented with 'Valuing nature – a railway for people and wildlife: The Network Rail Vegetation Management Review' in which there was one recommendation for Government and five recommendations for Network Rail, including creating an ambitious vision for the management of the lineside estate and vastly improving the communication with our stakeholders.

One specific recommendation within the review was to work with ornithological experts to further improve the way that we check for breeding birds when working during nesting season. This review was completed in advance of the 2019 'nesting season' and briefed to staff and contractors so that when works do need to take place, the revised checking procedure will identify where further environmental controls are necessary.

Energy and carbon

Network Rail's carbon emissions continue to fall. In 2018/19 we have reduced Scope 1 & 2 non-traction CO2e emissions by eight per cent compared to the previous year, and by 19 per cent compared to the baseline year at end of CP4 (2013/14).

We continue to focus on energy reduction as a major contributor to our carbon footprint. Our Strategic Business Plan commits to a reduction in non-traction energy consumption of 18 per cent over the course of CP6 – this complements one to reduce carbon emissions by 25 per cent over the same timeframe.

As part of our carbon management approach we have worked with the 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 a low-carbon source of generation: nuclear power. This is in line with the criteria laid down by the World Resources Institute (WRI) for 'market based' calculations in their new guidance on reporting emissions and helps further demonstrate how we are committed to keeping up with global best practice in carbon management.

In addition, during the past year we have developed an Integrated Category Strategy for utilities which sets out our ambition to transition our traction and non-traction energy requirements to renewable energy, and to integrate renewable generation across the infrastructure.

We have also undertaken a baseline assessment of our maturity against PAS (Publically Available Specification) 2080, an organisational management system for engaging the value chain on managing whole-life carbon during infrastructure development projects. Through CP6 we will improve whole life carbon performance by developing and implementing plans to align more closely with PAS 2080 principles.

Waste

We are a major producer of waste and generate a wide range of waste types including; construction, commercial and hazardous wastes. In 2018/2019, we generated 2,111,123 tonnes of which 98 per cent was diverted from landfill – exceeding our 95 per cent target. A key initiative this year was the launch of the Surplus App where sites can sell unwanted items to other Network Rail sites allowing them to be reused rather than sent to landfill. Since launching in January 2019, over 470 employees have trialled the app. We have worked closely with our waste contractors to improve our waste management performance by carrying out site audits to identify and implement solutions to increase our recycling rates and to reduce the amount of waste we send to landfill.

Environmental Incidents

Network Rail has a significant interaction with the environment. In 2018/2019, there were 634 environmental incidents recorded. eight of these incidents were category 1 (major environmental incident) and 12 were category 2 (significant impact). 70 environmental incidents were category 3 (minor incident) and 482 were category 4 (negligible environmental impact). 423 of the environment incidents recorded were spillages (e.g. oil or chemicals) and 6 were related to protected sites and species. 4 environmental incidents were related to noise and 90 were related to fly-tipping. There were 10 environmental incidents that were categorised as 'other'

There were 7,756 environmental close calls reported in 2018/2019.

In 2017/18 we had a total of 739 incidents recorded, compared to 491 in 2018/19, a reduction of 44 per cent. During 2018/2019 we have investigated the reporting and investigations process and identified areas of improvement which are currently being embedded. We plan to follow this work up to identify further control measures including working closer with TOCs/FOCs and contractors. We have pilot training in place in Western Route, which has seen local improvements and we plan to roll this out further. We are currently updating our standards and the new prevention of pollution to land and water level two standard will further improve reduction in, and management of, environmental incidents.

People

This year Network Rail has seen positive progress with the 20by20 campaign – a project created to improve gender diversity across the business – with over 17.3 per cent of workforce now female and improved representation in senior roles. The aim is to increase the number of women throughout the business from the project start (November 2017) 16.5 per cent to 20 per cent by the end of 2020. A further target to increase this to 26 per cent by the end of CP6 (March 2024) has been published in the strategic business plan.

Network Rail is working towards this by 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.

Work is also underway to deliver progress on our 'Race Matters' project to improve the number of black, Asian and minority ethnic (BAME) people in the business and in leadership roles. Currently at 8.5 per cent, we are aiming to be reflective of the UK population which is 13 per cent BAME. A refresh of personal data began in April, reaching out to all 40,000 employees to request

they share data on protected characteristics which will help us to better understand the makeup of our workforce and support ethnicity pay gap reporting later in the year.

Social Performance

In 2018/19 our social performance strategy has focused on identifying opportunities to integrate social value in to business operations.

We have a social responsibility to the British taxpayer to invest public funds in areas that add value to local communities, 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 2018 Network Rail was the industry sponsor for the 'Common Social Impact Framework for Rail', a project funded by the RSSB for the benefit of the rail sector. The framework provides metrics for reporting on social value, some of which can be monetised, and is now being used within Network Rail to build social value in to programme planning and design, as well as evaluating the social impact of our construction and operational activities.

Network Rail continues to drive a culture of volunteering and charitable giving. We have increased the number of employees taking volunteer leave by 15 per cent over the year, with 11 per cent of employees supporting charities and local community groups. We have raised over £209k for our corporate Charity of Choice, Barnardo's, and supported its Employment Training and Skills (ETS) services with careers advice and pre-employment support. Over 11 per cent of our workforce have used Payroll Giving to donate over £520k to charities all over the UK, and passengers at our managed stations have donated a further £1,540,914 to over 300 charities through bucket collections.

Weather resilience & climate change adaptation

Many rail assets are vulnerable to weather and controls are in place to mitigate the impacts, ranging from speed restrictions during high temperatures and winds to investments in improving the condition of high risk assets. In 2018 the snow/cold during the Beast from the East in February and the summer heatwave impacted many passenger journeys. We are improving our seasonal planning and improving our understanding of how climate change could amplify weather related performance and safety issues.

We have been working to implement the 2017 Weather Resilience and Climate Change Adaptation (WRCCA) Strategy. The focus this year has been on developing guidance and tools to support assessment of climate change impact. Our Climate Change Risk Assessment Guidance is being piloted by CrossRail2 and a number of other large IP projects. Routes are updating their Climate Change Adaptation Plans and the Chief

Engineers Asset teams agreed to develop action plans for integrating climate change within policies, standards and processes. Foundations are in place for a significant shift in the way we manage WRCCA during CP6.

CP6 Preparedness

Over the previous year, we have been monitoring our preparations for the first year of CP6. Our readiness reporting is designed to provide assurances that we are in a strong position to start delivering against our commitments for the new Control Period. Effective planning will help us minimise disruption to passengers and train running by ensuring we provide an early view of disruptive access requirements; maintain and renew our assets effectively to minimise delays caused by asset failures; and deliver our outputs efficiently to provide value for money to fare payers and tax payers.

At the start of CP5 we faced difficulties in delivering our plan therefore we have developed a suite of Leading Indicators that measure the key enablers we need in place for delivery of our CP6 renewals, maintenance and efficiency commitments. These indicators are reviewed at local and national meetings including route quarterly business reviews and regular executive level meetings. Routes have made good progress in their readiness activity over the year with high levels of access, maintenance resource and renewal delivery contracts in place. Workbank planning made most of its improvement in the latter part of the year and we will continue monitoring progress to ensure we build on this improvement. Development and tracking of efficiency plans has continued to improve and will remain a key focus in CP6 to ensure we deliver our commitments.

The indicators introduced at the start of the year have evolved to provide more relevant insight into our preparation activity. We continue to work with routes and the ORR to identify and deliver further changes to our monitoring of readiness to enable the output to continue to provide suitable assurance of progress.

Disruptive Access

We monitor levels of access booked to understand whether we have sufficient access to deliver the planned renewals and maintenance activities. Where maintenance and renewals will disrupt services for train operators and passengers, this requires engagement across industry to agree access. This is referred to as disruptive access and given the industry engagement required to put in place, has been the focus in terms of CP6 readiness. Ensuring we have effectively planned our access arrangements early gives us confidence we can deliver against our timetable commitments to our passengers and provide them with sufficient notice of changes to train running times.

At year end, 80 per cent of access hours required for 2019/20 had been booked in our Possession Planning System. This compares favourably to target

(66 per cent), which is based on our historic level of bookings, giving us confidence in the levels of access we currently have in place. Our access planning is completed for calendar years therefore access for the last three months of 2019/20 is currently being negotiated and agreed. Access agreed for 2020 is due to be published in July 2019 therefore we would anticipate the percentage of disruptive access to keep increasing in the early periods of 2019/20.

Workbank Planning

Effective renewals planning provides a fixed view of upcoming work for Network Rail's supply chain, reduces costs and ensures we deliver improvement works in a timely manner that limits passenger disruption. The stages in developing and agreeing plans to deliver an asset renewal project are specified by the Governance for Railway Investment Projects (GRIP) process. Financial authority is required to progress through the various stage-gates in this process, so is considered a strong indicator for readiness to deliver capital works. As part of our suite of CP6 readiness indicators, we monitor the stability of the workbank and the levels of financial authorisation in place.

As a result of significant increases to financial authorisation levels in the last two periods of the year, our workbank stability measure has reduced marginally to 77 per cent against a Period 13 target of 78 per cent. This does not raise concerns at this stage as the stability of the workbank becomes more important as we move into the first year of CP6.

At a national level, 67 per cet of renewals spend for 2019/20 has financial authorisation in place. Obtaining financial authorisation involves detailed planning and governance activity and routes have a desire to ensure plans are well developed before seeking authorisation. This has resulted in progress for the measure being heavily backloaded to year end with significant improvements seen in periods 12 and 13.

Levels of financial authorisation in place show variation at a route level, reflecting the different approaches routes take to finalising their workbank. Most routes fall between 62 per cent (Scotland) and 83 per cent (Western). At year end Wessex had 40 per cent financial authorisation in place however a large re-signalling project was in the late stages of authorisation. This has since been granted authority, with financial authorisation for Wessex reaching 61 per cent shortly after year end.

Maintenance Headcount

Ensuring we have sufficient maintenance resources in routes enables us to maintain our assets in a manner that reduces unplanned travel disruption for passengers resulting from failures of our assets. In developing their maintenance plans for CP6, Delivery Units and Routes have used the Activity Based Planning tool to forecast the maintenance headcount required to deliver planned

maintenance activity. Through the Leading Indicators, we monitor the current level of maintenance resource against forecast required to ensure routes have the capacity to deliver their planned maintenance works. Nationally, 97 per cent of the maintenance resource in place to deliver expected volumes for 2019/20. Where headcount in route is below 100 per cent, they can utilise overtime and subcontractors to maintain delivery of the necessary volumes.

Efficiency plans

Driving greater efficiency within our organisation is a core part of our strategy and achieving our efficiency targets is key to providing value for money to fare payers and tax payers. Our plan for CP6 includes a commitment to deliver £3.5 billion efficiencies and a significant amount of this value will be delivered in the first year of CP6. Therefore, risk management of the deliverability of efficiency in year 1 is key to our achieving our goals in CP6.

Efficiency management has been on a journey of improvement over the last two years. During that time we have implemented the fishbone framework which provides a mechanism for detailed articulation of changes in cost. We have added extra layers of national governance and review through our Efficiencies Assurance Board and local regional assurance has much improved. We have created central support in regards to the calculation of efficiency across the business to ensure that the numbers we produce are consistent and truly reflective of changes we're making and plans are created and owned by the business.

There is still work to do and we will continue to challenge ourselves and improve as we move throughout CP6. To that end we have implemented an action plan to further strengthen central support to the business, to improve the way we communicate the good work that we do, to improve the governance around those efficiencies which are delivered through processes rather than projects and to produce management information which is suitable for all interested observers in Network Rail's efficiency plans.

To assess confidence in overall readiness and deliverability of these efficiencies in the first year of CP6 we use a performance measure of efficiency maturity. This measure has helped inform areas of focus for internal reviews and assurance purposes. We have taken steps to improve this measure which now assesses schemes against their stage of delivery.

As at Period 13, 71 per cent of schemes are tracking at "Green" - meaning that there is a full plan for delivery in place and specifics are known in regards to the method that project is being delivered. A project which is considered "green" acknowledges that there is still work to be done in order to realise that benefit. An additional 13 per cent are tracking at "Blue" - meaning that the

improvement project has been delivered and we are now waiting for the cost impact to flow through into our business. Of the remaining portfolio, those efficiencies codified as "Amber" relate to projects where the area of improvement is known but there are no clear plans for delivery in place. The majority of these relate to LEAN efficiencies which represent short term, smaller scale process improvements which emerge throughout the year and are delivered without the requirement for long lead time planning.

Forecasts show that confidence in efficiency delivery in the first year and throughout CP6 have remained strong since the production of the final determination and in some areas, confidence as grown in our ability to deliver efficiency as planned in the coming year. We are not complacent and we will continually push ourselves to deliver efficiencies as we have committed to.

Contracts in place

To assure we have the right contracts in place to deliver the workbank, we have been monitoring the progress of procurement activity for key renewals delivery contracts. We are in a strong place to start the Control Period with most contracts awarded and in place. Seven contracts have been awarded and are now in use and one further contract in the process of being awarded. two framework contracts have been extended to provide continuation of service into the start of CP6, overlapping with the tender process for new contracts.

Three contracts have experienced delays. At year end, Design Services Framework was running three weeks behind due to an extension of tender being granted. Major Signalling Programme required integrating with the Digital Railway Strategy and therefore the milestones are being re-baselined. Commercial services programme has currently been paused while the procurement strategy is under review to take account of organisational changes. Where necessary, existing frameworks have been rolled over and will provide cover, therefore no issues are anticipated as a result of these delays.

Route Comparison Scorecard

Our route comparison scorecard compares geographic route delivery across a consistent set of measures and is monitored periodically. The colour key used is the same as that described in the scorecard section above.

Safety	Wales	Scotland	Anglia	LNE&EM	South East	Western	LNW	Wessex
Lost Time Injury Frequency Rate (LTIFR)	0.462	0.497	0.381	0.354	0.485	0.479	0.444	0.601
Close calls raised	8,160	12,313	9,990	28,171	11,065	10,799	27,055	7,105
Close calls % closed within 90 days	94%	90%	86%	90%	91%	98%	89%	93%
Train accident risk reduction measures	87.0%	97.0%	100.0%	100.0%	100.0%	93.0%	89.0%	99.0%
Top 10 Milestones to reduce level crossing risk	10	10	10	10	8	10	10	10
Financial Performance								
Financial Performance Measure – Gross renewals	7.0	16.2	(7.7)	7.9	(15.6)	10.7	(6.6)	(0.4)
Financial Performance Measure – Gross profit and loss	3.1	5.1	(20.7)	(39.0)	15.5	(34.1)	(43.8)	(44.2)
Financial Performance Measure – gross enhancements only	(19.9)	1.1	4.0	5.5	(0.9)	(94.1)	(60.4)	1.2
Cash Compliance – Income & Expenditure	6.8	(1.0)	(33.7)	75.2	13.4	171.4	50.0	(13.9)
Top Investment Milestones	100.0%	100.0%	100.0%	96.0%	88.0%	100.0%	95.0%	75.0 %
Asset Management								
Number of service affecting failures	1,155	2,306	2,562	5,862	2,975	2,272	5,416	2,231
Renewals (7 Key Volumes)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	98.7%	97.7%
Customer Measures								
Train performance	46.1%	12.3%	30.0%	21.9%	49.8%	31.7%	33.3%	48.8%
Locally driven measures	84.5%	36.0%	64.7%	62.2%	81.1%	59.7%	70.0%	67.2%
Route scorecard performance								
Route scorecard performance	70.36%	60.52%	58.16%	55.53%	55.65%	55.11%	54.41%	49.39%

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Scotland

Safety	Worse than Target	Target	Better than Target	2018/19 Actual
Lost Time Injury Frequency Rate (LTIFR)	0.362	0.345	0.328	0.497
Close calls raised	6,450	8,600	10,750	12,313
Close calls per cent closed within 90 days	80%	85%	90%	90%
Train accident risk reduction measures	60%	80%	100%	97%
Top 10 Milestones to reduce level crossing risk	6	8	10	10
Financial Performance				
Financial Performance Measure – gross renewals	£(20.9)m	£0.0m	£20.9m	£16.2m
Financial Performance Measure – gross profit and loss	£(4.7)m	£0.0m	£4.7m	£5.1m
Financial Performance Measure – gross enhancements only	£(24.7)m	£0.0m	£24.7m	£1.1m
Cash compliance – Income & Expenditure	£25.8m £(6.4)m	£12.9m £(3.2)m	£0.0m	£(1.0)m
Investment				
Top Investment Milestones	80%	90%	100%	100%
Asset Management				
Number of Service Affecting Failures	2,403	2,387	2,354	2,306
6 Key Volumes	90%	95%	100%	100%
Train Performance				
Abellio ScotRail PPM	90.0%	90.5%	91.0%	87.4%
Abellio ScotRail Right Time Departures	80.0%	82.5%	85.0%	82.3%
Abellio ScotRail Cancellations	1.4%	1.2%	1.0%	3.5%
Delay Per Incident (DPI) Reduction	5.0%	10.0%	15.0%	-14.6%
Caledonian Sleeper Right Time Arrivals	79.0%	80.0%	81.0%	81.0%
Freight Delivery Metric (FDM)	94.0%	94.5%	95.0%	94.0%
Abellio ScotRail On Time to 3	87.7%	88.6%	89.2%	84.0%
Cross Country right time departures from Edinburgh Waverley	82.0%	84.5%	87.0%	76.5%
Locally Driven Measures				
Increase in Abellio ScotRail Passenger Numbers	2.0%	4.0%	6.0%	0.0%
Passenger satisfaction	86%	87%	88%	82%
Annual Stakeholder Survey	40%	50%	60%	52%
Complaints per 100,000 customer journeys	30	28	26	35
Railway work complaints	758	720	682	797
Staff Engagement	58%	59%	60%	64%
Abellio ScotRail per centage improvement in average minute per mile travelled	0.5%	1.0%	1.5%	2.0%
Your Voice Action Plans Completed	70%	80%	90%	95%
Route Scorecard Performance				60.52%

Safety

Lost Time Injury Frequency Rate increased significantly during 2018/19 ending with an actual of 0.497 against a target of 0.345. Unfortunately, there was a fatal accident to a contractor at Bearsden Station following a fall from a step ladder. He was engaged in a cable renewals project for a long line public address at stations.

Most accidents were caused by slips, trips and falls and relate to access and egress from a site to work or have an element of manual handling which has led to a loss of balance. Reviews are underway looking at standardised site lighting and better use of mechanical aids for lifting and transporting materials on site. No lost time accidents occurred in Scotland this year as a result of a member of our staff being involved in a road traffic collision. The rollout of vehicle speed warning systems and drivers' mandate has had the desired impact.

For the second year running Scotland route has achieved full compliance with the assessment process for detecting HAVs in our workforce.

Scotland Route has installed a further two automatic full barrier crossings; locally monitored in Dingwall, this makes three in total in operation on the route. The design concept won an award for the use of innovative technology at the Scottish Transport Awards. The route is now working to take these crossings out of trial status and make the design available on the national network. Twelve user worked crossings across Scotland have been upgraded to provide warning lights to give users an indication of approaching trains using a non-intrusive overlay system. The system provides significant safety benefits to passive crossings in long signal sections.

We have met all requirements of the train accident risk reduction measure on our scorecard. There have been no train derailments with passengers on board in Scotland this year, but three non-passenger train derailments occurred.

Train performance

Network Rail Scotland and ScotRail remain committed to continually improving the product we deliver for rail users. Throughout 2018, Scotland's Railway has struggled to deliver performance levels that passengers not only expect, but we are required to deliver as part of our target. Scotland's Railway has been working closely together to deliver the 20 recommendations provided by independent industry expert, Nick Donovan.

Nick reviewed Scotland's Railway and identified that the only realistic way of improving train service performance was through a "whole-system" approach. A Programme Management Office was deployed in 2018 to control and manage the delivery of these recommendations, whilst also monitoring and controlling additional performance projects. Nichols were jointly commissioned by the ORR and Network Rail to review Scotland's implementation of

the Donovan recommendations, within which several areas of best practice were identified.

Throughout the year, asset and fleet reliability have both improved, although the PPM failures per incident trend in these respective categories has been inversely proportional to the absolute incident count. With further improvements required, Scotland Route embarked upon the Glasgow Plan, which has proven effective at reducing the asset failures in the Glasgow area. A Network Rail head of performance has been recruited, resource significantly increased in the Network Rail performance team. There is now capability for enhanced performance management processes, particularly with regards to the operating plan - and scrutinising the recovery of incidents when they do occur. There has been a large amount of expenditure on reducing the impact leaf-fall and the autumn season has on train service performance. The approach to Performance Management has been renewed, with a continued focus on using data-driven analysis to make decisions.

Financial performance

FPM for 2018/19 was better than target due to a strong performance in renewals. This was mainly due to effective risk management on major signalling schemes, Motherwell North and Polmadie & Rutherglen. Financial performance was negatively impacted by overall train performance throughout the year, as a result of the impact of Storms Ali and Callum, and the prolonged period of hot weather. There were revised cost target baselines agreed for EGIP, which helped offset the negative financial performance for the Stirling, Dunblane and Alloa electrification project. This was a result of increased costs due to a revised programme and acceleration required to achieve the regulated milestone as well as increased costs from the contractor.

Investment

Our programme of enhancements and expansion of the Scottish railway network continues with progress made across a number of key projects. This work is allowing us to operate electric trains to run faster, greener trains running at greater capacity and frequency.

Works have continued on the Edinburgh Glasgow Improvement Programme following successful completion of the electrification works of the Edinburgh to Glasgow via Falkirk High line in October 2017. The redevelopment of Queen Street Station continued apace, with the extension of Platform 1 to accommodate 4-car length trains completed in May 2018. The redevelopment of Queen Street Station is due to be completed in March 2020, allowing 8-car train operation on the Edinburgh to Glasgow via Falkirk High route. The Edinburgh Waverley improvement works have also continued, with extensions to platforms 5 and 6 entering operational service in February 2019. These longer platforms at the east side of the station provide

additional capacity for ScotRail services, and LNER services accessing Edinburgh Waverley from the east.

The Aberdeen to Inverness project continued to progress positively with a new double track constructed between Aberdeen and Dyce. This, along with the second track between Dyce and Inverurie, will be brought into service in August 2019 creating capacity for more services and longer trains with more seats.

The Highland Mainline project celebrated completion on time for a cost of £57 million against a budget of £117 million. The project created capacity for more services and improved journey time between Glasgow/Edinburgh and Inverness. Infrastructure upgrades at Aviemore and Pitlochry facilitated the improvements.

The Stirling-Dunblane-Alloa electrification project, which electrified the lines from Polmont Junction and Greenhill Lower Junction through to Stirling, Alloa and Dunblane was completed in December 2018 to programme. This facilitated the introduction of new Class 385 EMUs and the withdrawal of existing DMU rolling stock. In addition, the Grangemouth Freight Branch was electrified in March 2019 to allow electric freight locomotives to service the freight facilities served by the branch line. The project to electrify the Shotts line was successfully completed in March 2019, thus allowing EMUs to be introduced on this route from May 2019.

Asset management

Scotland Route made good progress in reducing service affecting failures, bettering the composite reliability index target and the annual asset failure targets. 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.

The route has continued to invest in its Asset Improvement Programme (AIP) to reduce asset failures. Over the last three years this targeted spend has delivered over £24m of asset improvements which have been driven by locally identified initiatives from the four maintenance delivery units. This has delivered reduced asset failures and improved the networks performance.

Scotland exceeded target for the six key renewal volumes on the scorecard. Successful signalling commissions were delivered as part of Motherwell North and Polmadie and Rutherglen Renewals.

Locally driven customer measures

Passenger satisfaction fell to 79 per cent reflecting poor performance delivered by the ScotRail Alliance. Leisure travelers satisfaction was at its highest since spring 2016 at 91 per cent. Satisfaction with ticket buying facilities has increased following investment in new

ticket machines and Smartcard technology. Customers are more satisfied with the overall station environment.

Despite a 16 per cent increase in complaints and enquiries in 2018/19 which was expected given the intensification of engineering works including major project works involving significant closures to the railway, response times improved by 25 per cent.

In 2018, two surveys were undertaken to assess key stakeholder perceptions of the Alliance. Ipsos Mori surveyed Members of the Scottish Parliament (MSPs) and 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 when asked about familiarity with the ScotRail Alliance (71 to 81 per cent). 36 per cent of MSPs were favourable towards the ScotRail Alliance, which is lower than the 2017 score but remains a strong improvement on the 2016 score of 30 per cent.

Amongst key stakeholders' familiarity was 72 per cent and favourability 68 per cent. The combined favourability score for Scotland was 52 per cent. These surveys will inform the 2019 Alliance public affairs plan.64 per cent of key stakeholders felt that the Alliance was good at communicating its activities (an improvement from 53 per cent in 2017) and 84 per cent of respondents indicated that the Alliance was very or quite effective at engaging with stakeholders. Engagement is strongest with local government (84 per cent), civic society (67 per cent) and business stakeholders (67 per cent), with passenger stakeholder groups least satisfied with effectiveness of engagement (43 per cent).

Third-party funding

We are continuing to work with industry partners to provide a new station at Robroyston in Glasgow. The new station is jointly funded by SPT, Glasgow City Council and the Scottish Government, and will be delivered by ScotRail. Approximately half of the funding for the station will be from third party sources. Discussions are ongoing with local authorities throughout Scotland to investigate opportunities to utilise City Deal monies to fund improvements to the rail network and the rail customer experience.

CP6 Readiness

The route continues to develop its plans for CP6, with a focus on year one schemes, securing investment authority, access and delivery frameworks. One of the main challenges for the route will be the performance trajectory given the current levels of performance. We continue to develop and track our efficiency plans with our delivery partners to instil confidence in our programme delivery. The recruitment of up to 200 new staff, particularly to strengthen our off-track and electrical power capabilities is nearing completion.

Anglia

Safety	Worse than Target	Target	Better than Target	2018/19 Actual
Lost Time Injury Frequency Rate (LTIFR)	0.550	0.524	0.498	0.381
Close calls raised	5,475	7,300	9,125	9,990
Close calls per cent 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
Financial Performance				
Financial Performance Measure – gross renewals	£(9.5m)	£0.0m	£9.5m	£(7.7)m
Financial Performance Measure – gross profit and loss	£(4.3)m	£0.0m	£4.3m	£(20.7)m
Financial Performance Measure – gross enhancements only	£(1.9)m	£0.0m	£1.9m	£4.0m
Cash Compliance – Income & Expenditure	£10.9m £(2.9)m	£5.4m £(1.5)m	£0.0m	£(33.7)m
Investment				
Top Investment Milestones	80%	90%	100%	100%
Asset Management				
Reduction in Service Affecting Failures	2,560	2,510	2,485	2,562
7 Key Volumes	90%	95%	100%	100%
Train Performance				
c2c On Time to 3	95.3%	95.7%	96.0%	95.0%
c2c On Time	83.1%	83.9%	84.3%	82.4%
Greater Anglia On Time to 3	85.7%	86.1%	86.4%	84.3%
Greater Anglia On Time	65.7%	66.1%	66.6%	63.8 %
London Overground On Time to 3	90.1%	90.8%	91.1%	91.1%
London Overground On Time	90.6%	91.4%	91.8%	90.3%
TfL Rail On Time to 3	91.1%	91.5%	91.9%	92.0%
TfL Rail On Time	71.4%	72.4%	73.4%	75.7%
Freight Delivery Metric (FDM)	91.3%	93.0%	93.6%	94.0%
Locally Driven Measures				
Passenger Satisfaction (All Anglia Route National Rail Passenger Survey - NRPS)	85%	87%	89%	82%
Number of Railway Works Complaints	495	450	405	299
Your Voice Action Plans Completed	70%	80%	90%	100%
MTR Crossrail Customer Scorecard	0%	50%	100%	72%
c2c Customer Scorecard	0%	50%	100%	83%
Greater Anglia Customer Scorecard	0%	50%	100%	56%
Arriva Rail London Customer Scorecard	0%	50%	100%	49%
Route scorecard performance				58.16%

Safety

Anglia route's safety record, measured by LTIFR, has improved by 40 per cent in the last year. The number of staff injured and unable to return to work the next day has reduced from 44 in 2017/18 to 26. Progress has been achieved by setting a clear strategy and focusing on areas that make the most difference. These include improved protective equipment, new technology designed to keep track workers safer, increasing understanding of mental health issues and where to find help, as well as identifying and removing hazards before they are a problem.

Another critical aspect in our progress has been the involvement and continued engagement of our frontline staff in helping us to build and embed these improvements.

It was also important for us to identify and remove hazards before they could cause harm. We set ourselves a stretching target on raising close calls and have exceeded this target and importantly closed out 86 per cent within 90 days.

We have continued to improve safety by closing or upgrading level crossings and introducing footbridges. Slipe Lane in north London was a high risk crossing that now has a pedestrian footbridge connecting the busy Lee Valley Park. We have introduced new technology at a number of user-worked crossings, making them safer, and near misses with vehicles at level crossings have significantly reduced following improved engagement with authorised users and communities.

We have continued to tackle underlying precursors to train accidents, making our railway safer for passengers and freight users. We delivered our targets to reduce train accident risk through managing lineside vegetation that reduces the risk of train drivers not seeing signals, signage or people at level crossings. We have also reduced trespass risk through delivery of fencing and improved drainage to assist in maintaining track and embankment stability.

The route is seeking to close or alter around 100 level crossings by three Transport and Work Act orders. By removing crossings where there are near-by alternatives, we will improve public safety and enable potential line speed improvements. We submitted the Cambridgeshire, Suffolk and Essex Level Crossing Reduction Orders and completed each of the public inquiries for each Order.

Performance

While Anglia route has some of the highest performing train operators in the country, the challenging targets we have set meant we have not always achieved these owing to a mixture of infrastructure failures and a worsening fleet performance by some operators.

Since December 2018 and the launch of our Every Second Counts initiative, train performance has shown signs of improvement. We enhanced our joint plans with operators to help us consistently deliver the reliability that passengers rightly expect. In early 2019 we committed an extra £10 million for additional initiatives that will bring timely performance benefits for passengers and freight users.

While c2c's performance is one of the highest across Britain every period, the high targets set mean we only met target for four periods (delivering 82.4 per cent against a target of 83.9 per cent for trains on time within 59 seconds). Reliability was affected by power supply issues in the first half of the year and the long hot summer that resulted in speed restrictions to combat the dry clay banks in this area. This meant longer journeys for passengers. The power problems have been resolved and performance has largely improved in the last few periods of the year.

While Greater Anglia performance in the early and middle part of the year was not as good as planned, due in part to infrastructure and operator fleet issues, this has much improved with the route hitting targets from period 10-13 (delivering 63.8 per cent against a target of 66.1 per cent of trains on time within 59 seconds).

London Overground performance has been mixed over the year, hampered by both operator fleet and infrastructure reliability (delivering 90.3 per cent against a forecast of 91.4 per cent of trains arriving within 2 mins 59 seconds). Similar to c2c, passengers continue to see high levels of performance but we need to continue to improve through our joint improvement plans.

TfL Rail performance has largely been positive throughout the year. We achieved our yearly target following a poor start to the year where the operator took over additional services on the Western route, which had been underperforming. This improved significantly as the year progressed with the Western section improving by 11 per cent (delivering 75.7 per cent against a forecast of 72.4 per cent of trains on time within 59 seconds).

Asset Management

Even though 2018/19 was a challenging year, overall, we have seen a 13.4 per cent improvement across CP5 when compared with the volume of asset failures in the last year of CP4. The long, hot and dry summer impacted our ability to deliver all our planned proactive maintenance to fix track faults. Disturbing the track to repair it at extreme high temperatures risks it buckling and causing further damage and delays. While all these faults have been fixed, this resulted in additional delays to passengers and freight users and us narrowly missing our target to minimise the number of delay minutes caused by faulty infrastructure by 1.8 per cent.

We delivered 100 per cent of our key volumes of renewals. This included replacing 57km of track, 52 sets of switches and crossings and renewing and upgrading 87km of overhead wiring.

Financial performance

Anglia route spent £281.1 million in the year delivering its planned renewals volumes and £258.2 million on capital enhancements to the route on schemes including Crossrail, Felixstowe branch and the Lee Valley Improvement programme.

Operations and maintenance costs were £210.2 million, some £10.2 million worse than budget. The key factors included increased building and civils reactive maintenance, additional labour and sub-contractor costs in part caused by the required response to the long hot and dry summer, unbudgeted increases in utility costs and delays to the new road fleet introduction.

Compensation to train operators for engineering works was £10.5 million greater than budgeted. Key factors included backdated 2017/18 charges relating to the implementation of the Key Route Strategy during the bad 2018 winter ('Beast from the East'), a lengthy platform closure at Liverpool Street station and several late possession bookings. Compensation for unplanned disruption was £1.8 million greater than budget reflecting the relatively poor performance of the Anglia infrastructure during the year (especially in summer).

Investment

Our upgrade projects have progressed well with a number close to completion, bringing much needed benefits for passengers. The £170 million Lee Valley Rail Programme has built an additional track between Stratford and Meridian Water on the West Anglia Main Line, which will enable two additional trains an hour; a brand new station at Meridian Water, and improved accessibility at Northumberland Park and Tottenham Hale stations, easing congestion.

The £60 million project to increase capacity on the Felixstowe branch line is almost finished. A new 1.3km track loop that will significantly increase freight capacity from the Port of Felixstowe, getting lorries off the roads and improving reliability for passenger services.

Our track and overhead line programmes have replaced more of our ageing infrastructure and significantly reduced the number of temporary speed restrictions that cause delays. In total, 57km of plain line track was renewed and 87km of overhead line replaced, making the railway more resilient and reliable for passengers.

We continued to work with Transport for London (TfL) by supporting the delivery of the new Elizabeth line, that will soon take more people from Essex to London, Heathrow and the West. We have also worked with TfL on its construction project to extend the Gospel Oak to Barking line to the new Barking Riverside development, with a

1.5km electrified railway. Once complete, this will support regeneration of the area by providing an additional transport link.

We secured final investment to complete the platform extensions on the King's Lynn line that will bring much needed capacity improvements for passengers.

We continued to work collaboratively with Greater Anglia to support the introduction of an entire new fleet, due to roll out later this year. We also worked closely with Greater Anglia to deliver "Norwich in 90" and from May 2019, passengers will be able to enjoy faster services from Norwich to London, as additional services achieve that journey in 90 minutes.

Locally driven measures

For the second year running we reduced the number of railway works complaints, with a 33 per cent reduction on last year. We exceeded our response timescale target, finishing the year replying in an average of 16 days. Improved working with our maintenance and projects teams and better pre-notification has contributed to this success.

While 82 per cent of passengers in the Anglia region stated they were satisfied with their journey, we missed our target by 5 per cent. We believe a greater focus on performance will help us to contribute to higher satisfaction levels as we know this is the most important aspect for passengers.

Third Party Funding

In May 2018, we completed the £25 million redevelopment of Hackney Wick station funded by the London Legacy Development Corporation and the boroughs of Hackney and Tower Hamlets, delivering major improvements to the station and immediate area.

Work has progressed on the early development stages for Cambridge South, a new station adjacent to the Biomedical Campus, and we have received a further £9.6 million to continue the project through to production of an outline business case. Half of this funding has been provided by central government and the other half is being provided by three third parties: the Cambridgeshire and Peterborough Combined Authority, the Greater Cambridge Partnership and AstraZeneca.

CP6 preparedness

Anglia route is confident in its plans for CP6 and the preparations and assurance undertaken in 2018/19 stands us in good stead for the coming years. We continue to work with all our delivery partners to gain confidence across our entire renewals work bank and to ensure that we deliver our planned volumes and efficiencies. Stakeholder engagement and closer collaboration with passenger and freight operating companies will continue to inform our plans and help us deliver for our passengers.

London North Eastern & East Midlands

Safety	Worse than Target	Target	Better than Target	2017/18 Actual
Lost Time Injury Frequency Rate (LTIFR)	0.534	0.509	0.484	0.354
Close calls raised	14,250	19,000	23,750	28,171
Close calls per cent 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
Financial Performance				
Financial Performance Measure – gross renewals	£(27.7)m	£0.0m	£27.7m	£7.9m
Financial Performance Measure – gross profit and loss	£(11.0)m	£0.0m	£11.0m	£(39.0)m
Financial Performance Measure – gross enhancements only	£(27.2)m	£0.0m	£27.2m	£5.5m
Cash Compliance – Income & Expenditure	£38.5m £(9.7)m	£19.3m £(4.9)m	£0.0m	£75.2m
Investment				
Northern Programme: Top investment milestones	80%	90%	100%	100%
East Coast: Top investment milestones	80%	90%	100%	88%
Midland Mainline: Top investment milestones	80%	90%	100%	100%
Asset Management				
Number of Service Affecting Failures	5,914	5,796	5,677	5,862
Track Plain Line (Track km)	159	168	177	243
Track S&C (Point Ends)	173	182	192	287
Signalling (SEUs)	430	454	478	503
Underbridges (m^2)	11,859	12,518	13,177	14,519
Earthworks (5 chain)	214	226	238	326
OLE re-wire and mid-life refurb (wire runs)	17	18	19	22
Conductor rail (km)	0	0	0	0
Customer Measures				
LNER Scorecard	0.0%	50.0%	100.0%	17.0%
Northern Scorecard	0.0%	50.0%	100.0%	17.3%
East Midlands Trains Scorecard	0.0%	50.0%	100.0%	63.6%
Grand Central Scorecard	0.0%	50.0%	100.0%	30.7%
Hull Trains Scorecard	0.0%	50.0%	100.0%	31.3%
Nexus Performance Scorecard	0.0%	50.0%	100.0%	89.7%
CrossCountry Scorecard	0.0%	50.0%	100.0%	0.0%
TransPennine Express Scorecard	0.0%	50.0%	100.0%	64.8%
Govia Thameslink Railway Performance Metric	0.0%	50.0%	100.0%	8.0%
Freight Delivery Metric	93%	94%	95%	94%
Your Voice Action Plans Completed	70%	80%	90%	100%
Railway work complaints	1.08k	1.03k	0.97k	1k
Route scorecard performance				55.53%

Safety

The route is making great progress on safety. All measures to improve level crossing safety and reduce the risk of train accidents are complete, meeting our overall targets for the control period. The route has successfully launched and continues to run a safety campaign advising passengers and communities how to stay safe around the new electrification in the East Midlands.

The number of accidents which are harming our people and resulting in time off work continue to fall to 0.349 which is the lowest Lost Time Injury Frequency Rate (LTIFR) ever recorded on the route. The route continues to focus on a weekly safety communications plan and reducing manual handling, reducing risk and near misses with trains.

Health and wellbeing remains a key focus for all teams. Mental health first aid training is being rolled out and fatigue and nutrition are incorporated into the safety communications plan. Six new medical facilities are being set up at locations across the route to support the physical and mental health of our people.

Train performance

Train performance remains the Route's biggest challenge and was exacerbated by the May timetable introduction which particularly negatively impacted passengers who rely upon Govia Thameslink Railway, Northern Trains and TransPennine Express (TPE).

Both Northern and TPE timetables were affected by the late delivery of project work, meaning a late alteration to the plan. This resulted in a timetable which was not fully validated or resourced.

TPE recorded a 15 per cent reduction in PPM in the immediate aftermath of the timetable introduction and Northern's fell by 10 per cent. Following extensive work to identify and fix the problems in the timetable, the PPM of both operators is now approaching where it was in December 2017.

One of the consequences of the May timetable was a reduced ability to adequately respond to incidents which meant that reactionary delays increased significantly throughout the route, reaching the highest level for more than five years. This has now also fallen significantly but remains above the historical average, despite PPM recovering and the route is working with operators to understand why and develop joint plans to restore service levels for passengers.

The impact of the timetable as less significant upon East Midlands Trains and PPM is now back to pre-May 2018 levels.

LNER's PPM was declining before May 2018. Extensive partnership work to address underlying issues such as

temporary speed restrictions and fleet reliability is helping to improve performance for passengers.

External delay, such as that caused by trespass and fatalities accounts for 23 per cent of the overall delay on the route, resulting in reduced reliability for passengers and freight customers. The Route continues to work with Samaritans and train operators to provide support to vulnerable people and, where possible, make infrastructure changes such as fencing, lighting and signage to deter trespass. The route is also funding additional British Transport Police officers to work with existing industry teams to use data to help prevent crime related disruption, including trespass and fatalities.

Financial performance

Over the year, the Route has delivered £1.2 billion of enhancement investment which has improved the railway enabling better services and environment for passengers. Reflecting the poor train performance and reliability we have paid out
£19 million more than expected in compensation to train operating companies to support the provision of alternative transport and passenger information as well as direct financial compensation for passengers. This has meant that the route has missed its overall financial performance target.

Investment

We have delivered all our key investment milestones on the Northern and Midland Main Line (MML) Programmes. This includes the work at Derby over 79 days in the summer when new and longer platforms were installed, creating vital space for passengers, along with a new track layout that will allow trains to run in and out of the station more reliably improving services for passengers. This was a key milestone within the wider MML Programme.

We have a secured agreement on scope and outcomes for the TransPennine upgrade across the complex political stakeholders and continue to develop the business and outline designs to enable full delivery to begin later in 2019. Intermediate interventions have been successfully delivered. At Micklefield track improvements will allow for future increases in linespeed and the Calder Valley journey time improvement programme has been delivered. In addition, the first stage of Leeds capacity improvements is complete after the signalling system control was transferred to the Railway Operating Centre in York at Christmas.

The East Coast Mainline Upgrade programme is now funded through to delivery in CP6. Milestones delivered in 2018/19 include completion of gauging and depots for the new Intercity Express Programme (IEP) fleet and the first phase of the power supply upgrade which will enable more services to run, giving passengers greater options when planning their journeys. The new Tram Train services began in October, a first for Britain,

offering passengers city centre to town centre links between Sheffield and Rotherham.

Headingly access for all scheme was substantially delivered in the year but finishing work on the lifts ran into early April.

Asset Management

The early part of the year was initially impacted by snow followed very quickly by a long hot summer both of which impacted performance. The milder winter in 2018/19 than 2017/18 has enabled this position to be recovered at year end regarding Service Affecting Failures which are slightly short of the 2 per cent target but better than the previous year.

Key Renewals Volumes

The Route delivered a large renewals volume plan in the latter half of the year which has brought volumes back to target. Earlier in the year the hot weather impacted work delivery particularly within the track discipline, but this has been recovered over the latter part of the year.

Locally driven customer measures

The route has completed a stakeholder mapping exercise to identify the status of our existing relationships with stakeholders. Gap analysis and a plan to address those gaps is also underway.

The route's Customer Relationship Management Team has now been in place for almost twelve months. The team comprises seven Customer Service Professionals, organised by region, whose objective is to support our Train Operating Companies. Following extensive research to understand both the challenges and opportunities, the team created both generic and bespoke TOC Engagement and Communication Plans to address the gaps highlighted in the research. These plans are updated quarterly to ensure they remain current. Key activities undertaken include TOC Newsletters, Pulse Surveys to measure satisfaction along with You Said, We Did Action Plans and support for major projects such as Midland Mainline Upgrades and King's Cross remodelling. The team has also taken over the management and governance of Alliance Boards to enable them to share best practice more easily .

Third-party funding

Some important milestones have been achieved on potentially large third party investments. We achieved approval in principle with London Borough of Barnet for the outline design of a new station within the wider Brent Cross development. The contract is now in place to start detailed design. Consultants have been appointed to prepare an umbrella strategic outline business case for the future development plans for Leeds Integrated Strategic Masterplan which has been jointly funded by partners including Leeds City Council, West Yorkshire Combined Authority and Network Rail. An outline planning application has been jointly submitted by Network Rail and Homes England for York Central. The proposed development would enable up to 2,500 homes and one million square foot of commercial property on brownfield railway land close to the city centre. Funding has been allocated to North Yorkshire County Council by North Yorkshire Local Enterprise Partnership (LEP) to facilitate a capacity improvement scheme enabling two trains per hour to operate between York and Harrogate, development of capacity improvements at Darlington are being supported and progressed in collaboration with the recently elected mayor and Tees Valley Combined Authority and a contract has been signed with East Midlands Gateway to deliver a rail connection to new multi modal SEGRO Logistics Park.

CP6 Readiness

Following the final determination, the route continues to develop its plans for CP6. A mobilisation control room has been established to review plans each period. This includes investment papers which have been authorised for a large amount of the work in year one. We continue to develop our efficiency plans, which include the rollout of our safe and effective working project across the whole route. This project aligns work with our access requirements. One of the main challenges for the route will be the delivery of the improved performance trajectory given the current levels of performance across the route.

London North Western

Safety	Worse than Target	Target	Better than Target	2018/19 Actual
Lost Time Injury Frequency Rate (LTIFR)	0.506	0.482	0.458	0.444
Close calls raised	13,650	18,200	22,750	27,055
Close calls per cent closed within 90 days	80%	85%	90%	89%
Passenger train accident risk reduction measures	60%	80%	100%	89%
Top 10 Milestones to reduce level crossing risk	60	8	10	10
Financial Performance				
Financial Performance Measure – gross renewals	£(24.0)m	£0.0m	£24.0m	£(6.6)m
Financial Performance Measure – gross profit and loss	£(12.3)m	£0.0m	£12.3m	£(43.8)m
Financial Performance Measure – gross enhancements only	£(21.0)m	£0.0m	£21.0m	£(60.4)m
Cash Compliance – Income & Expenditure	£34.6m £(8.7)m	£17.3m £(4.4)m	£0.0m	£50.0m
Investment				
Top investment Milestones	80%	90%	100%	95%
Asset Management				
Reduction in Service Affecting Failures	5,387	5,330	5,279	5,416
7 Key Volumes	90.0%	95.0%	100.0%	98.1%
Locally Driven Measures				
Freight Delivery Metric	92.3%	93.9%	94.4%	94.3%
Caledonian Sleeper Right Time Arrivals	79.0%	80.0%	81.0%	81.2%
Arriva Rail London T3 (Euston-Watford Service Group)	93.3%	94.2%	95.1%	93.8%
Diversity Training	70%	80%	90%	100%
Your Voice Action Plans Completed	70%	80%	90%	100%
Number of Railway Works Complaints	1,357	1,285	1,099	1,049
National Passenger Survey Results for Network Rail Managed Stations	84%	86%	88%	87%
Chiltern Railways Level 2 Scorecard Achievement	0.0%	50.0%	100.0%	59.1%
Merseyrail Level 2 Scorecard Achievement	0.0%	50.0%	100.0%	43.4%
TransPennine Express Level 2 Scorecard Achievement	0.0%	50.0%	100.0%	50.0%
Virgin Trains Level 2 Scorecard Achievement	0.0%	50.0%	100.0%	44.4%
West Midlands Trains Level 2 Scorecard Achievement	0.0%	50.0%	100.0%	63.8%
Northern Level 2 Scorecard Achievement	0.0%	50.0%	100.0%	30.6%
CrossCountry Right Time Arrivals (Birmingham New Street)	33.0%	37.0%	39.0%	32.5%
Route scorecard performance				54.13%

Safety

Workforce safety performance on LNW in 2018/19 was favourable to target on most measures. For LTIFR we achieved 0.444 against a target of 0.482, we have delivered an improvement of over 50 per cent in LTIFR over the last three years through the application of continuous improvement principles across our activities.

We outperformed our close calls raised stretch target of 22,700, raising over 25,000 close calls. Last year the route only closed 76 per cent of these reports within 90 days, missing our target. This year we have prioritised the closure of close calls achieving 88.7 per cent within 90 days, this is better than target of 85 per cent.

We did not hit 100 per cent of our passenger train accident risk reduction measures. We achieved an overall score of 94 per cent. Unfortunately, there were two areas where we missed our performance targets. The first was signaller attendance at operational safety days. We also failed our target to reduce repeat level 2 twist faults to 220 by year end.

We hit all of our level crossing risk reduction milestones and have started a programme to add technical solutions to assist users of passive foot and user worked crossings, giving the user a visual and audible warning when trains are approaching. We have installed seven VAMOS systems on LNW in CP5 and will install seven more during 2019/20.

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 are doing to ensure it is safe.

Train performance

2018/19 has been a year of significant performance challenge across LNW. The introduction of the May 2018 Timetable changed the landscape for performance in the north of England.

External influences including suicides and severe weather including the broader performance impact associated with the prolonged period of hot weather have also contributed to some disappointing overall year end PPM MAA results for our lead operators. On a positive note, Merseyrail ended the year 0.4 per cent better then plan and where the highest performance operator in the country. We continue to work closely with the operators on the development of our joint performance improvement strategies to support delivery of our 2019/20 targets.

- Virgin – 84 per cent (3 per cent behind plan)
- WMT – 86.7 per cent (2.1 per cent behind plan)
- TPE – 76.3 per cent (12.7 per cent behind plan)
- Chiltern – 92.9 per cent (0.9 per cent behind plan)
- Merseyrail – 95.5 per cent (0.4 per cent better than plan)

Financial performance

The LNW route business remained very close to budget on both operational and renewals expenditure in 2018/19 after a real focus upon delivering financial efficiency and investing in the asset. During the year we have been focusing upon the process and cultural changes required to address the financial rules for CP6. We believe that we have delivered an asset that is where it needs to be to commence the robust CP6 strategic business plan that is funded by the Final Determination.

However, financial performance was affected by train punctuality being below where it needed to be. This resulted from a combination of factors including asset failures, external factors such as suicide and extreme weather. The Route invested in suicide prevention measures and a series of performance initiatives in the latter half of the year which will provide greater resilience to assets in the future.

Major railway upgrade schemes including the Walsall to Rugeley and Liverpool Lime St projects were delivered to Budget. North West Electrification has had financial challenges during the year but has achieved critical milestones and the resignalling of Birmingham New Street has now entered into its sixth & seventh phases. The route continues to work in partnership with HS2 Limited as construction and "On Network" works continue.

Investments

2018/19 saw significant progress made on our Enhancement Delivery Plan projects. We have successfully achieved a record 95 per cent of our regulated milestones in the year including entry into service for the following key programmes, representing over £1.5 billon of investment to provide passengers with better journeys or stations including;

- Liverpool Lime Street Remodelling
- North West Electrification Phase 3 (Blackpool to Preston)
- North West Electrification Phase 4 (Manchester to Preston)
- Walsall to Rugeley Electrification
- Cannock Journey Time Improvement
- Peak Forest Train Lengthening

Great North Rail Project

December 2018 saw the completion of one of the most challenging projects in the Great North Rail Project; electrical tests completed over the week of the 10th December enabled the first electric train to travel down the 'Bolton corridor' from Manchester to Preston. Infrastructure including new electrification works, line speed improvements and station enhancements have been commissioned in advance of the May 2019 timetable. Significant progress was made on the North

of England Gauging and Platform Extension project; work was completed at 15 stations to facilitate the December 2018 timetable and to deliver c.20 sites for February 2019. Gauging certificates for Class 769, 68, 170, 397 and 802 were also issued in December 2018, whilst critical works to gauge clear Dean Royd Tunnel in Manchester were completed to schedule.

Walsall – Rugeley

Works to deliver electrified infrastructure to enable commencement of electric passenger and freight services between Walsall and Rugeley Trent Valley were successfully commissioned at the end of December 2018. This project has delivered route clearance works (track lowering and bridge reconstructions), around 30 kilometres of 25kV AC overhead equipment, associated power supplies and electrical control systems.

East West Rail

Our East West Rail team has been fully engaged in preparations for the East West Rail (Western Section) Transport & Works Order (TWAO) Public Inquiry. This commenced on 5 February 2019. The impact of delays to HS2's programme at Calvert remains a significant EWR schedule risk - we are working closely with HS2 and EWRCo on scenario and mitigation plans.

Merseytravel

The £120 million third party investment by Merseytravel to fund upgrades to infrastructure to support the introduction and operation of new Rolling Stock has made good progress. We have awarded contracts to Volker Rail to deliver work to upgrade the power and distribution systems and have successfully delivered the first two out of ten phases of platform gauging works to schedule. We are working closely with Merseytravel to review interventions that are required to accommodate the additional length of the new rolling stock.

Stations

Our team has successfully delivered over £200 million of improvements and new stations including;

- Newton le Willows
- Maghull North
- Wolverhampton
- Warrington West

Asset management

The final year of the period saw renewals delivery meet the majority of the 7 key volumes measures, only missing in the Underbridges category by 10 per cent. However, deliverability of renewals generally exceeded expectations with key Signalling and Track schemes performing very well over the year (Liverpool area renewals in particular), customer schemes within our Buildings portfolio seeing 'putting passengers first' approach really coming to the fore and our electrifiction

& plant teams significantly over delivering compared to the mid-CP5 position. In our ASPRO teams, 'open for business' has improved supporting 3rd party investment in the network, including complex electrical traction schemes, as well as civil engineering schemes.

In asset reliability we missed the Service Affecting Failure measure by 114 faults, or by just 2 per cent over the year. However, we have in flight a number of working groups looking at the fault analysis in common fault areas continuous improvement schemes and reducing the SAF rate for 2019/20. In the Composite Reliability Index, we surpassed our target by some distance, achieving 16.9 per cent against a target of 16.2 per cent, with points reliability and electrical power systems the highest improvement areas. In Year 1 of CP6, we will focus on Track and Buildings measures as the two are currently tracking below their baseline.

Locally driven measures

2018/19 was a positive year for NRPS at LNW stations, with an average overall satisfaction result across the year of 87 per cent against a target of 86 per cent. In the most recent wave, autumn 2018, Liverpool Lime Street was the highest ranked of the 20 Network Rail Managed Stations; Birmingham New Street also ranked highly, coming fourth. We are working closely with our TOC customers on action plans for the coming year to maintain these high standards.

Freight Delivery metric (FDM-R) was favourable to target in 2018/19, achieving 94.3 per cent against a target of 93.9 per cent.

Full year achievement on the TOC Level 2 scorecards was mixed, ranging from 31 per cent to 64 per cent; the majority of missed targets were performance-based, and there were some strong results across other customer measures. Some success stories were reduction of trespass incidents on Chiltern route, Combined Asset Score (CURSOR) for Merseyrail, delivery of transformation measures such as platform extension works for Northern and gauging for TPE, station fault completion timescales for Virgin, and reduction in passenger accidents at stations for West Midlands Trains.

Third party investment

Over the course of CP5, we have secured more than £500 million of third party funding for enhancements for the railway in LNW Route. This included £260 million for completion of two large one-off projects, started in CP4: Birmingham New Street Gateway and East West Rail Phase 1. In 2018/19, third parties invested £98 million across 70 different projects.

To reinforce the Network Rail Open for Business programme, LNW Route is currently facilitating third party delivery on 18 different projects. This ranges from the development of solutions for an enhanced station

building at University, to delivery of works at Kirkdale and Birkenhead North depots to support the introduction of new rolling stock for Merseyrail. In total, £41 million of railway enhancement work was delivered across LNW in 2018/19.

A small business development team in LNW is now in place and working with customers, funders and stakeholders to identify and initiate future rail enhancement projects. One key issue is to find new ways of funding rail projects – one project being developed currently has 8 different funders. The joint challenge with our stakeholders is to enhance the railway to accommodate passenger and freight growth, grow the economies of the regions served by LNW and meet local needs.

CP6 readiness

Bottom up workbanks are in place for all asset renewals in CP6 and have been shared with respective delivery organisations. Targets for remits, authorities and implementation have been set for each year and are being managed through the LNW Asset Workbank system.

All access for the 2020 timetable year has been confirmed within industry timescales, and collaborative workshops with deliverers and operators for requirements in the 2021 timetable year are underway.

All bank holiday access requirements throughout CP6 have been identified and shared in advance of the national Engineering Access Statement timescales.

Additional resources needed to meet our requirements for CP6 have either been recruited or the recruitment of them is in progress through a campaign that was commenced in 2018

Efficiency targets and delivery plans have been established in operations, maintenance and renewals. The focus is now on improving the maturity of the delivery plans with Network Rail delivery organisations.

South East

Safety	Worse than Target	Target	Better than Target	2018/19 Actual
Lost Time Injury Frequency Rate (LTIFR)	0.427	0.407	0.387	0.485
Close calls raised	4,875	6,500	8,125	11,065
Close calls per cent closed within 90 days	80%	85%	90%	91%
Train accident risk reduction measures	60%	80%	100%	100%
Top 10 Milestones to reduce level crossing risk	6	8	10	8
Financial Performance				
Financial Performance Measure – gross renewals	£(19.2)m	£0.0m	£19.2m	£(15.6)m
Financial Performance Measure – gross profit and loss	£(8.2)m	£0.0m	£8.2m	£15.5m
Financial Performance Measure – gross enhancements only	£(3.3)m	£0.0m	£3.3m	£(0.9)m
Cash Compliance – Income & Expenditure	£19.4m £(5.8)m	£8.1m £(2.9)m	£0.0m	£13.39m
Investment				
Top investment Milestones	80%	90%	100%	88%
Asset Management				
Composite Reliability Index (CRI)	22.0%	26.0%	28.0%	22.9%
Number of Service Affecting Failures	2,934	2,818	2,761	2,975
7 Key Volumes	90%	95%	100%	100%
Train Performance				
Southeastern Right time (Final destination only)	61.9%	64.9%	65.4%	66.0%
Govia Thameslink Railway Right time (Final destination only)	52.7%	54.6%	55.9%	57.5%
Southeastern CaSL	3.3%	3.0%	2.7%	3.9%
Network Rail contribution to Govia Thameslink Railway CaSL	2.6%	2.3%	2.1%	2.6%
Delay minutes affecting Southeastern	1.1m	0.9m	0.9m	1.2m
Delay Minutes (GTR) (NR and TOC/FOC caused)	1.8m	1.6m	1.5m	1.5m
The number of performance impacting TSR in place YTD average (LSeR)	9.0	9.0	7.0	11.7
The number of performance impacting TSR in place YTD average (GTR)	4.3	3.4	2.3	3.3
East London Line T-3 performance (South East Route - MAA by year end) (ARL)	87.9%	88.9%	89.9%	90.0%
Freight Delivery Metric (FDM-R)	88.8%	91.0%	91.7%	90.5%
On Time - 3 (Southeastern)	86.8%	88.5%	89.1%	85.3%
On Time - 3 GTR	80.4%	81.8%	82.8%	85.1%
Locally Driven Measures				
FWI - Passenger and public safety on trains and stations - LSeR & NR joint measure	16.5%	15.0%	13.5%	6.0%
FWI - Passenger and Public safety on trains and stations - GTR & NR joint measure	16.5%	15.0%	13.5%	4.9%
2 performance and development conversations per year for all Bands 1-8 employees	80%	90%	100%	100%

Your Voice Actions	70%	80%	90%	100%
per cent of planned worksites taken and cancellations (LSeR & GTR)	85%	90%	95%	97%
per cent of possession overruns whether service affecting or not (LSeR & GTR)	5%	3%	1%	3%
NRPS LSeR - Overall passenger satisfaction - Joint Measure	79%	81%	85%	77%
CSS - LSER and NR - Overall passenger satisfaction - Joint Measure	79%	81%	85%	81%
NRPS GTR - Overall passenger satisfaction - Joint Measure	79%	81%	83%	75%
CSS - GTR and NR - Overall passenger satisfaction - Joint Measure	79%	81%	85%	81%
GTR and NR Pulse Check Survey - Joint Measure	3.6	4.0	4.4	4.3
LSER and NR Pulse Check Survey - Joint Measure	3.6	4.0	4.4	4.3
Capacity Provision in Peak against Plan LSER	2.0%	1.9%	1.8%	1.7%
Thameslink Readiness Milestone Plan GTR & NR	n/a	100%	n/a	100%
LSER Financial Performance	0	1	1	100%
Shared efficiencies identified - LSER & NR	75%	90%	100%	100%
Shared efficiencies identified - GTR & NR	75%	90%	100%	100%
Route scorecard performance				55.65%

Safety

This year has seen another year-on-year improvement in the number of close calls raised, with 10,406 close calls – hugely exceeding our target of 6,500. Over 91 per cent of these were closed within 90 days.

Our Lost Time Injury Frequency Rate (LTIFR) is 0.485, which beat last year's score by 6 per cent, but did not meet our ambition for a 20 per cent reduction.

The South East Route's Safety Workshops have completely changed the way we work together to look after our colleagues, with more than 3,000 people attending the spring and autumn seminars, while new behavioural safety training has changed the way we work out on track.

With a continued focus on wellbeing, we recently opened our Occupational Health Centre to provide easily-accessible support to all our staff.
We installed 45 state-of-the-art red-light cameras at our highest-risk automatic half-barrier (AHB) level crossings. These can identify vehicles that jump the lights so are a proven deterrent.

We also spent £4 million upgrading Yapton level crossing to combat dangerous driving, while also renewing Wateringbury and East Farleigh level crossings.

We also installed platform end gates at 260 stations to prevent trespass, while installing or renewing 6,200 miles of fencing.

Young people can now learn the dangers of the railway first-hand after a life-size train station was built indoors at the Sutton Life Educational Centre in Sutton, south London. It aims to reduce trespassing and hammer home the potentially life-changing consequences if they ignore warnings and go onto the railway.

Despite our strong focus on safety and wellbeing, our efforts were overshadowed this year by some tragic incidents, including the death of a colleague on the railway near Purley.

Another of our colleagues suffered severe burns in an electrical fire while working on a substation at Godinton, near Ashford.

We are determined to learn from these tragedies to prevent incidents in the future. We will strive to embed a positive safety culture across the business and educate the public on the risks the railway can present.

Performance

We have beaten our targets across all three of our major passenger operators this year, despite the route being the busiest and most congested in the country.

That was in part down to our joint performance teams with Southeastern and GTR, which have changed the way we look at performance and given us a much deeper understanding of how our railway operates.

Our principal performance measure on South East route is Right Time, which measures trains arriving at their destination within 59 seconds of their published time.

For Southeastern, we delivered a Right Time moving annual average of 66 per cent against target of 64.9 per cent. For GTR, we achieved 57.5 per cent against a target of 54.6 per cent, and for Arriva Rail London's Overground services, we finished the year on 90 per cent against a target of 88.9 per cent.

A number of factors contributed to the improvements, including our best ever autumn performance and a proactive response to the drought.

While we have made good progress year on year, we know it is still not good enough and we must keep striving for better.

The main drivers for delays were trespass and fatalities, while landslips in Barnehurst and Wadhurst, plus winter disruption due to ice on the conductor rail, also contributed to significant delays.

The new On Time measurement, which began in April, will give our passengers a better view of how we are doing and will help us better understand their experience. This measures arrivals within 59 seconds at every booked station on a train's route.

Financial performance

Financial performance in 2018/19 was positive overall, but with mixed outcomes in some areas. Improving operating performance resulted in a reduction in compensation payments to train operators, and the cost of compensation for engineering work possessions was less than expected.

Planned efficiencies were delivered in the year, including the move of the route's headquarters from London Bridge to Southwark. Unfortunately renewals financial performance was negative, with a number of projects overspending.

Asset renewals delivery for the seven key volumes has been in line with plan for the third year running. Improved renewals planning provided the opportunity to bring forward some CP6 planned expenditure, which was invested in areas such as safety improvement schemes and passenger improvements at managed stations.

Investments

We started the year with the official opening of London Bridge by His Royal Highness the Duke of Cambridge, following a five year £1 billion transformation which nearly doubled passenger capacity and allowed for 30 per cent more trains.

And we closed with the successful completion of one of the biggest and most ambitious projects in our route's history, on the Brighton Main Line where we tackled the root causes of delay to give passengers a more reliable service. To achieve this, teams of over 250 engineers worked at 27 sites during a nine-day closure to complete the biggest upgrade of the railway between Brighton and Three Bridges in more than 30 years.

We spent £67 million renewing and upgrading track junctions and signalling, shoring up embankments to reduce the risk of landslides and introducing new technology that detects problems before they happen and can help the railway recover faster if there is a fault.

Passenger satisfaction at Britain's second busiest station soared 13 per cent in just 12 months thanks to the Team Victoria initiative. In a first for the industry, Network Rail staff and employees of train operators Southeastern, Southern and Gatwick Express, exchanged their individual uniforms in favour of a new purple outfit and were retrained to help all passengers, regardless of the service they were using.

Passengers at London Victoria will also soon enjoy clean, modern, reliable and comfortable toilet facilities as a £4 million revamp is set to finish in April. And they still will not have to spend a penny as the toilets will remain free to use.

We also made great strides for the 240,000 passengers who pass daily through Battersea Pier junction outside Victoria, by completing an £8.2 million replacement over Christmas, while passengers are enjoying faster and more reliable journeys thanks to a £21 million refurbishment of Sevenoaks tunnel.

We also refurbished and reopened three busy pedestrian footbridges over the railway in Lewes, Bognor and Bellingham, south London, and resurfaced 66 station car parks. But our work did not focus only on running the railway. Working with community groups and renowned artists, we also transformed 15 of London's historic railway bridges into stunning pieces of art, which are inspiring pride and respect in people's neighbourhoods, reducing graffiti.

Asset management

The reliability of our railway assets (Composite Reliability Index) ended the year 22.9 per cent better than it was 5 years ago at the end of CP4. This is a small reduction from the previous year and slightly below our target for the year, but still at historically high levels. The decrease was partly due to the long, hot and dry summer causing high levels of soil moisture deficit, which affected the stability of the track. We put a lot of effort into tamping and ballasting the track to compensate, but even so we had to impose a number of temporary speed restrictions across the Route.

The other key factor was the increase in traffic on the Route following the May and December timetable changes. With up to 30 per cent more trains now running on the network, wear is increased while access to the railway for maintenance and repair work is constrained.

Despite the challenges, we are working hard to improve reliability for passengers. We have continued to expand our remote condition monitoring so that we can detect faults before they occur and resolve them as quickly as possible. 'Time to fix' continues to be a focus, with our access strategy for both unplanned and planned maintenance works under review. This is to ensure we make best use of the time we have on track, to minimise disruption to passengers.

We are also in the process of recruiting over 100 additional maintenance staff to ensure we have the resources and skills to keep our assets running reliably, and fix faults as quickly as possible to keep passengers on the move.

Our programme to renew or refurbish ageing assets has been very successful, delivering significantly more work than planned in all key areas. We delivered 125km of plainline track against a plan for 91km, and for switches and crossings we delivered 184 point ends against a plan for 143.

Other highlights include successful commissioning of the Victoria phase 2b resignalling programme, resilience works at the southern end of the Brighton Main Line, embankment strengthening at Streatham, and a major programme to upgrade power supplies across the route.

Locally driven customer measures

Better access planning enabled us to achieve 95.6 per cent of planned worksites taken, against a target of 90 per cent. Another measure which is important to our customers is possession over-runs, whether they affect services or not, and we achieved our target at just under 3 per cent this year.

Unfortunately we failed to meet our overall passenger satisfaction targets of 81 per cent in the National Rail Passenger Satisfaction (NRPS) surveys. This was despite a small increase on Southeastern to 76.5 per cent. On GTR we saw a significant decrease – down over 5 per cent to 75 per cent - no doubt due to the well documented difficulties in introducing the major Thameslink timetable changes in May 2018.

The picture was somewhat better however when looking at the results of our own Customer Satisfaction Surveys (CSS) which we run together with our train operators. These track the same measures as NRPS but every month, and our end of year position was 80.9 per cent for Southeastern and 81 per cent for GTR, so we are hopeful that we will see increases in the next NRPS results.

We still keep a focus on reducing railway work complaints and again we achieved our target, with 522 against a target of 535.

Of course it is our people who enable us to deliver for passengers, so we are pleased to have exceeded both our people targets, with 100 per cent for both performance conversations and implementation of actions arising from our Your Voice engagement survey.

Third-party funding

The South East Route has continued to make the case for sustained investment over the past year by working with private sector companies and developers, and leaders, mayors and chief executives at local councils on dozens of projects.

We have attracted investment that is funding station enhancements 10 to 40 years earlier than they would have happened without this partnership approach. That means passengers are reaping the benefits much earlier.

Over our entire portfolio, we have attracted potential investment of up to £300m in CP6. We are now exploring new types of investment opportunities, which could bring huge benefits to passengers.

The business development team has now been formally embedded within the route structure and supports the large and growing portfolio. Interest in our 'Open for Business' pipeline is high with a large number of initial meetings with CEOs and directors from FTSE250 companies and consultancy firms with an interest in transport led development projects.

We are currently leading a world-class London Victoria station redevelopment project and working with the Coast to Capital Local Economic Partnership to help realise ambitions for using the railway corridor for digital infrastructure to enable 5G across the area. We continue to work with local authorities, developers and other partners to progress plans for station improvement schemes.

CP6 Readiness

We have a record £4.3 billion to spend in Control Period 6 (CP6), which is our next five-year funding period. As a devolved business, this is the first time we have been able to bid for our own financial settlement from the ORR.

We aimed high with our submission and although we did not receive everything we asked for, we did get more than £1 billion more compared to the previous funding period, which is fantastic news.

CP6 gives us an opportunity to begin to put right the historic funding shortfalls and we are hugely grateful for the strong support we have had from stakeholders in making our case for increased investment.

Based on the views and feedback from passengers, freight customers, train operating companies and other stakeholders, our vision is that by the end of CP7, we will efficiently and sustainably be "Proud to running the UK's most successful metro-style railway".

We now need to spend this money wisely. That means prioritising investment in maintenance to keep our infrastructure running reliably, while we use the extra funding to renew critical assets to improve performance in the longer term.

We held five executive deep dive days over the past few months to challenge ourselves and understand our current readiness to deliver our CP6 plan. All saw a significant step forward towards that goal with our route asset managers, maintenance delivery unit teams and work deliverers all working collaboratively.

Wales and Borders

Safety	Worse than Target	Target	Better than Target	2018/19 Actual
Lost Time Injury Frequency Rate (LTIFR)	0.356	0.339	0.322	0.462
Close calls raised	5,475	7,300	9,125	8,160
Close calls per cent closed within 90 days	80%	85%	90%	94%
Passenger train accident risk reduction measures	60%	80%	100%	87%
Top 10 Milestones to reduce level crossing risk	6	8	10	10
Financial Performance				
Financial Performance Measure – gross renewals	£(7.1)m	£0.0m	£7.1m	£7.0m
Financial Performance Measure – gross profit and loss	£(2.2)m	£0.0m	£2.2m	£3.1m
Financial Performance Measure – gross enhancements only	£(17.1)m	£0.0m	£17.1m	£(19.9)m
Cash Compliance – Income & Expenditure	£10.5m £(2.6)m	£5.3m £(1.3)m	£0.0m	£6.8m
Forecast Accuracy (Operating & Expenditure)	4.0%	2.0%	1.0%	2.0%
Efficiency Delivery (Opex) £m	£4.2m	£4.8m	£6.0m	£6.8m
Investment				
Top investment milestones	80%	90%	100%	100%
Asset Management				
Composite Reliability Index (CRI)	7.4%	10.6%	13.8%	21.2%
Number of Service Affecting Failures	1,178	1,149	1,120	1,155
7 Key Volumes	90%	95%	100%	100%
Train Performance				
TfW PPM	91.3%	91.8%	93.0%	91.4%
TfW CASL	3.1%	2.9%	2.4%	3.1%
TfW On-time to 3	80.1%	80.8%	82.7%	82.0%
GWR Wales PPM	78.0%	80.0%	82.0%	74.7%
GWR services departing Severn Tunnel on-time	40.0%	44.5%	49.0%	52.9%
Consistent Route Measure - Performance	1.63	1.55	1.37	1.28
Freight Delivery Metric (FDM-R)	93.0%	94.0%	94.8%	96.0%
CrossCountry - On Time Departures from Cardiff	67.0%	72.0%	77.0%	72.2%
Locally Driven Customer Measures				
Stakeholder perception survey	60%	70%	75%	93%
Working together with industry partners	65	104	143	187
Number of Railway Works Complaints	336	300	266	294
Passenger satisfaction (NPS) per cent improvement YOY	-1%	1%	2%	0%
Joint strategic events with TOC/FOC's	4	6	8	13
Joint employee recognition	1	3	5	4
Your Voice Actions	70%	80%	90%	95%
Operational Property helpdesk per cent of faults closed	70%	80%	90%	88%
Continuous improvement - Total PPS's instigated in 18/19	30	50	70	74
Route scorecard performance				70.36%

Safety

Our workforce Lost Time Injury Frequency Rate (LTIFR) finished on 0.462, worse than the year-end target of 0.339. The missed target was the result of a large increase towards the end of the year in employees sustaining personal injuries resulting in time lost from work. Eight of the total 21 lost time injuries were recorded during the final two periods. Close calls continued to be a key element of the Wales and Borders route safety culture and we achieved a close call closure rate of 92 per cent. Areas of focus on the route were improving access points and removing slip and trip hazards. We completed 405 repairs to access points and repaired or replaced 88 missing trough lids and removed 1592 slip and trip hazards on the route. We also launched our Home Safe Plan, which includes our strategy to reduce LTIFRs and continued to focus on the golden hour after-incident response. The plan was launched with a series of workshops and events across the route, working with TSSA and RMT safety representatives.

Our level crossing risk reduction campaign remained on target with all milestones achieved during the year. We closed six level crossings and commissioned one set of stop lights and one automatic half barrier conversion. In addition, we also exceeded the number of replacements and upgrades to crossing decks and approaches.

We proactively monitor and manage HAVs and ended the year with 100 per cent of Tier 2s complete and 99.5 per cent of Tier 3s complete, with just one missed assessment recorded.

Route crime decreased by 1 per cent however we saw a 5 per cent increase in our total number of route trespass incidents. The route has developed mitigation plans, holding community safety events and placing deterrents on the route to tackle these issues including new anti-trespass posters at stations and repositioning CCTV cameras. Areas of concern remain the number of level crossing incidents, which increased by 16 per cent; suspected suicides were up by 71 per cent, fatalities up by 44 per cent and suicide related incidents on the route increased by 16 per cent.

We increased the number of patrols around identified crime and trespass hot spots working collaboratively with industry partners including the British Transport Police (BTP) to reduce trespass and anti-social behaviour. We also have a BTP officer based at our Wales rail operating centre. We continued to deliver managing suicidal contacts training and trauma support training to colleagues and raise awareness through our partnership with Samaritans.

Performance

The Public Performance Measure (PPM) of lead operator Transport for Wales (TfW) was 91.4 per cent, narrowly missing the target of 91.8 per cent. The key

issues impacting PPM achievement were a challenging autumn caused by low rail adhesion, fleet reliability and availability and train crew availability. October marked the start of a new rail services contract with TfW and we continued to work hard to bring track and train closer together.

A solid performance particularly during the latter part of the year resulted in the route outperforming a number of its full year targets including TfW On Time to 3, GWR On Time (at Severn Tunnel Junction), and Cross County On Time (at Cardiff Central). We also exceeded our Route Freight Delivery measure consistently from period 2. This was due to a concerted effort to improve right time starts at Margam Yard, working closely with our freight colleagues in the FNPO team and DB Cargo. Network Rail delays were 22.6 per cent better than target for the year.

The very challenging start to the year, caused by an increase in fleet related failures, signalling incidents, traincrew issues, animal incursions and bridge strikes, contributed to TfW PPM, Cancellations and Significant Lateness (CaSL) & GWR PPM (Wales) narrowly missing year-end target.

We worked closely with our industry partners during what was a difficult autumn when many of our passengers did not get the service they deserved. Despite executing a comprehensive autumn plan the impact of low adhesion and the subsequent effect on train wheel damage, resulted in a significant impact on some of our passengers. Alongside our industry partners we provided evidence to the Welsh Government's Economy, Infrastructure and Skills Committee scrutiny session which focused on the autumn train performance. The committee concluded that all parties should work together to deliver a better service for customers rather than attributing blame.

In January we were awarded the national Golden Whistle Award for best route in terms of delay minutes caused by Network Rail on our operators. The award is based on an analysis of official performance data up to period 9.

We worked closely with TfW to implement a Joint Performance Strategy focussing on improvement opportunities and adopting recommendations identified by the Steer and Donovan industry reports. We also developed our CP6 Joint Performance Strategy which focuses on making a positive difference to passengers' experience and adopting more stringent performance metrics. For the past 15 years, we have been measuring PPM as the currency of performance but from April 2019 we will focus on Average Passenger Lateness and On Time at Every Station.

Financial performance

The Wales and Borders route achieved its Opex and Renewals FPM targets for the year and delivered within

its cash limits. The FPM target on Enhancements was missed due to the delays in the Great Western Electrification project. The Route also achieved its efficiency target; through initiatives such as Project Atlantic. Project Atlantic involved working with the Route Structured Continuous Improvement (SCI) team to deliver £340,000 of efficiencies by removing excess and obsolete materials from delivery units and depots including at Aberystwyth, Ebbw Vale, Porthmadog, Port Talbot and Shrewsbury.

Investment

We achieved our three key investment milestones this year. We installed a new state of the art signalling system from Port Talbot to Swansea. The new signalling system between Cockett Tunnel and Baglan, was commissioned in March and we also upgraded track, power supplies and telecoms equipment, increasing the resilience, flexibility and reliability of the railway for our passengers and freight customers.

We also delivered the Craven Arms S&C remodelling and completed a scour protection scheme at Afon Llydnant. We delivered the final stage of the North Wales Railway Upgrade Project which has increased the resilience and reliability of the railway in North Wales. It included a new state of the art signalling system from Shotton to Colwyn Bay, with bi-directional signalling between Flint and Rhyl, increasing flexibility of the system.

Working with Transport for Wales (TfW), we improved accessibility and facilities for our passengers at Neath, Shrewsbury, Cardiff, Bridgend and Radyr. We are working closely with TfW to deliver their new station schemes and enhancements at Llanwern, Deeside, Shotton, Wrexham and Bow Street.

As part of Open for Business we are working closely with SSE to look at solar generation at brownfield sites on the network and wireless 5G along the North Wales Coast, as well as working closely with industry partners on Cardiff Parkway, Newport station regeneration and the Cardiff masterplan.

Work to electrify the South Wales Mainline from London to Cardiff also continued to progress.

Asset Management

The reliability of our assets across our most critical infrastructure has improved significantly over the last year increasing from 13.9 per cent to a historically high level of 21.2 per cent, against the annual target of 10.2 per cent. The number of service-affecting failures across Wales and Borders narrowly missed target this year, although the year-end total of 1,152 failures represents an overall improvement in reliability of 8 per cent within CP5.

Renewals delivery continued to be a success, with all key volumes exceeding stretch targets. We delivered the

equivalent of £153 million of investment in the Wales and Borders railway in an efficient manner realising £11 million of positive FPM from our Renewals Delivery portfolio. The net investment of £142 million, was £22 million greater investment on our network than our planned annual expenditure. Major projects including the Port Talbot-Swansea Signalling Renewal Scheme have contributed to this achievement, as well as working closely with our supply chain to accelerate our CP6 preparedness strategy, utilising capacity across the supply chain and delivering work ahead of schedule.

Locally driven measures

We received a total of 294 railway work complaints during 2018/19, achieving the target of no more than 300 complaints, hosting resident drop-in events in advance of railway work and regular employee briefings around considerate worker behaviour. We recorded a total of 189 pieces of media coverage with the reference *'working with our partners'* exceeding the target of 104.

The route launched its Transport Leaders' Forum and hosted four events during the year, bringing together public and private sector leaders from across the route to drive and influence the transport debate across Wales and Borders. This is in addition to our now well-established Route Supervisory Board. We also commissioned the first route-wide stakeholder survey to measure the effectiveness of the route's engagement with stakeholders and identify areas for improvement. The first round of results in October recorded an overall satisfaction rate of 87 per cent in stakeholders' relationship with Network Rail Wales and Borders and an 81 per cent satisfaction rate with performance. The second round of results in March reported further improved figures with the overall satisfaction rate increasing to 93 per cent, (against a year end scorecard target of 70 per cent), and an 87 per cent satisfaction rate with performance. Our National Passenger Rail Survey score for the year was 82 per cent against our target of 83 per cent.

We successfully achieved all our people targets. We launched a dedicated route Senior Leadership Development programme with the first cohort in January as part of our commitment to train and develop our 1,650 people. Some 3,254 delegates were trained or booked on a course to develop skills during the year. We continued to develop our partnerships including with Business in the Community and Princes Trust. Focus also remained on increasing the number of female apprentices in line with Network Rail's 20:20 initiative aimed at seeing the workforce comprised of 20 per cent women by 2020.

Third Party Funding

We have been working closely with SSE to look at solar generation at brownfield sites on the network and wireless 5G along the North Wales Coast. We also

continue to work closely with industry partners on Cardiff Parkway, Newport station regeneration and the Cardiff masterplan. We are working closely with TfW to deliver their new station schemes and enhancements at Llanwern, Deeside, Shotton, Wrexham and Bow Street.

CP6 Readiness

There has been a clear focus on the route to ensure our readiness for Control Period 6 (CP6) with early development of the renewals schemes planned over the next five years, including enabling works such as de-vegetation for civils works, scheme designs for buildings and civils works and development of the Port Talbot Phase 2 re-signalling scheme and track works.

Delivery of the remaining CP5 schemes in the last period of the year were identified as being critical to the CP6 plans and the route achieved a high year end delivery performance, putting us in a good position at the start of the new control period. The route also continues to work very closely with TfW and the ORR through their Managing Change policy process.

The executive team were out on the route briefing teams about our plans for the next five-year funding period and in all, around 800 people took part in the briefing sessions. We have developed a joint performance strategy with Transport for Wales focusing on the introduction of new rolling stock, as well as tracking more passenger focused metrics such as average passenger lateness.

Wessex

Safety	Worse than Target	Target	Better than Target	2017/18 Actual
Lost Time Injury Frequency Rate (LTIFR)	0.433	0.412	0.391	0.601
Close calls raised	3,525	4,700	5,875	7,105
Close calls per cent closed within 90 days	80%	85%	90%	93%
Train accident risk reduction measures	60%	80%	100%	99%
Top 10 Milestones to reduce level crossing risk	6	8	10	10
Financial Performance				
Financial Performance Measure – gross renewals	£(8.5)m	£0.0m	£8.5m	£(0.4)m
Financial Performance Measure – gross profit and loss	£(4.4)m	£0.0m	£4.4m	£(44.2)m
Financial Performance Measure – gross enhancements only	£(1.1)m	£0.0m	£1.1m	£1.2m
Cash Compliance – Income & Expenditure	£8.6m £(2.1)m	£4.3m £(1.1)m	£0.0m	£(13.9)m
Investment				
Top investment Milestones	80%	90%	100%	75%
Asset Management				
Number of Service Affecting Failures	2,164	2,070	2,018	2,231
7 Key Volumes	90%	95%	100%	97%
Train Performance				
SWR Right time (right time departures Waterloo)	69%	75%	78%	73%
On time to 3 (SWR)	79.4%	83.7%	86.4%	79.8%
NR Wessex Delay Minutes (affecting SWR on Wessex route)	1,302,687	1,034,534	858,118	957,526
Freight Delivery Metric (FDM-R)	91.8%	93.6%	94.4%	95.0%
PPM (SWR)	82.7%	86.5%	88.5%	82.3%
CaSL (SWR)	4.7%	3.7%	3.1%	4.2%
GWR Measure (PPM North Downs line)	78.6%	82.6%	84.6%	73.4%
X Country Measure (right time arrivals at Reading)	25.0%	30.0%	35.0%	25.3%
GWR Measure (Portsmouth - Cardiff)	65.0%	70.0%	75.0%	67.2%
GTR Measure (NR delay minutes Wessex)	94,810	87,810	80,810	58,044
Locally Driven Customer Measures				
Performance Management	60.0%	80.0%	100.0%	98.0%
Number of Railway Work Complaints	328	298	268	254
Your Voice Action Plans Completed	70%	80%	90%	100%
Level 2 Scorecard Achievement	0%	50%	100%	54%
Route scorecard performance				48.96%

Safety

We had a total of 34 lost time injuries on the Wessex route this year and the final LTIFR of 0.601 did not meet our target of 0.412. The other four route safety scorecard measures were better than target. Our LTIFR was impacted by a poor start to the year and unacceptably high numbers of accidents in period 8, involving slips, trips and falls and manual handling of equipment, and in period 13, when three members of staff were injured in road traffic accidents caused by third parties. We are delivering enhanced safety improvement plans to reduce staff accidents at work, including improving depots and access points and providing new equipment to minimise manual handling by our teams.

Significant operational safety results have been achieved in 2018/19, with our signal passed at danger (SPAD) performance seeing a fourth year of successive reduction, ending the year at 19, the lowest of any route. This continued improvement resulted from successful close working with all our customers to reduce risk on the railway. We also had a 50 per cent reduction in high potential events compared to last year, with four in 2018/19, which was an outcome of our focused efforts.

Through our safety workshops we briefed more than 1,000 frontline employees (over 50 per cent of the route) on a range of areas, including mental health and wellbeing. Our focus on close calls saw 7,100 raised, the second highest of any route, beating our target of 4,700 by 34 per cent. Our close call closure rate of 92 per cent within 90 days exceeded our target of 85 per cent, helping us to deliver a safer environment for our staff, passengers and the public.

We have reduced level crossing risk at key locations on the network, in partnership with stakeholders, including by closing a high risk crossing at Feltham and installing a new stepped footbridge at a heavily used London crossing, welcomed by the community. Our teams have also delivered safety briefings to more than 27,000 members of the public, in partnership with councils and top tier football clubs, to educate communities and 'at risk' groups about railway risk. We have also brought in a private security firm, Land Sheriffs, to support our work with the BTP to prevent disruptive incidents and improve safety.

Train performance

We recognise the level of performance our passengers and rail users have experienced this year has simply not been good enough. Steps have been taken to recover performance as quickly as possible, with new leadership in place in November 2018, and we have refreshed our focus on getting back to the basics of running one of the busiest parts of Britain's railway. This means starting the day on time, staying on time throughout and recovering quickly, while keeping passengers informed during times of disruption. The new Joint Performance Improvement Centre at Waterloo is key to improving the train service for passengers and restoring stakeholder confidence. Through the performance centre we have rebuilt relationships with all of our train operators and renewed our joint focus on delivering better outcomes for passengers.

Better performance from the start of period 10 to 13 improved our PPM moving annual average (MAA) result by 0.9 per cent. Route PPM ended the year at 82.35 per cent, below our target of 86.5 per cent. GWR and CrossCountry performance improved in the last four periods of 2018/19 due to our refreshed approach. However poor performance for passengers earlier in the year resulting from infrastructure issues was not good enough. We saw better than target delay minutes in 2018/19 for SWR services, freight delivery metrics and GTR delay minutes, which contributed towards the improvement.

Financial performance

The route ended the year with 3 of 4 measures within our target range, with 25 per cent on target for the year. Efficiencies delivered, including for a power supply upgrade project, resulted in our enhancements financial performance measure (FPM) being on target. Renewals FPM was slightly adverse to target, with delays to the Feltham re-signalling project resulting in additional costs to the programme. Our cash position was within our target range. Our overall FPM finished negative, at £43.7 million adverse, due to profit and loss FPM, influenced by train performance being below expected levels, with the route paying compensation to our main train operator at a higher level than budgeted.

Investment

Three of our four investment milestones for the year were met. The missed milestone was due to the non-delivery of the Southampton freight train lengthening scheme milestone. We are working with the national freight route, Infrastructure Projects, System Operator and other stakeholders to determine how best to deliver the required outputs of the Southampton freight train lengthening scheme through a revised programme. Failure to progress on schedule was a disappointing result and not good enough for our freight customers, reducing their opportunity to run longer freight trains.

Permanently re-opening the Waterloo International Terminal for the December 2018 timetable change, through our £800 million Waterloo and South West Upgrade, was a huge achievement. This has provided two new platforms, significant extra concourse waiting space for passengers, new modern customer information screens, additional ticket barriers to reduce queuing at other parts of the station and new access routes to London Underground. The new terminal has been welcomed by Transport Focus and enjoyed by

tens of thousands of passengers at Britain's busiest station. The remaining two new platforms are expected to be brought into use for the May 2019 South Western Railway (SWR) timetable change, further increasing capacity for passengers on some of our busiest lines.

Enhancement schemes delivered elsewhere across the route included installing new culverts to improve flood resilience on the West of England line, providing passengers with more reliable journeys, and gauging work to allow SWR to introduce new rolling stock to improve the passenger experience. Work continues at Ewell West station to install a new footbridge and lifts to provide step-free access for passengers. We are also enhancing Feltham station to improve access and extend both platforms, to allow all doors to be opened on longer 10-car trains, helping passengers get on and off services more quickly.

Asset management

The route had 2,315 service affecting infrastructure failures in 2018/19, which did not meet our target of 2,214. While this was 4 per cent worse than the previous year, it is 26 per cent better than the result at the end of CP4. The increase in failures was primarily caused by worse track performance due to the long period of hot weather over summer 2018. This also contributed to a significant increase in speed restrictions on the network, affecting passenger journeys, and we have implemented a targeted plan to remove the most performance and passenger impacting restrictions. Track geometry and serious defects, and rail breaks were both better than our CP5 exit targets, reducing the risk of derailing passenger trains and the need for disruptive emergency work.

Non-track asset reliability was 4 per cent better than target, resulting in 85,000 less passenger delay minutes compared with the previous year, and we had fewer failures in this category in period 10 than any period since 2009. Initiatives to improve our asset reliability included reviewing and updating seasonal preparedness plans jointly with our customers (embedding lessons learned from summer 2018 to drive improvements), improving collaborative working and processes with maintenance teams, delivery of our long term asset investment plan, continued upgrade of specialised connections to the conductor rail, 100 per cent fitment of remote condition monitoring to eligible points and track circuits and targeted refurbishment of signalling components.

We delivered six of our 7 key volume targets in the year, representing 80 per cent of the capital investment plan. The exception was the commissioning of the trial area of a re-signalling scheme in the Feltham area, delayed due to complications with new equipment types by the manufacturer, although this did not impact passengers. The scheme is scheduled for a revised commissioning date in June 2019.

Locally driven customer measures

We have made robust progress for the second year running to maintain a low figure for railway work complaints, ending the year at 254 against a target of 292. This was achieved through targeted notifications to our lineside neighbours, increasing face-to-face engagement and briefing our teams on working considerately in local communities.

Highlights of our work supporting communities across the network included transporting people to significant events, notably the Royal Wedding at Windsor and national sporting matches, as well as celebrating the 170th birthday of Waterloo with special guests from local organisations.

The autumn 2018 National Rail Passenger Survey (NRPS) showed passenger satisfaction levels at our route managed stations – Waterloo, Guildford and Clapham Junction to be some of the lowest of all Network Rail managed stations. To improve the passenger experience we are delivering station improvements in line with NRPS feedback (we have already made toilets free at Waterloo and installed new seating, and deep cleaned Clapham and Guildford), and focusing on improving train performance, together with SWR, as we understand how important this is for passengers.

Our people

Our people are essential to our success in safely delivering a high performing train service for our passengers. To enable our frontline workforce to focus on their key operational activities we have recruited additional HR staff at delivery units at Clapham Junction and Eastleigh, allowing frontline leaders to focus on core operational activities, to support performance improvement work.

Work to improve diversity has increased the number of women on the route by 1.56 percentage points, from 11.5 per cent to 13.06 per cent in 2018/19. We also successfully launched the Women in Rail Hampshire group at the start of the year, providing a high profile regional forum to discuss and deliver developments and improvement initiatives. The number of diversity and inclusion (D&I) champions has increased from 16 to 99 since October 2017, and to date 1,204 people (63 per cent of the route) have completed the D&I everyone learning programme.

Our focus on identifying employees with potential to progress is helping us to create a competent succession pipeline for key and critical roles across the business. To support our workforce plan we have also increased the number of apprentices across the route, which will continue into CP6.

Third-party funding

Work to bring more third party funding into the route has been developed over the year, and we continue to engage with a number of stakeholders regarding station and other infrastructure improvements.

This includes ongoing work with Woking Borough Council to develop a bridge widening scheme required to unlock significant housing development in Woking town centre. We are also reviewing our land in this area to look at other possible development opportunities, which could further contribute to housing targets and deliver improved facilities for passengers.

We are leading engagement with Riding Sunbeams, a renewable energy company, to develop innovative technological and commercial solutions to allow solar energy generated alongside the railway to be directly connected to our train power distribution system. This would be a world first in using solar power to run train services.

CP6 Readiness

Our baseline work bank has been shared with delivery partners and Control Period 6 year one and two are

confirmed, with regular delivery and access planning discussions in place. Weekend disruptive access is 95 per cent booked for year one, and disruptive mid-week access is booked as per the engineering access schedule.

Access for Feltham resignalling and all switches and crossings renewals for the five years in Control Period 6 have been included in the long term access plan. New framework contracts are in place for track, signalling, electrification and plant and civils. Efficiency plans and governance are in place to deliver year 1 and 2 operational and capital expenditure targets, confirmed by executive leads.

The route maintenance headcount is ahead of target due to successful joint actions with HR shared services. Recruitment activity is ongoing in our maintenance function to fill additional roles required for increased delivery volumes. We are using campaigns of bulk recruitment for our inner and outer delivery units (at Clapham Junction and Eastleigh), instead of the traditional recruitment process, to develop a talent pipeline for both current and future requirements.

Western

Safety	Worse than Target	Target	Better than Target	2018/19 Actual
Lost Time Injury Frequency Rate (LTIFR)	0.391	0.372	0.353	0.479
Close calls raised	5,700	7,600	9,500	10,799
Close calls per cent closed within 90 days	80%	85%	90%	98%
Train accident risk reduction measures	60%	80%	100%	93%
Top 10 Milestones to reduce level crossing risk	6	8	10	10
Financial Performance				
Financial Performance Measure – gross renewals	£(18.2)m	£0.0	£18.2m	£10.7m
Financial Performance Measure – gross profit and loss	£(5.5)m	£0.0m	£5.5m	£(34.1)m
Financial Performance Measure – gross enhancements only	£(31.8)m	£0.0m	£31.8m	£(94.1)m
Cash Compliance – Income & Expenditure	£35.7m £(8.9)m	£17.9m £(4.5)m	£0.0m	£171.4m
Investment				
Top Investment Milestones	89%	90%	100%	100%
Asset Management				
Reduction in Service Affecting Failures	2,243	2,227	2,221	2,272
Composite Reliability Index	90%	95%	100%	100%
Loally Driven Measures				
Your Voice - Deliver actions due 1st Apr 2018 - 31st March 2019	70%	80%	90%	99%
Diversity and inclusion - % undertaken everyone learning training	50%	60%	70%	80%
Bands 1-8 Objective setting, interim and final review meetings held within timescales	80%	90%	100%	100%
Locally Driven Customer Measures				
Great Western Railway - Level 2 Scorecard	0%	50%	100%	57%
Heathrow Express - Level 2 Scorecard	0%	50%	100%	51%
Managed Stations Passenger Satisfaction (NRPS)	86%	88%	89%	85%
Number of Railway Works Complaints	1,285	1,185	1,085	708
Freight Delivery Metric (FDM-R)	93%	94%	95%	93%
Cross Country right time departure at Bristol Parkway	53%	55%	58%	42%
Route scorecard performance				55.11%

Safety

The route worked hard across the year on more than 200 improvement activities with the aim to make sure that everyone returned home safely. As well as delivering programmes targeting passenger, public and workforce safety, we launched several new initiatives to support mental health, including the introduction of mental health first aiders.

Despite a strong start, we were unable to meet our LTIFR target for the year, finishing with a final annual rate of 0.53 higher than the target of 0.372. Our 'all accident injury rate' improved; however, we saw an increase in sprain, strain, slip and trip injuries that became lost-time injuries. For other scorecard safety measures, the route exceeded the close call raised target, delivering 10,000 against a target of 7,500. We also exceeded our close call close-out rate, delivering 98 per cent against a target of 85 per cent. We delivered 100 per cent of our planned improvement measures to reduce train accident risk against a target of 80 per cent. We completed 100 per cent of our risk reduction measures at level crossings against a target of 80 per cent, which saw the delivery of new miniature stop-light installations at six level crossings in Cornwall and the permanent closure of three level crossings.

All other safety, health and environmental measures show positive performance for the year.

Performance

Train performance was unsatisfactory and below targets for the first half of the year. Performance was negatively affected by various factors including: the final works to complete the Greater West programme, train detection faults, track geometry problems and issues with new trains and crew training.

From period 10 this was reversed and the effect of new trains, new infrastructure and better- performing assets resulted in better reliability and improved performance for GWR, Heathrow Express (HEx) and MTR. This included a reduction in Network Rail caused delays which helped keep trains moving. By March 2019, the route was delivering the most reliable performance for passengers since 2012.

Improved infrastructure in the busy area between Paddington and Reading saw a reduction in delay minutes of 11 per cent, while at the same time supporting the introduction of TfL Rail services. Due to the difficult start to the year, the overall route-wide level of Network Rail-caused delay increased by 8.5 per cent.

The improvement in the Paddington area enabled HEx and TfL Rail to beat their public performance measures (PPM) targets for the year; two of only four operators, nationally, to achieve this in 2018/19.

Of the five performance measures on the GWR scorecard, two were met; 'minutes of unexplained delay' and 'impact of possession overruns'. GWR's primary measure, PPM, finished the year at 84.6 per cent worse than the target 87.6 per cent.

Of the eight performance measures on the HEx scorecard, five were met. The HEx primary measure 'right time performance' target of 70 per cent was achieved in five periods and ended the year at 68.3 per cent, the highest level in 39 periods. The 'on time' and PPM measures were both delivered.

CrossCountry's target 'right time departures from Bristol Parkway' was not achieved due to the poor performance across the route in the first half of the year, identified above. CrossCountry also experienced a marked deterioration in the performance of southbound services which arrived late onto Western route affecting their ability to hit this measure.

Freight services were negatively impacted in the first half of the year by the electrification programme but improved significantly as the year progressed. By the end of the year, the Freight Delivery Metric (FDM) was exceeding target per period and finished at 93.3 per cent against a target of 94.0 per cent.

Around seven million tonnes of aggregate were moved on the route, boosted by the reactivation of the branch line connecting Tytherington Quarry to help move HS2 waste from Old Oak Common. Movement of aviation fuel into Heathrow doubled with other freight volumes remaining significant.

Taking on board the lessons learned elsewhere in the country following the introduction of the May 2018 timetable, we agreed with operators to defer the introduction of the enhanced December 2018 timetable to a combination of May and December 2019. This decision was taken to ensure that any timetable changes would only be introduced when we were confident that their introduction would not have a negative impact on passengers.

Financial Performance

The route delivered all key renewal volumes which resulted in the financial performance measure being positive for the first time during CP5. This was the result of efficiencies made by increased delivery of track high-output volumes, the use of new technologies to renew tunnels and a different approach to designing new structures.

We did not meet all other financial performance targets for the year, largely due to our poor train performance in the first half of the year. However, improved train performance from period 10 onward saw an improvement in our Schedule 8 position. While this was not enough to offset the overall deficit at the end of the

year, it did mean we reduced the deficit to lower than we had predicted mid-year.

Investments

This year, we achieved all our top investment milestones, including the final elements of the transformation of the Great Western Main Line in England. We successfully electrified the railway to Bristol Parkway and Newbury in December 2018. This enabled new GWR Intercity Express Trains (IETs) to run to these stations in electric mode, as well as enabling new GWR Class 387 Electrostar trains, with 20 per cent more capacity, to extend their range to serve Newbury. Platforms were extended at several stations on the North Cotswolds line to enable passengers to board the new, longer IETs. In partnership with GWR, Cocklebury sidings were completed to stable the new Class 387s and the siding at Great Bedwyn was extended to allow new IETs to serve passengers at Bedwyn.

Bristol resignalling was commissioned and the tracks between Bristol Temple Meads and Bristol Parkway were doubled to improve performance and reliability, removing the bottleneck that frequently delayed passenger and freight services outside Bristol Temple Meads.

Additional ticket gates were opened at Bristol Temple Meads to improve passengers' experience, alongside the provision of free water refill stations and free toilet facilities for passengers using our managed stations.

At Bristol Parkway station we delivered a new platform, platform extensions and embankment stabilisation work to help improve capacity at the station and enable the new, faster services scheduled for introduction in the December 2019 timetable.

A £30 million upgrade of Cornwall's signalling, jointly funded by DfT and Cornwall and Isles of Scilly Local Enterprise Partnership, added 21 signals to the Cornish Main Line alongside upgraded level crossings; this will increase resilience and enable improved passenger services planned for the May and December 2019 timetables.

A major remodelling and resignalling scheme was completed at Oxford to enable increased line speeds in the area and better regulation of passenger and freight trains through the station.

Work to enable the Elizabeth line continued, with platform extensions at Acton Main Line, Ealing Broadway, West Ealing and Southall all completed.

Large culverts (flood drains) were successfully installed at Cowley Bridge in Devon to reduce the risk of flooding in this area affecting passenger services.

Physical work started on the South West Rail Resilience Programme to improve the resilience of the railway in

Devon and Cornwall, and in February 2019 DfT confirmed £80 million for the programme.

Asset management

Asset performance negatively affected train performance in the first half of the year, and as a result service-affecting failures (SAF) did not meet target. This was primarily due to train detection assets and track faults. The exceptionally hot weather conditions affected embankments and underlying track formation, resulting in rough ride reports and the need for temporary speed restrictions. Recovery actions taken delivered improvements in train detection reliability, and improved track quality which resulted in the improvements witnessed from period 8 onwards.

Our renewals finished the year in a positive financial performance position for the first time in CP5 and we exceeded all targets for our key volumes. Major renewals were delivered at Westbury North Junction and Southall East to improve performance and reliability, allowing teams to lift the temporary speed restriction in place on the older sections of track.

1,500 miles of track was converted from basic manual visual inspection to automated train-borne inspection (Plain Line Pattern Recognition) to improve the safety, speed and efficiency of managing track.

We completed gauge clearance to enable the cascade of Class 165/166 trains to Bristol, the West Country and South Wales providing newer trains and more capacity for passengers.

Locally driven measures

Public complaints about our work on the railway were significantly reduced this year despite the high volume of enhancement works that were delivered. This reduction was driven by improved pre- notification and more considerate behaviours at worksites.

We met or exceeded our targets regarding the completion of 'Your Voice' actions, ensuring that our people have objectives and regular performance reviews. More than 70 per cent of colleagues have undertaken 'Everyone Learning' training as part of our plan to create a more inclusive and respectful workplace.

Third-party investment

We made good progress throughout the year to deliver projects funded by third parties or to secure third-party funding. In partnership with GWR, we delivered the new Cocklebury sidings and extended the siding at Great Bedwyn, making savings for the public purse.

South Gloucestershire Council approved £25 million to build the Metrobus bridge at Gipsy Patch Lane, Patchway, to enable an extension of the current Metrobus service to serve Bristol Parkway passengers.

We secured £1.5 million funding from Swindon and Wiltshire Local Enterprise Partnership for the installation of a third lift at Chippenham station (in CP6). We also secured funding from the West of England Combined Authority (WECA) and South Gloucestershire for the development of a possible new station at Charfield.

We continue to develop the local authority-funded Metro West Phase 1 and 2 projects to improve suburban services for Bristol, Bath and the surrounding area.

CP6 readiness

As part of the Putting Passengers and Freight First programme, we will become part of Wales & Western region during 2019 and benefit from further devolution to speed up decision making and bring us closer to our stakeholders.

Operational readiness for the smooth delivery of an enhanced timetable in May and December 2019 is well under way. The timetables will bring new services and enable faster journey times for passengers, enabled by the transformation and modernisation the route delivered in CP5.

We have a programme of activity to improve passengers' experience at our managed stations; the

start of CP6 will see new seating delivered at all three managed stations and toilet improvements at Bristol Temple Meads, supported by more customer service training for our station assistants.

We are in advanced planning stages for the implementation of the two largest renewals planned for CP6: modernising our signalling train detection system outside Paddington, and renewing Bristol Temple Meads station roof.

We continue to work jointly with GWR on a range of measures to improve performance for both GWR and HEx services, and we are working closely with TfL Rail to prepare for the full operation of the Elizabeth line. We are working with CrossCountry to improve right time arrival at their key interchange stations, and with Freightliner to improve freight traffic performance.

We retain our focus on financial efficiency; all efficiencies have a named owner and a milestone plan, with regular tracking and management review in place.

Freight and National Passenger Operators

Safety	Worse than Target	Target	Better than Target	2018/19 Actual
Work related absence	40	20	0	0
Derailments	13	10	7	13
SPADs	48	40	32	44
Close calls raised	131	175	219	261
Close calls closed within 90 days	80%	90%	100%	100%
Operator lost time incidents on NR infrastructure	16	12	8	6
Train Performance Measures				
Freight Delivery Metric (FDM-R)	92.5%	94.0%	94.5%	94.0%
Right time Departures - Freight	78.0%	81.0%	84.0%	79.1%
FOC on TOC (DM/100 train km)	1.25	1.18	1.16	1.18
Delay per Incident - Freight	26.30	27.10	28.00	26.30
Cross Country - PPM	89.2%	90.0%	90.8%	84.4%
Cross Country - CaSL	4.00%	3.90%	3.80%	5.85%
Cross Country - Time to 3 minutes	70.5%	73.5%	74.5%	68.6%
Cross Country - Cancellations	3.0%	2.9%	2.8%	2.7%
Caledonian Sleeper-Right Time	75.0%	80.0%	85.0%	81.2%
Charter Trains - performance measure	86.0%	88.0%	90.0%	90.0%
Investment & Asset Management				
CP5 SFN schemes - current year GRIP 6 completion vs baseline	80%	90%	100%	82%
Customer Measures				
Net tonne miles moved - Freight	9.4bn	10.4bn	11.4bn	10.8bn
Freight service plan reviews - delivery against agreed milestones	80%	90%	100%	97%
Strategic capacity - Freight	5%	10%	15%	21%
Cross Country - Average minutes lateness	4.40	4.35	4.30	5.77
Cross Country - Access planning agreed milestones met	75%	80%	85%	71%
Caledonian Sleeper - Roll up of customer scorecard	0%	50%	100%	54%
Charter planning compliance	0%	50%	100%	62%
Freight End Use (FEU) satisfaction	68%	73%	78%	78%
Financial Performance				
Financial Performance Measure	-10%	0%	10%	3%
People Measures				
Your Voice Action Plans - delivery against agreed milestones	70%	80%	90%	100%
Route scorecard performance				53.33%

Freight and National Passenger Operators (FNPO) supports nationally focused customers whose interests extend network-wide and across our geographical routes' boundaries. FNPO does not directly manage assets or control train operations. We deliver outputs and solutions for our customers by working with and through the geographic routes, System Operator and other parts of Network Rail.

Our varied customer base creates challenges in delivering on these commitments. Our customers range from freight operating companies (FOCs), CrossCountry, Caledonian Sleeper, charter operators and aspirant open access operators, who together operate around 1000 trains every day. This means that our stakeholder base is equally diverse ranging from industry third parties (such as ports, shippers and manufacturers) to Governments, the regulator and other public bodies. Our internal stakeholders include the geographic routes and System Operator.

Safety

Whilst we achieved target for four out of our six scorecard safety measures in 2018/19, we failed to achieve our target for both Signals Passed at Danger (SPADs) and Derailments.

As an industry, we have spent the past 12 months working together with Freight Operators to build a better understanding of the root causes of SPADs. Despite this, the rail industry has seen a significant upward trend, for Freight and National Passenger Operators this has resulted in 44 SPADs in the year against a target of 40. The vast majority of these events have seen signals passed by a very short distance and being categorised as low risk.

During this year we have experienced 13 derailments against a target of 10. Whilst all derailments are serious events, we experienced a major derailment of multiple wagons at Hams Hall during September which blocked the main line between Birmingham and Nuneaton. The point of derailment was not on Network Rail infrastructure; however, the train continued in a derailed state and affected the main line, causing significant performance impact as well as impacting terminal access arrangements.

We have also been working closely with STE (Network Rail's Safety, Technical and Engineering function) and the Routes to enhance the use of WILD (Wheel Impact Load Detection) technology, so we can identify any adverse loading trends that might potentially lead to derailments.

Elsewhere, we have been working with our customers to reduce the number of injuries to their staff on Network Rail infrastructure. We have completed 140 joint safety tours with freight operators. The results of this work are reflected in our end of year results with six incidents against a target of ten.

Finally, we will be developing further FNPO safety initiatives in CP6 with the introduction of the £22 million FNPO Safety Improvement Programme.

Performance

Network Rail's regulatory target for freight (FDM) ended the year at 94 per cent against a target of 94 per cent. This represents a 0.5 per cent improvement on last year. The first seven periods of the year were challenging – with a mix of storms, heat related delay and in increase in timetable related delay resulting in the year to date figure being roughly 1 per cent below where we would expect it. However, as a result of good asset performance, lower than average disruption through autumn and a mild winter period performance has recovered well. Freight operators have also performed well – with delay minutes per 100km meeting our target.

The first three years of the control period showed steady improvement for CrossCountry. However, the last 18 months, and this year in particular, have been more challenging. PPM outturn was 84.4 per cent against a target of 90 per cent. There has been an improvement in performance since December, with PPM being met in the last two periods.

Finance

Continued freight growth particularly in the aggregates and intermodal sectors means that we have outperformed our financial targets for the financial year by £3.5m. However, this has been partially offset by poor train performance, particularly at the start of the financial year, which has led to an adverse amount of cost compensation paid out to operators through schedule 8. Tight cost controls, and recovery of backdated income have also assisted our financial result for the year.

Investment

We have delivered the majority of the 22 Strategic Freight Network Schemes planned for CP5. This includes a major £60.4 million upgrade on the Felixstowe branch line, which will enable an additional ten freight trains in either direction from the Port of Felixstowe. This will be a major boost for our customers and for the national and regional economy.

We failed to achieve our target of delivering 90 per cent of schemes in CP6 due to the cancellation/deferral of the Southampton Freight Train Lengthening Scheme. This was cancelled at a route level due to various concerns over the viability of works. FNPO have commissioned an independent review, which will allow us to learn lessons and show accountability to our stakeholders.

We ended the year with around £25 million underspend on the Strategic Freight Network Fund. Our work developing Network Rail's freight estate has secured

around £3 million in private investment and has secured a new freight revenue of over £3 million.

We are working closely with the DfT and sharing the prioritisation of CP6 interventions to support freight growth with the aim of progressing these smoothly through the Investment Decision Framework.

People

Our People Strategy focuses on further developing our people capability and helping our people deliver to the best of their ability. We will continue to identify people with key skills and high potential in order to drive business performance across FNPO by developing, deploying, engaging and retaining talent. We will seek to improve the health and wellbeing of our employees as well as further improving the gender diversity, which currently sits at 38 per cent female, which is well above the company average. We achieved 100 per cent of our Your Voice target this year.

Customer focussed

Our locally driven customer measures represent targets that have been identified by our customers as key deliverables for FNPO. For our freight customers we have met targets aimed at improving freight growth and increased reliability on the network. These include the amount of net tonne miles of materials moved, reviews of Freight Service Delivery Plans to optimise the timetable and also strategic capacity.

We failed to achieve Cross Country targets on access planning and average lateness. We have a comprehensive plan in place to address these issues and have set realistic, agreed targets for the next year. We have hit targets for providing our chartered customers with timely and reliable information so they can better plan their business and commercial offer.

System Operator

Safety & Sustainability	Worse than Target	Target	Better than Target	2018/19 Actual
Everyone home safe every day (work related absence)	40	35	30	43
Workforce safety (% close calls closed within 90 days)	80%	85%	90%	99%
Health and wellbeing (milestone delivery)	60%	80%	100%	100%
Sustainability - supporting our communities (0.5 volunteer days per employee per year)	303	319	335	405
Finance				
Financial performance measure – opex (£m)	32,034	30,509	28,984	30,343
People				
Your Voice action planning (milestone delivery)	60%	80%	100%	94%
Operational planner vacancy gap	12%	10%	8%	3%
Continuous improvement training	277	312	347	378
Diversity & Inclusion - 20by20 (milestone delivery)	60%	80%	100%	100%
Train Performance				
Impact on train performance (delay minutes)	388,472	369,973	351,474	351,010
Impact on train performance (incidents)	27,006	25,720	24,434	22,457
Planning a better network				
Strategic planning milestones (delivery)	60%	80%	100%	84%
Managing output changes to the network				
Department for Transport (funded project development miletones)	60%	80%	100%	70%
Transport Scotland (funded project development miletones)	60%	80%	100%	67%
Welsh Government/Transport for Wales (funded project development milestones)	60%	80%	100%	100%
Subnational transport bodies (TfL; TfN; MC) (funded project development milestones)	60%	80%	100%	100%
Franchising milestones (by competition)	60%	80%	100%	100%
HS2 programme milestones	60%	80%	100%	97%
Managing the access rights framework				
Sale of access rights review (key milestones)	60%	80%	100%	100%
Planning the timetable				
WTT production milestones	N/A	4	N/A	2
TW-12 compliance	85%	90%	95%	0%
Cross-functional improvement programmes				
CP6 delivery plan/PR18 (key milestones)	60%	80%	100%	100%
End to end planning (key milestones)	60%	80%	100%	100%
Capacity planning improvement portfolio (key milestones)	60%	80%	100%	100%
Role of the client & early stage project development (key milestones)	60%	80%	100%	100%
Analytical Capability (key milestones)	60%	80%	100%	100%
Customer advocacy				
Routes	3.32	3.66	3.94	3.54
Operators	2.41	2.69	3.01	2.87
Funders and Franchising Authorities	2.95	3.24	3.52	4.00
Other infrastructure managers	3.21	3.54	3.86	3.37
System Operator scorecard performance				79.19%

As the System Operator, planning the use of capacity for passengers and freight users is at the heart of everything we do. Our planning activities span the whole breadth of railway planning, from what the railway could look like in 30 plus years' time through to tomorrow's timetable.

This year we have focussed on strengthening the capability of our teams, in readiness for CP6, and in response to industry feedback and learning arising from the operational implementation of the May 2018 timetable. This caused significant and deeply regrettable disruption to the lives of many passengers, leading to an inquiry by the ORR into the causes of the timetable disruption.

As we continue to develop our role as System Operator, we will look to work with others to address issues highlighted by the ORR's inquiry. We will provide the greater leadership and co-ordination role that has been identified as having been lacking, and to ensure that passengers and end users are at the centre of our thinking in everything we do.

Safety and Sustainability

Our performance in this section of the scorecard has been strong throughout the year. A key workforce safety measure relates to close calls attributed to the System Operator being closed within 90 days. The closure of close calls and application of the learning is key to influencing our role in system safety. We have seen a consistently strong performance against this measure and we end the year having exceeded our target.

People

Our performance across this section of the scorecard has been consistently positive throughout the year, delivering a wealth of activity relating to employee engagement. We have specifically tracked our diversity and inclusion activities – a key part of making System Operator a great place to work and supporting our ambition to attract, develop and retain talent from the widest possible range of people.

An ambitious acceleration of our CP6 plans to specifically address operational planner retention and resource has also been delivered successfully with over 110 new Operational Planners recruited through the year staff turnover for operational planners has more than halved and we end the year favourable to target for operational planner vacancy gap at just 3 per cent across the System Operator.

Finance

We have continued to maintain control of costs throughout the year and are in line with our forecast at year end at circa £30.5 million for expenditure. In line with our plans to allow us to exit the year in readiness to deliver our CP6 outputs, we have continued to build our

organisation, supported by a number of accelerated plans to strengthen our capability.

Train Performance

Timetable performance, measured by the numbers of incidents and minutes associated with errors in the timetable, has remained largely favourable to target across the year.

Performance against this measure includes the implementation of contingency timetables for industrial action and for operational incidents.

Delay incidents and minutes end the year favourable to target despite increasing demand and complexity in timetabling activity year on year.

Strategic Planning

Throughout the year strategic planning activity in the System Operator has been delivered in line with the annual plan (including approved changes) and for the first time, through the process of Continuous Modular Strategic Planning (CMSP). This approach brings the needs of passengers and freight users to the heart of the long-term planning process, enabling us to forecast passenger and freight demand, identify potential problems and develop options for funders through a more flexible and 'modular' approach.

Delivery against our plan has been measured through the use of milestones throughout the year, which has largely remained on target. We are applying lessons learned in implementing the CMSP activity to our future plans.

Initiatives delivered across the Strategic Planning teams in the North included the North of England Freight Study, consultation on the East Coast Main Line Route study, Strategic advice for the Sheffield area, and a study relating to rail demand across the Cumbrian coast.

During the year we also completed seven studies in the South, including a piece of work for the Cambridge South Corridor. Our study of opportunities on Great Eastern mainline has been particularly well received by stakeholders. Further CMSP studies are currently under way, planned for completion during the next financial year, including the exciting Railway for Everyone strategy which is identifying prioritised opportunities to remove impediments and offer rail travel as a more attractive option for more people.

Network Rail has also led the industry in developing a plan to deliver Scottish Ministers' HLOS requirements including improving journey times for ScotRail and increasing the average speed of freight services. A depots and stabling strategy has also been drafted, and work has taken place to develop and deliver a freight connection at Blackford and a masterplan for Edinburgh Waverley.

The Wales & Western team met its milestones for strategic advice in 2018/19 which included developing Strategic Outline Business Cases (SOBCs) for schemes to improve passenger journeys.

Throughout the year we have developed the strategic questions for CP6, set out in the System Operator Business Plan, with further studies to be added following conclusion with funders and customers about key strategic questions and prioritisation thereof.

A further key area of focus this year has been on progressing network-wide workstreams to improve the way Strategic Planning is carried out as a profession within the System Operator, and to embed safety considerations more fully in our working practices. Work is underway to develop a suite of options to improve the practice, competencies and professional development of all our Strategic Planning teams. The concept of safety baselines that inform the development of network enhancements has also been pioneered, with the development of a standard process for their creation and use underway.

Rail development programmes

We continue to work closely with our funders, sub-national transport bodies and other partners to develop upgrades to the rail network that drive the economic benefits that stakeholders want to realise. This is a broad portfolio of activity and despite challenges in some areas, performance remains within the target range across this section of the scorecard and favourable to target for the majority of measures.

We are a partner of Transport for the North and have worked closely with them to develop the Northern Powerhouse Rail SOBC, and to integrate rail improvement aspirations across the Midlands, North and East Coast geographies.

Other successes delivered this year include Cambridge South station, the development work for which is with DfT for consideration (we are delighted that this work was half-funded by third parties). The public consultation for the Croydon Area Redevelopment (including East Croydon station) was successfully held and informed the outline business case, which is due for submission in July 2019. We completed the pre-GRIP feasibility work for the much-needed short term interventions at Clapham Junction station, aiming to address the most immediate overcrowding issues.

Our Crossrail 2 team (co-located with Transport for London) has developed the Independent Affordability Review response papers for the South West branches and West Anglia main line for Crossrail 2, to enable continued consideration of the project.

The Wales & Western team has been developing new station schemes, journey time improvement schemes and schemes aimed at increasing the frequency of journeys for passengers. Some examples are new stations across Wales, journey time improvements to the West Country and additional capacity into London.

Network Rail has worked collaboratively with Transport Scotland and the ORR to develop a "Team Scotland Execution Plan" which describes the governance of the Scottish enhancement pipeline and the supporting processes, procedures and accountabilities. The timescales to achieve this have proved longer than anticipated, but progress has been over the year made; five priority programmes are being developed and taken through the process and imminent submission of further Strategic Business Cases to Investment Decision Makers. A further two programmes have been developed to GRIP 2, and Strategic Business Cases will be developed for both as soon as possible.

Following a year of intensive work by the System Operator HS2 Integration team in close collaboration with LNW route, DfT, HS2 Ltd, the Euston Master Development Partner and other stakeholders, we have developed and selected the strategic concept for the enhancement of our station at Euston, supported by a compelling Strategic Outline Business Case demonstrating substantial benefits to passengers and a positive economic case. The concept and case have been endorsed by the Network Rail executive and Board as well as DfT Board Investment and Commercial Committee, with funding for the next stage of development now secured.

Managed through the High Speed Integration Steering Group, and in collaboration with key industry parties, the System Operator has led the collaborative development of a comprehensive framework, scope and set of agreed accountabilities for the whole-system integration of the HS2 network. Throughout the year System Operator has also continued to work with HS2 and DfT to support and feed in to the design development for HS2 Phases 2A and 2B, including support for the relevant legislative processes.

Franchising

We have also provided an enhanced level of advice and support to the DfT to inform on the deliverability of Invitation to Tender phases for franchises, albeit some of this activity has now been suspended as a result of the government's wider review into rail led by Keith Williams. The team has also supported the Department for Transport by providing strategic advice about direct award activity for Great Western and Cross Country. We have supported Transport for Wales by providing strategic advice on the planning and mobilisation of the new Wales & Borders franchise which commenced in the autumn.

Sale of Access rights (SOAR)

Cross industry stakeholder engagement to identify key issues, opportunities and concerns with the current

SOAR process. A package of reforms has been developed to drive a stronger route ownership of the process, an improved customer experience, reliable assurance and governance and improved System Operator involvement to provide Routes with early advice and to support network-level decisions.

The latter part of the year saw the first phase of implementation of the reforms, including updated SOAR Panel submission paperwork, including benefit management documentation and earlier engagement of key SOAR panel members within Route businesses. Reform of the central SOAR panel, its roles and responsibilities, including enhancing the role of the chair to be accountable for the delivery of the SOAR process across the organisation was also undertaken. We also developed an information governance and assurance framework at multiple levels to enable more detailed recording of decisions and track delivery of benefits.

Planning the timetable

Developing and publishing the Working Timetable (WTT) is measured through completion of the twice-yearly production milestones, D-40 Bid and D-26 Offer, as outlined in the Network Code.

Following the May 2018 timetable issues, we worked with operator colleagues and the industry timetable assurance Project Management Office (PMO) to deliver a de-risked hybrid timetable for December 2018. This timetable was delivered to revised dates agreed with industry, which were later than those described in the Network Code. Consequently, the original D-26 offer milestone was missed. On implementation, the timetable has resulted in significant performance improvements being realised, especially for Northern, TPE and GTR.

Development of the May 2019 timetable has been similarly undertaken with an industry agreed revision to the Bid date, which is represented as a missed D-40 milestone. The May 2019 timetable was provided to operators on time at D-26 representing an industry recovery to Network Code timescales. The May 2019 timetable changes have also been developed with independent assurance provided by the PMO.

TW-12 compliance

At the end of August 2018, we established a revised industry recovery plan for Informed Traveller short term planning work, taking into account the work required for the de-risking of the December 2018 timetable development. At year end we were in line with our revised plan, and at mid-April 2019 have now recovered to TW-12.

Network Rail have continued to make substantial Schedule 4 payments owing to the late publication of the amended timetable, and the associated loss of discount factors.

Cross-functional improvement programmes

Performance across the System Operator improvement programmes has been strong throughout the year, ending at 100 per cent of milestones completed to deadline.

This suite of programmes has delivered key areas of work to support delivery of our CP6 commitments and improved ways of working within the System Operator. In part this includes work to improve line of sight between strategic planning activity and train service outputs, and a cross-functional focus on applying continuous improvement to our ways of working. Undertaking feasibility studies to inform our CP6 capital expenditure programmes has also been a key focus, and will be informed by our action plan in response to the ORR's independent inquiry, particularly in the development of an industry timetabling technology strategy.

Customer advocacy

The customer advocacy survey measured the level of satisfaction with our outputs, weighted by the priority each customer attached to those outputs. Overall the results saw marginal changes from the previous survey, with a slight improvement in advocacy levels regarding operators and funders, and a slight worsening with regards to Routes and other infrastructure managers. September 2019 will see us conduct a face-to-face survey to obtain a richer level of feedback.

NetworkRail

Working for you